SWUTC Students Researchers Honored by CUTC

Sashank Musti, former SWUTC graduate researcher at the University of Texas at Austin, was honored as the 2010 recipient of the Charley V. Wootan Memorial Award for the best MS thesis in North America in the field of Transportation Planning and Policy. Mr. Musti’s thesis is titled “Evolution of the Household Vehicle Fleet: Anticipating Fleet Compositions, Plug-In Hybrid Electric Vehicle (PHEV) Adoption and Greenhouse Gas (GHG) Emissions in Austin, Texas.” While in graduate school, Mr. Musti conducted research in association with Dr. Kara Kockelman’s SWUTC study “Evolution of the Nation’s Vehicle Fleet and the Market for PHEVs.” Mr. Musti received his Masters of Science in Civil Engineering in December 2009 and is now employed by Cambridge Systematics, Inc.

Kai Yin, current SWUTC graduate researcher at Texas A&M University, was honored as the 2010 recipient of the Pikarsky Award for the outstanding MS thesis in North America in the field of Science & Technology. Mr. Yin’s thesis is titled “Modeling Information Propagation Along Traffic on Two Parallel Roads.” While pursuing his masters, Mr. Yin conducted research in association with Dr. Bruce Wang’s SWUTC study “Characterizing Information Propagation Through Inter-Vehicle Communication on a Simple Network of Two Parallel Roads.” Mr. Yin graduated in December 2010 and is currently pursuing his doctoral degree at Texas A&M University while also serving as principal researcher on a SWUTC effort conducting taxiway aircraft traffic analysis at Houston airports.

Both of these awards were presented at the CUTC Annual Awards Banquet in January 2011 and carried a cash stipend of $1,500 each.

Continued on page 2
Former SWUTC Student Selected as IATBR Dissertation Award Winner

University of Texas at Austin graduate Dr. Jason Lemp was selected as the 2009 recipient of the Eric Pas Dissertation Prize awarded by the International Association for Travel Behaviour Research (IATBR) during the annual meeting of the Transportation Research Board in January 2011. This prize is awarded annually to the individual who is judged as submitting the dissertation that makes the greatest impact among all dissertations nominated for the prize in any given year. The prize signals the arrival of exceptional new talent in the field. Dr. Lemp’s dissertation is titled “Capturing Random Utility Maximization Behavior in Continuous Choice Data: Application to Work Tour Scheduling.” While at the University of Texas at Austin, Dr. Lemp studied under the guidance of Dr. Kara Kockelman. He was an active graduate researcher on several SWUTC research efforts and also supported through the SWUTC Advanced Institute program. Dr. Lemp graduated in December 2009 and is currently employed at Cambridge Systematics.

SWUTC Graduate Recognized with 2010 CUTC-ARTBA New Faculty Member Award

Former SWUTC PhD student, Dr. Satish Ukkusuri, from the University of Texas at Austin was the 2010 recipient of the CUTC-ARTBA New Faculty Award presented at the Annual CUTC Awards Reception and Banquet in January 2011. This award recognizes outstanding transportation faculty members for their accomplishments in the field of transportation research and education. While at the University of Texas at Austin, Dr. Ukkusuri studied under the guidance of Dr. Travis Waller and was coauthor on numerous papers and presentations produced by Dr. Waller’s SWUTC research efforts. Dr. Ukkusuri is currently an Associate Professor in Civil Engineering at Purdue University.

Key SWUTC Personnel Recognized with Honors

Key SWUTC Researcher and civil engineering Assistant Professor Dr. Amit Bhasin from the University of Texas at Austin was the recipient of the 2011 National Science Foundation Faculty Early Career Development (CAREER) Program Award. He will receive $400,000 over the next five years to support his research on “Investigating Molecular, Physical and Mechanical Properties that Influence Macroscopic Self-Healing in Asphalt Materials”. CAREER awards are given to young researchers in science and engineering who have also translated their work into significant educational activities. The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the NSF’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and integration of education and research within the context of the mission of their organizations. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research.
Dr. McCray’s paper “Analyzing the Activity Spaces of Low-Income Teenagers: How do They Perceive the Spaces where Activities are Carried Out?” analyzes the relationship between adolescents’ perceived safety of places where they engage in their daily activities, socioeconomic characteristics, and actual crime rates of corresponding activity places.

This paper builds directly on Dr. McCray’s SWUTC research efforts for the past three years which have focused on the effect of public transit on social and economic opportunities for youth. And capturing the activity patterns of a youthful disadvantaged population.

Dr. C. Michael Walton, SWUTC Executive Committee Member, key researcher and faculty member at the University of Texas at Austin is the recipient of the 2011 Theodore M. Matson Memorial Award which was presented during the Annual Institute of Transportation Engineers (ITE) Meeting and Exhibit on April 5, 2011 in Lake Buena Vista, Florida. This award is presented annually to recognize an individual who has made an outstanding contribution to the practice of traffic engineering, for example, a practical application of traffic engineering techniques or principles, a valuable contribution through research, the successful adaptation of research findings to a practical traffic situation, or the advancement of the profession through training or administration.

Dr. Bhasin earned his doctorate from Texas A&M University in 2006. While pursuing his degree, he was a graduate research assistant on two SWUTC research efforts which investigated novel methods to accelerate healing and improving performance in asphalt mixtures. In 2008, he joined the faculty at the University of Texas at Austin.

The American Road and Transportation Builders Association (ARTBA) honored SWUTC Executive Committee Member and University Transportation Center for Mobility Director, Dr. Melissa Tooley with its 2010 S.S. Steinberg Award at their annual meeting held during the 90th Annual Meeting of the Transportation Research Board January 24, 2011.

“The Steinberg Award is named after the founding president of the ARTBA Research and Education Division (RED) and recognizes an individual who has made remarkable contributions to transportation education.

“It is a huge thrill to receive the Steinberg Award, and all that it represents,” Tooley said of the honor. “There is no greater tribute than to be recognized by my peers, especially in an organization like ARTBA.”

University of Texas at Austin Assistant Professor in Community and Urban Planning and SWUTC Executive Committee Member and researcher, Dr. Talia McCray was the recipient of the Best Conference Paper Award from the Urban Affairs Association (UAA) at their annual 2011 Meeting in New Orleans, LA on March 17, 2011.

Some people ask what happened, some people watch what happens, and some people make things happen. Melissa Tooley makes things happen.” The sentence appears on an ARTBA news release announcing the award. The quote is from an industry peer describing Tooley.

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This year, the SWUTC selected 39 new research studies to fund. Five of these are highlighted here.

**Highway Safety**

IntelliDrive®SM is USDOT’s most recent ITS program initiative focused on advancing connectivity among and within the roadway infrastructure to significantly improve safety and mobility of the US transportation system. The program is working toward a future vision where vehicles and the infrastructure are connected to enable crashless vehicles and access to real-time data on the status of both vehicle and roadway, which can potentially transform transportation system management and operations to dramatically improve safety and performance. The goal of this project, being conducted by Dr. Kevin Balke of the Texas Transportation Institute, is to explore potential applications that utilize IntelliDrive®SM technologies for improving traffic operations and safety. Through a series of “brainstorming” workshops, the research team will develop concept of operations documents describing the potential applications of IntelliDrive®SM technologies and concepts to address a variety of transportation operations and management issues. For example, examining the potential of this technology to enhance transit and emergency vehicle fleet management; supporting congestion pricing, dynamic priced and HOT lanes, and mileage-based user fee applications; active transportation management such as speed harmonization; enhancing work zone safety; enhancing transportation planning and emergency evaluation for natural and man-made disasters; and the potential of this technology to provide environmental data to support “green” transportation management choices. This research effort will also produce briefing documents outlining and addressing specific IntelliDrive®SM research needs that could lead to the development of deployable systems.

For more information, visit [http://swutc.tamu.edu/projectdescriptions/161103.htm](http://swutc.tamu.edu/projectdescriptions/161103.htm)

**Transportation Alternatives**

Much of the low-density urban development that has occurred in the United States over the last several decades has been enabled by and designed around the automobile. Most efforts to reduce automobile usage have focused on public transit, but carsharing may help to fill the space that remains between public transit and private vehicle ownership. Carsharing is a specific type of car rental that allows individuals or businesses to rent vehicles by the hour or minute, as opposed to traditional car rentals that are based on day- or week-long rentals. The carsharing service handles all costs of ownership, including purchasing, maintaining, insuring, and fueling the vehicle. This type of service draws users who only need a car on an occasional basis, allowing these individuals the benefits of private vehicle access without the demands of car ownership. In combination with public transit availability, walking, bicycling, and carpooling, carsharing allows an individual a variety of transportation alternatives beyond private vehicle use. This research project being conducted by Dr. Randy Machemehl at the University of Texas at Austin is focusing on the relationship between public transportation providers and carsharing services. The research team will also administer a survey to the citizens of the Austin, Texas to develop a clearer understanding of the reasons for choosing carsharing, the vehicle ownership trends of users, and the transit usage patterns of users.

For more information, visit [http://swutc.tamu.edu/projectdescriptions/476660-00079.htm](http://swutc.tamu.edu/projectdescriptions/476660-00079.htm)
**Carbon Sequestration**

Carbon footprints, carbon credits and associated carbon sequestration techniques are rapidly becoming part of how environmental mitigation business is conducted, not only in Texas, but globally. As atmospheric concentrations of greenhouse gases (GHG) such as carbon dioxide (CO2) rise due to urbanization and traffic congestion, means and methods for mitigating the effects are becoming a marketable commodity. Terrestrial carbon sequestration is the general term used for the capture and long-term storage of CO2. For a transportation facility, this occurs through the natural processes of the roadside vegetation and soil. Texas has a State maintained highway system of approximately 80,000 linear miles of roadway with over 1.1 million acres of right-of-way, not including the street systems of cities, towns and local communities. The majority of these roadways have supporting vegetation within their rights-of-way that usually consists of various combinations of grasses, shrubs and trees. If local, state and federal agencies decide to adopt carbon emission trading programs or a carbon credit system, a more precise and reliable method for quantifying the carbon sequestration capabilities of given vegetation and soil types as carbon sinks will be necessary. Current practices rely upon modeling and in-situ quantification methods. This project being conducted by **Ms. Beverly Storey** at the Texas Transportation Institute is testing specific plants and soil types to demonstrate how carbon sequestration can be quantified by measurement under controlled environmental conditions.

For more information, visit [http://swutc.tamu.edu/projectdescriptions/476660-00028.htm](http://swutc.tamu.edu/projectdescriptions/476660-00028.htm)

**Operational Safety**

Right-turn lanes provide space for the deceleration and storage of right-turn vehicles, and separate turning vehicles from through movements. Dual right-turn lanes are increasingly used at urban intersections primarily for two reasons: (1) to accommodate high right-turn demands and avoid turn-pocket overflows, and/or (2) to prevent right-turn vehicles that exit from a nearby upstream freeway off-ramp (on the left of the roadway) from abruptly changing too many lanes toward the right-turn lane at the intersection. In addition, a number of other factors may affect the decisions on the installation of dual right-turn lanes. However, warrants for dual right lane installation are almost non-existent, leaving traffic engineers to rely on engineering judgment. This research being conducted by **Dr. Yi Qi** of Texas Southern University aims to develop warrants for installation of dual right-turn lanes at signalized intersections. Both the operational and safety benefits/costs will be analyzed by surveying traffic engineers and by conducting traffic simulation-based analysis. A microscopic traffic simulation model, such as VISSIM, will be used to quantify the operation benefits; while the Surrogate Safety Assessment Model (SSAM) developed by Siemens will be used to analyze the safety gains due to installation of dual right-turn lanes.

For more information, visit [http://swutc.tamu.edu/projectdescriptions/161141.htm](http://swutc.tamu.edu/projectdescriptions/161141.htm)

**Hybrid Trucks**

Expanding multi-metropolitan, single large city and even Mega-Region (MR) growth highlight the importance of pursuing cleaner, more efficient methods to move freight to meet EPA urban air quality standards. This study being conducted by **Mr. Rob Harrison** of the University of Texas at Austin/CTR will identify the leading hybrid technologies for use on urban trucks, such as delivery or garbage trucks, and evaluate each through a cost-benefit approach using secondary data and, if possible, information from the operators currently pilot-testing various models. The study will derive a timeline for the adoption of each type of hybrid truck, the full range of benefits to both users and society of such adoption, and estimates of the prices of each system.

For more information, visit [http://swutc.tamu.edu/projectdescriptions/476660-00080.htm](http://swutc.tamu.edu/projectdescriptions/476660-00080.htm)
Building on last year’s very successful, and positively reviewed student conference, the 2nd annual consortium-wide student symposium was held in Winedale, TX on April 15th of this year. The goal of this gathering was to bring together students from the three member universities in the SWUTC consortium in a casual, relaxed setting and provide them the opportunity to work together on a structured activity and develop their professional network. The one day symposium was open to graduate transportation students and faculty members from Texas A&M University, Texas Southern University and the University of Texas at Austin.

Attendance increased this year over last with 59 graduate students participating and 13 faculty and staff members. The day began with welcoming comments from key SWUTC personnel and an icebreaker activity designed to get the students interacting with each other. Next, the students were divided into work teams based on their previously identified area of interest. The student groups for this conference consisted of Congestion/Oversaturated Intersection Management, Safety Management, Sustainability, Transportation Finance and ITS. Each team spent the remainder of the day defining the issues and the actions that would be needed to meet the transportation challenges for their area in the year 2030. Each team prepared a 10 minute presentation at the end of the day summarizing their findings and plans of action. Great effort was made to ensure that each group had equal representation from each university. Faculty members were free to roam and interact with the various groups to mentor and help facilitate their discussions.

Post symposium student evaluations were very positive. “I attended last year also, and I want to say this year is much better. Thank you all!” writes one student evaluator. “It was an excellent approach to get to know people from other universities and institutes. A very enjoyable experience,” commented another.

The coordinators for this event were led by Mr. Khosro Godazi from Texas Southern University and included Dr. Zhanmin Zhang from the University of Texas at Austin and Dr. Luca Quadrifoglio from Texas A&M University. Other faculty/staff attending: from TSU - Dr. Carol Lewis; from TAMUS - Dr. Herb Richardson, Mr. Dock Burke, Dr. Dominique Lord, Dr. Gene Hawkins, Dr. Bruce Wang, Dr. Yunlong Zhang, Ms. Barbara Lorenz; and from UT-Austin - Dr. Michael Walton.
Congratulations to these current students who have achieved the following significant accomplishments.

**Nicolas Norboge** - SWUTC MS student researcher at Texas A&M University was named as a 2011 *Eno Fellow* by the Eno Transportation Foundation.

Each year, the Eno Leadership Development Conference gives 20 of the nation’s top graduate students in transportation a first-hand look at how national transportation policies are developed. Students apply to the program early in the year, and those selected as “Eno Fellows” go to Washington, DC, for a week of meetings with federal officials and leaders of business and non-profit organizations in the spring. This year’s conference will be held during the week of June 6–10, 2011.

**Katie Larsen** - SWUTC Ph.D. student researcher and Advanced Institute fellow at the University of Texas at Austin was selected to receive a $2,000 *Helene M. Overly Memorial Scholarship* from the WTS Foundation.

This competitive scholarship is awarded to women pursuing graduate studies in transportation or a related field. And is based on the applicant’s specific transportation involvement and goals, job skills and academic record.

**Regional News**

RITA Administrator Visits SWUTC, UTCM and TTI

During Peter Appel’s Feb. 18 visit to the SWUTC, UTCM, and TTI it was easy to see what motivates the administrator of the Research and Innovative Technology Administration (RITA), an agency of the U.S. Department of Transportation (US DOT).

“One of my passions is to get people in different aspects of transportation talking to each other and realizing shared areas of interest,” Appel said at a luncheon with nearly two dozen graduate students pursuing transportation-related careers. The students represented some of the best and brightest in the SWUTC and UTCM programs, from both The Texas A&M University System and Texas Southern University. The previous day, Administrator Appel was in Austin visiting students and faculty/staff at UT-Austin/CTR.

Appel, who was appointed RITA administrator in 2009, coordinates the US DOT’s research, education and technology transfer programs, including the University Transportation Centers (UTC) Program. TTI is home to SWUTC and UTCM — two of the nation’s 60 UTCs — and Appel came here to see these facilities firsthand.

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Appel’s tour included overviews of TTI, SWUTC and UTCM, the viewing of a crash test at TTI’s Riverside Campus, and a ride in the Institute’s instrumented vehicle designed for human factors research. According to Appel, he especially enjoyed the chance to visit directly with students over lunch. “It’s an exciting time to be in transportation — to address the issues of safety, global communities and mobility and deal with environmental issues. I want to personally thank you for being in the transportation field.”

“Students are the ultimate payoff,” SWUTC Director Dock Burke told Appel about RITA’s impact on funding. “But we also develop critical spinoff activities like new centers, new technologies and collaborations that would not be possible without the funding we get from RITA.”

Melissa Tooley, director of UTCM, agrees. “From enhancements to the research that goes into TTI’s Urban Mobility Report to UTCM’s leading role in the discussion on mileage-based user fees, funding from RITA has helped establish ongoing initiatives that are making a difference in solving transportation problems,” she told Appel.

With the help of research, education and technology transfer initiatives at UTCM and SWUTC, TTI maintains a close association with many academic units of the A&M — including the colleges of engineering, architecture and agriculture and life sciences, the Health Science Center and the Bush School of Government and Public Service — as well as with other universities such as Texas Southern University, The University of Texas at Austin and Prairie View A&M University.

As he was leaving TTI, Appel said he was impressed with what he saw and heard. “TTI is a national leader in transportation with a tremendous variety of cutting-edge research. I really like the interdisciplinary aspects of its research.” Noting the linkages among the engineering, policy and finance issues of transportation, Appel said, “It’s great to have each of these groups talking to each other.”

**Region 6 UTCs Meet in New Orleans**

Where can we collaborate? That was a primary focus of a meeting of the Region 6 UTCs convened April 27th on the campus of the University of New Orleans. Specifically, attendees discussed research activities underway at each UTC involving transportation responses to emergency-related events. Several common areas of interest and expertise were discovered to suggest future research collaborations among the individual UTCs.

Joining in the discussion and reviewing the activities at their respective universities were - from the Gulf Coast Research Center for Evacuation and Transportation Resiliency (GCRCE-TR) - **Brian Wolshon, Vinayak Dixit, Thomas Montz, John Renne, Billy Fields, James Amdal, Carol Short and Stan Swigart.** From the Southwest Region University transportation Center (SWUTC) - **Dock Burke, Herb Richardson, Carol Lewis, Rob Harrison and Barb Lorenz.** From the University Transportation Center for Mobility (UTCM) - **Melissa Tooley.** From the Mack Blackwell Rural Transportation Center (MBTC) - **Tish Pohl.** From the Oklahoma Transportation Center (OkTC) - **Arni Hagen, Michelle McFarland, and via Skype, Tony Dark and John Havlicek.** And representing USDOT/RITA - **Amy Stearns.**

After a brief overview of the unique research opportunities afforded by UTC funding, personnel from GCRCE-TR highlighted specific research activities at their UTC. Including work on green asphalt and self-healing asphalt technologies, research efforts currently underway that are leading to new partnerships and evaluating
maritime components and their effectiveness to respond to disasters. The GCRCETR’a acquisition of a new driving simulator has led to a large increase in external matching work with the LADOTD and with LSU’s medical school that is conducting sleep deprivation and drug impairment research. Also highlighted was the upcoming National Evacuation Conference to be held in 2012 in New Orleans.

John Havlicek from OkTC reviewed their research efforts that are developing an intelligent winter weather vehicle monitoring system (for snow plows, etc.) which integrates automatic vehicle location (AVL) information with information regarding where and which chemicals have been recently applied on the roadways. Along with weather sensor data from ODOT pavement and bridge sensors as well as other weather information includes data from the Oklahoma Mesonet. This information gathered in a central location will allow for improved monitoring of roadway conditions across the state and will result in increased traveler safety.

Carol Lewis from the SWUTC highlighted the Department of Homeland Security (DHS) National Transportation Security Center for Excellence - Petrochemicals at Texas Southern University. This center’s focus is to investigate and advance methods and strategies that will increase the resilience of the nation’s multimodal infrastructure to terrorist attack on the movement of petrochemicals, complements and supports SWUTC research efforts.

Tish Pohl from the MBTC reviewed the DHS National Transportation Security Center of Excellence at the University of Arkansas which focuses on the security of the intermodal transportation systems of the United States at the local, state, and national levels. A current research effort at MBTC is conducting a computer-based vulnerability assessment and emergency response models for inland waterway transportation systems.

The meeting concluded with a brief overview, by Melissa Tooley from the UTCM, of the current status of legislative and administrative initiatives involving the UTC program.

Journal Publications
(Recent Selected Publications Based on SWUTC Research)

*Carbon Nanotubes and Carbon Nanofibers for Enhancing the Mechanical Properties of Nanocomposite Cementitious Materials*, Mr. Bryan Tyson, Dr. Rashid Abu Al-Rub, Mr. Ardavan Yazdanbakhsh, Dr. Zachary Grasley, Texas A&M University, published in the *ASCE Journal of Materials in Civil Engineering.*

*Design of Comprehensive Microsimulator of Household Vehicle Fleet Composition, Utilization and Evolution*, Mr. Ravi Paleti, Mr. Naveen Eluru, Dr. Chandra Bhat, Mr. Ram Pendyala, Mr. Thomas Adler, and Mr. Konstadinos Goulias, University of Texas at Austin, published in the *Transportation Research Record.* Also presented at the 90th Annual TRB Meeting.

*Pedestrian Safety under Permissive Left-Turn Signal Control*, Dr. Yi Qi and Mr. Aohan Guo, Texas Southern University, published in the *Transportation Research Record.* Also presented at the 90th Annual TRB Meeting.

*Optional Hedging of Commodity Price Risks in Highway Contracts*, Mr. Xue Zhou and Dr. Ivan Damnjanovic, Texas A&M University, published in the *Transportation Research Record.*

Continued on page 10
Designing for the Safety of Pedestrians, Cyclists, and Motorists in Urban Environments, Dr. Eric Dumbaugh and Mr. Wenhao Li, Texas A&M University, published in the Journal of the American Planning Association.

Evaluation of Effectiveness of Coordinated Signal Control on Reducing Vehicle Emissions during Peak House vs. Non-peak Hours, Mr. Fei Tao, Ms. Qinyi Shi and Dr. Lei Yu, Texas Southern University, published in the Transportation Research Record. Also presented at the 90th Annual TRB Meeting.

Meso-scale Computational Modeling of the Plastic-Damage Response of Cementitious Composites, Mr. Sun-Myung Kim, Dr. Rashid Abu Al-Rub, Texas A&M University, published in Cement and Concrete Research.

The Light-Duty-Vehicle Fleet’s Evolution: Anticipating PHEV Adoption and Greenhouse Gas Emissions Across the U.S. Fleet, Mr. Binny Paul and Dr. Kara Kockelman, University of Texas at Austin published in the Transportation Research Record. Also presented at the 90th Annual TRB Meeting.

Distribution Uniformity of Inclusions in Composites; Concept and Characterization, Mr. Ardavan Yazdanbakhsh, Dr. Zachary Grasley, Mr. Bryan Tyson and Dr. Rashid Abu Al-Rub, Texas A&M University, published in Part A: Applied Science and Manufacturing.

The Light Duty Vehicle Fleet’s Evolution: Anticipating PHEV Adoption and Greenhouse Gas Emissions across the US Fleet, Mr. Binny Paul, Dr. Kara Kockelman, Mr. Sashank Musti, University of Texas at Austin, published in the Transportation Research Record. Also presented at the 90th Annual TRB Meeting.

Analysis of Crash Data Using Quantile Regression for Counts, Mr. Hai Wu, Mr. Lu Gao and Dr. Zhanmin Zhang, University of Texas at Austin, published in the TRB Proceedings. Also presented at the 90th Annual TRB Meeting.

Computational Applications of a Coupled Plasticity-Damage Constitutive Model for Simulating Plain Concrete Fracture, Dr. Rashid Abu Al-Rub, and Mr. Sun-Myung Kim, Texas A&M University, published in Engineering Fracture Mechanics.

Distribution of Carbon Nanofibers and Nanotubes in Cementitious Composites, Mr. Ardavan Yazdanbakhsh, Dr. Zachary Grasley, Mr. Bryan Tyson and Dr. Rashid Abu Al-Rub, Texas A&M University, published in the Transportation Research Record.

Finite Element Simulation of Single Carbon Nanotube Pullouts from Cementitious Nanocomposite Materials Using a Plasticity-Damage and Cohesive Zone Models, Dr. Rashid Abu Al Rub, Mr. Sun-Myung Kim, Texas A&M University, published in the 16th US National Congress of Theoretical and Applied Mechanics.

Quantitative Measurements of the Dispersion of Nanoparticles and Nanofilaments in Composites, Mr. Bryan Tyson, Dr. Rashid Abu Al-Rub, Mr. Ardavan Yazdanbakhsh and Dr. Zachary Grasley, Texas A&M University, published in Composites Part B: Engineering.

An Augmented Lagrangian Decomposition Approach for Infrastructure Maintenance and Rehabilitation Decisions under Budget Uncertainty, Mr. Lu Gao, Mr. Runhua Guo, and Dr. Zhanmin Zhang, University of Texas at Austin, published in the TRB Proceedings. Also presented at the 90th Annual TRB Meeting.

Carbon Nanotubes and Carbon Nanofibers for Enhancing the Mechanical Properties of Nanocomposite Cementitious Materials, Mr. Bryan Tyson, Dr. Rashid Abu Al-Rub, Mr. Ardavan Yazdanbakhsh and Dr. Zachary Grasley, Texas A&M University, published in ASCE Journal of Materials in Civil Engineering.
Presentations
(Recent Selected Presentations Based on SWUTC Research)

Dr. Talia McCray of the University of Texas at Austin presented *Analyzing the Activity Spaces of Low-Income Teenagers: How do They Perceive the Spaces Where Activities are Carried Out?* to the 41st Annual Meeting of the Urban Affairs Association, New Orleans, LA, March 16-19, 2010.

Mr. Donovan Johnson, Mr. Rob Harrison, Ms. Lisa Loftus-Otway, Mr. Nathan Hutson and Mr. Dan Seedah of the University of Texas at Austin presented *Mega-Regions: A Freight Perspective* to the Transportation Research Forum Annual Meeting in Long Beach, California, March 10-12, 2011.

Dr. Eyad Masad and Dr. Emad Kassem of Texas &M University presented *Prediction of Asphalt Pavements Skid Resistance Using Aggregate Texture and Mixture Design Data* at the Mix Expert Task Group Meeting of the Federal Highway Administration, Phoenix, AR, March 17-18, 2011.

Dr. Jeff Borowiec of the Texas Transportation Institute presented *Airport Centric Economic Development and Marketing Initiative* to the DFW International Airport staff, Houston Airport System staff and members of the Governor’s Economic Development and Tourism Staff, Dallas, TX, March, 2011.

Dr. Mark Burris of Texas A&M University presented *Mileage-Based User Fees – Current Research and Future Opportunities* to the TTI Research Development Seminar, College Station, TX, March 3, 2011.

Mr. William Hart and Dr. Nasir Gharieb of Texas A&M University presented *Use of Micro Unmanned Aerial Vehicles in Roadside Condition Surveys* to the 1st Transportation and Development Institute (T&DI) Congress, ASCE, Chicago, IL, March 13-16, 2011.

Dr. Rashid Abu Al-Rub of Texas A&M University presented *Smaller is Stronger: Size Effects on Properties of Micro/Nano Systems* at Qatar University, Doha, Qatar, February 22, 2011.

90th Annual TRB Meeting Presentations

Mr. Wei Fan, Dr. Randy Machemehl, and Ms. Katherine Kortum, University of Texas at Austin presented *Equipment Replacement Optimization, Part 1: Solution Methodology, Statistical Data Analysis and Cost Forecasting.*

Mr. Ben Sperry, and Mr. Curtis Morgan, Texas A&M University presented *Economic Impacts of Intercity Passenger Rail Service: Evidence from Passenger Surveys.*

Dr. Amy Epps Martin, and Ms. Cindy Estakhri, Texas A&M University presented *Optimizing the Design of Permeable Friction Course Mixtures.*

Dr. Gene Hawkins, Texas A&M University presented *Field Location and Marking of No-Passing Zones due to Vertical Alignments Using the Global Positioning System.*

Dr. Ipek Sener, University of Texas at Austin presented *When, Where, How Long, and With Whom are Individuals Participating in Physically Active Recreational Episodes.*

Mr. Ben Sperry, Mr. Kristopher Ball and Dr. Curtis Morgan, Texas Transportation Institute, presented *Cluster Analysis of Intercity Rail Passengers in an Emerging High-Speed Rail Corridor.*

Mr. Robert Harrison, University of Texas at Austin presented *A Basic Toolkit for Intermodal Rail Cost Estimation.*

Dr. Jorge Prozzi, University of Texas at Austin presented *Enhancing MEPDG Rutting Performance Predictions with Hamburg Wheel Tracking Results.*
TRB Poster Presentations

Ms. Heather McNeal and Dr. Gene Hawkins from Texas A&M University: Creating Systems Engineering Approach for Manual on Uniform Traffic Control Devices

Recently Published Reports

Each of the following publications are available in PDF format at http://swutc.tamu.edu/publications.htm

Designing Fine Aggregate Mixtures to Evaluate Fatigue Crack Growth in Asphalt Mixtures, Anoosha Izadi, Arash Motamed and Amit Bhasin, University of Texas at Austin, April 2011, 56 pp. (161022-1)


The Effect of Public Transit on Social Opportunities for Ethnic Minority Populations: Case Study of Huston-Tillotson University Students, Talia M. McCray, Ana Julita Gomez Sanchez, Myung Kyung Chung, University of Texas at Austin, March 2011, 165 pp. (161024-1)

Development of Pedestrian Safety Based Warrants for Permissive Left-Turn Control, Qi Yi and Aohan Guo, Texas Southern University, December 2010, 58 pp. (169302-1)

Use of Micro Unmanned Aerial Vehicles for Roadside Condition Assessment, William Scott Hart and Nasir G. Gharaibeh, Texas A&M University, December 2010, 48 pp. (476660-00019-1)

An Assessment of Public Involvement for the 2006 Regional Transportation Coordination Planning Process in Selected Texas Cities, Gwen Goodwin and Krystal Lastrape, Texas Southern University, December 2010, 41 pp. (473700-00054-1)

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