

SWUTC News

Texas A&M University • University of Texas at Austin • Texas Southern University

From the Director

The SWUTC, one of the charter members of the UTC program, has again successfully competed for continuation as the regional UTC in Federal Region 6. As we begin the newly authorized operations under the SAFETEA-LU, our region now hosts UTCs in Oklahoma, Arkansas, Louisiana, and Texas. One of the provisions in the new guidelines requires the Regional UTC to develop its leadership responsibilities with respect to programs in other UTCs in the region. That will be a significant new item in our strategic plan, and we look forward to developing innovative relationships with these new partners.

This current year is a transitional year between the phasing out of the TEA-21 grant and the beginning of the new grant period. Soon, we will be preparing our strategic plan to engage the intellectual resources in our consortium universities (Texas A&M System, University of Texas at Austin and Texas Southern University) to enhance the previous successes in our transportation education, research, and technology transfer efforts. Increased funding opens new opportunities for us to reach more and better students, develop new curriculum potentialities, innovate new synergies among the transportation programs of the consortium members, challenge our researchers to develop new and exciting research inquiries, and provide results that add value to transportation in the state, region, and Nation.

The seasoned faculty and staff within our consortium will continue to serve as the core element of the enterprise, but we are eager to find and support new and innovative faculty members and researchers to keep the spark in the creative processes. Fortunately, Dr. Herb Richardson will continue to serve as the Chairman of our SWUTC Executive Committee. As almost everyone knows, Herb recently “stepped down” as the director of TTI, receiving emeritus titles and honors that reflect his national prominence in leadership in engineering, transportation, higher education, and research development. His continuation with the SWUTC is indeed a bonus for me, our colleagues, and our programs.

SWUTC comes to the new challenges of the SAFETEA-LU grant with a keen sense of our responsibility to develop transportation leadership throughout the region in the UTC program. We look forward to working with new partners, universities, and individuals during the next three years of the new program grant.

Dock Burke

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January 2007

Dr. Herbert H. Richardson Retires as Director

After 22 years of service to the Texas A&M University System, which included 13 years as TTI Director, **Dr. Herb Richardson** stepped down on Halloween Day, Oct. 31. Herb Richardson forged life-long friendships and earned monumental respect from the people he worked for and with throughout the Texas A&M System. During Richardson's last month on the job, heart-felt tributes dominated speeches given at several events honoring and commemorating Herb's career.

"He has totally given of himself," said Chancellor Emeritus Dr. Barry Thompson during Richardson's retirement reception Oct. 11 at the Annenberg Presidential Conference Center on the A&M campus. "In today's world of very poor ethics—in today's world of self-serving leadership—in today's world where people are so divided in this country—Herb is a peacemaker and a consensus builder. It's important to remember that there are only a few people like Herb in the world."

Fortunately, the SWUTC will continue to benefit from Dr. Richardson's leadership in his new role as Director Emeritus. He has agreed to continue to guide the SWUTC as Chairman of our Executive Committee.

Dr. Dudek Retires from TTI

Dr. Connie Dudek, research engineer in the Operations and Design Division and professor in the Department of Civil Engineering at Texas A&M University, announced his retirement from TTI in September 2006 after nearly 40 years of service in the Texas A&M University System.

During his distinguished career, Dr. Dudek served as director of the Southwest Regional University Transportation Center from 1988 thru 1991. Dr. Dudek was also the program manager, project director, principal investigator, principal researcher or study supervisor on over 30 research projects sponsored by state and federal agencies.

Over the last 15 years, the academic portion of the Texas A&M SWUTC program has been designated as an "Advanced Institute (AI)" administered by the Department of Civil Engineering and led by Dr. Dudek. Ground breaking innovations introduced by Dr. Dudek, most notably the Mentors Program and other activities, brought national recognition to the SWUTC and the Civil Engineering Department's transportation education programs.

New Member Joins SWUTC Executive Committee

Effective September 1, 2006, **Mr. Rick Collins** agreed to serve as a member on the SWUTC Executive Committee. Rick Collins, is currently director of the Research and Technology Implementation Office of the Texas Department of Transportation (TxDOT). In this capacity, he oversees and directs the development and operation of the Department's research, technology implementation, and new product evaluation programs.

He worked for a private engineering firm in Austin from 1985 to 1987. In 1987, he returned to the Department where he became the safety and programs engineer in the Traffic Operations Division. Collins served as the railroad liaison engineer from 1995 to 1997 and as the director of the Traffic Engineering Section from 1997 to 2004.

Collins represents TxDOT as a member of the American Association of State Highway and Transportation Officials (AASHTO) Research Advisory Committee and the state representative to the Transportation Research Board. He is also a member of the AASHTO Standing Committee on Research and serves on numerous National Cooperative Highway Research Program project panels.

Collins earned his bachelor's degree in civil engineering in 1981 from Texas A&M University and his master's degree in engineering from the University of Texas at Austin in 1988.



SWUTC Researcher Elected Head of National Transportation Organization

Dr. C. Michael Walton, SWUTC Executive Committee member and key researcher, was elected chairman of the American Road & Transportation Builders Association (ARTBA) at the organization's annual meeting October 1. Walton has held a variety of ARTBA leadership positions and helped develop the association's policy positions on federal transportation development issues. Walton, who holds the E.H. Cockrell Centennial Chair in Engineering at the University of Texas at Austin, is an international leader in transportation policy and engineering analysis.

SWUTC Researcher Receives International Award

University of Texas at Austin, Civil, Architectural and Environmental Engineering Associate Professor **Dr. Kara Kockelman** recently received the *2006 Geoffrey J.D. Hewings Award* from the Regional Science Association International (RSAI). The award recognizes distinguished contributions to regional science by young researchers. Kockelman's primary research interest include the statistical modeling of urban systems (including models of travel behavior, trade and location choice), the economic impacts of transport policy, crash occurrence and consequences, and transport policy-making.

New Research Highlights

This year, the SWUTC selected 35 new research studies to fund. A few of these are highlighted below.

Texas Southern University Study Focuses on Evacuation Optimization Strategies

There is a growing need for preparedness for emergency response for both man-made and natural disaster events. As dramatically demonstrated with Hurricane Rita, unexpected events such as hurricanes, terrorists' attacks or chemical leakages can generate extensive emergency evacuations of large urban areas. Efficiently managing these evacuations is the first step towards emergency response preparedness.

There are two issues on emergency responses: (1) how to ascertain when and where disasters occurs and disperses and how to rescue the victims; (2) how to plan the optimized traffic routes that people will use to evacuate the affected area. While these two issues share the same importance, this research will only focus on the later one for the optimization of evacuation strategies for large urban areas. Most of the current workable research products on evacuation plans are on a relatively small scale such as the evacuation of one to several buildings. There are no suitable analytical methodologies or realistic strategies that are suitable for a major trip generators such as evacuation of the Texas Medical Center in Houston, where more than 40 medical institutions, including two medical

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SWUTC Joins Pooled Fund Study

In December, the SWUTC entered into an agreement to contribute financial support to the Deer-Vehicle Crash Information and Research Center, a pooled fund, multi-state effort focused on the national deer-vehicle collision (DVC) problem under the direction of **Dr. Keith Knapp** of Texas A&M University. This center provides a national focal point to critically evaluate past and current DVC work and to collect, summarize and disseminate DVC related data and study results. So that an effective and application oriented DVC related research strategy can be developed. This Center allows for a more effective use the limited resources available to address this complex problem.

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schools, four schools of nursing, 13 renowned hospitals and two specialty institutions, reside together in a relative small area with large quantities of chemical and biochemical materials in use and storage.

This research, being conducted by **Dr. Fengziang Qiao** of Texas Southern University intends to maximize the use of interdisciplinary knowledge from various subjects such as simulation technologies, computer science, traffic flow theory, highway operation methodologies, conventional and intelligent transportation systems to develop, calibrate and test a computer simulation-based analytical algorithm that optimizes evacuation strategies using the Texas Medical Center for a test bed.

SWUTC Researcher Simulates Land Use Impacts of Highway Development in the Texas Triangle

The Texas Triangle mega-region is spatially delineated by the metropolitan areas of Dallas/Fort Worth, Austin/San Antonio, and Houston, with a total land size of nearly 60,000 square miles and a total of 15 million inhabitants in Year 2000. The region is expected to grow, as its past suggests, by an additional 10 million people over the next 40+ years. Amid the vast population increase, how will the region expand and develop? Choices in transportation technologies (highway, rail, water, and air) and decisions on the locations and alignments of transportation infrastructure will have a strong influence, which in turn will have profound implications in terms of demand for land, water, energy, and other natural resources.



SWUTC Researcher Attends National Symposium

Dr. Chandra Bhat of the University of Texas at Austin was among 105 engineers chosen to participate in the National Academy of Engineering's 2006 U.S. Frontiers of Engineering symposium for accomplished young engineers on September 21-31 at the Ford Motor Company in Dearborn, Michigan.

This symposium brings together emerging engineering leaders between the ages 30 and 45 from all sectors to discuss pioneering work and cutting-edge research. The symposium covered topics that include the rise of intelligent software systems and machines, the interface between nano- and bio-materials, personal mobility for the 21st century and supply chain management. The goal of the annual meetings is to facilitate collaboration between outstanding engineers, transfer new techniques and establish professional networks.

To better understand the influences and implications of the anticipated growth, **Dr. Ming Zhang** of the University of Texas at Austin is studying the simulated interactions between highway expansions and land use/land cover changes in the Triangle with use of satellite images and historical records of highway development. Findings from the study will be valuable to inform the state and local governments on decisions of transportation investments.



SWUTC Researchers Hit the Road

Mr. Shawn Turner of Texas A&M University attended the 14th International Conference on Bicycling and Walking held September 5-8, 2006 in Madison, Wisconsin where he promoted the capabilities of his SWUTC developed pedestrian detector and safety test bed.

Dr. Jorge Prozzi of the University of Texas at Austin presented *Potential Implications of NAFTA Truck Traffic: for Better or for Worse?*, to the Texas Border Partnership Working Group in Austin, TX, September 7, 2006.

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Mr. Rob Harrison of the University of Texas at Austin presented *Freight Performance Measures for the State of Texas* to the Texas Border Partnership Working Group in Austin, TX, September 7, 2006.

Dr. Bill Eisele of Texas A&M University presented *Evaluating the Relative Safety of Access Management Treatments in Micro-Simulation* at the 10th National Conference on Transportation Planning for Small and Medium-sized Communities, Nashville, TN, September 13-15, 2006.

Dr. Byoung-Suk Kweon of Texas A&M University presented *Children in the School Walk Zone: Promoting Walking and Biking to School through Enhanced Transportation Infrastructure and Planning* to the Association of Collegiate Schools of Planning (ACSP) Annual Conference in Fort Worth, TX, September 2006.

Dr. Yunlong Zhang of Texas A&M University presented *A Derivative-free Nonlinear Algorithm for Speed Estimation Using Data from Single Loop Detectors* at the 2006 IEEE ITS Conference in Toronto, Canada September 18, 2006.

Dr. Joe Zietsman of Texas A&M University presented *Truck Idling Reduction* at the Air Quality 2006: Energy Leadership and Emissions Reduction Conference in Houston, TX October 15, 2006.

Dr. Fengziang Qiao of Texas Southern University attended the Research Opportunities in Radio Frequency Identification (RFID) Transportation Applications Conference organized by the Transportation Research Board in The National Academies Keck Center on October 17-18, 2006 in Washington D.C.

Dr. Leigh Boske of the University of Texas at Austin presented *Shifting Pacific-Rim Trade Lanes* at the Keynote Speaker Series, Center for Western Hemispheric Trade at Texas A&M International University in Laredo, TX, October, 18, 2006.

Dr. Byoung-Suk Kweon of Texas A&M University presented *Children's Commute to School: Environmental and Psycho-Social Impacts* to the XIV International Conference of the Society for Human Ecology in Bar Harbor, ME, October 18-21, 2006.

Mr. Khosro Godazi of Texas Southern University presented findings of the National Summer Transportation Institute database to FHWA's Civil Rights staff in Washington, D.C., in October 2006.

Dr. Byoung-Suk Kweon of Texas A&M University presented *Walking and Biking to School: Identifying Environmental Factors that Foster Walking and Biking* to the 73rd Mid-Year Meeting of the Transportation Board Committee in Austin, TX, November 2006.

Dr. Ming Zhang of the University of Texas at Austin, presented *Can Transit-Oriented Development (TOD) Reduce Austin's Traffic Congestion?* at the 47th Annual Conference of the Association of Collegiate Schools of Planning in Fort Worth, TX, November 9-12, 2006.

Dr. Carol Lewis of Texas Southern University and three of her graduate students attended the Safety Conference sponsored by the Houston Galveston Area Council on November 15, 2006.

Mr. Juan Villa of Texas A&M University attended the North American Works conference in Kansas City, MO on November 30-December 1, 2006 where he presented study findings from his SWUTC project North American Transportation Corridors.

Dr. Lei Yu of Texas Southern University attended the workshop Evaluation of Traffic Congestions, sponsored by Beijing Transportation Research Center on December 18-20, 2006, in Beijing China where he presented findings from his SWUTC work.

TAMU Education Program Has Change of Leadership

On September 1, **Dr. Gene Hawkins**, Associate Professor of Civil Engineering at Texas A&M University, assumed leadership of the TAMU educational program in the SWUTC. Now known as the Transportation Scholars Program, this effort includes graduate and undergraduate initiatives in transportation materials and transportation systems engineering in the TAMU Civil Engineering Department.

Management of the TSP has also been modified to include an Executive Committee, a faculty derived group that will provide guidance to the program. This committee will be composed of Dr. Hawkins and a representative from the Transportation Engineering Systems program, and a representative of the Transportation Materials program.

Important Upcoming Deadlines

University of Texas at Austin Undergraduate Summer Internship in Transportation (USIT 2007)

Deadline for submitting an application to participate in the summer 2007 program is March 1, 2007. This program is an intense 11-week program that provides unique insight into transportation engineering education and a possible career in the field. Financial support is provided. Please visit <http://swutc.tamu.edu/utaeducation.htm> for more information.

Texas A&M University Undergraduate Transportation Scholars Program (UTSP 2007)

Deadline to submit an application for the summer 2007 program is February 23, 2007. This program is a 10-week program designed to introduce transportation to upper-level engineering students and provide them with a research/work experience that will help them get a head start on their careers. Financial support is provided. Please visit <http://swutc.tamu.edu/tamu-education.htm> for more information.

Where Are They Now?

Congratulations to the recent graduates of the SWUTC Education Program who have joined the transportation workforce.

University of Texas at Austin Graduates

Michelle Bina - Engineer for Lassiter Transportation Group

Mike Schofield - Engineer for WHM Engineering Consultants

Michael Shenoda - Professor at California State Polytechnic University at Pomona

Nicholas Warrenchuk - Engineer for WHM Engineering Consultants

Texas Southern University Graduates

Kenneth Brown - Researcher for Texas Transportation Institute

Amma Cobbinah - Planner for Houston METRO

TSU (continued)

Steve Granson - Planner for TxDOT

Jeff Mallory - Analyst for WTS Global Logistics Company

Michael Morris - Researcher for FHWA

Keith Taylor - Planner for Burlington Northern Santa Fe

Texas A&M University Graduates

Marshall Cheek - Engineer-in-Training for Lockwood, Andrews & Newnam

Jeremy Clark - Engineering Research Associate for the Texas Transportation Institute

Erin Eurek - Analyst for Kimley-Horn & Associates

Matthew Sneed - Analyst for Kimley-Horn & Associates

SWUTC Education Efforts Highlighted in *Texas Transportation Researcher*



In the Fall 2006 issue of the *Texas Transportation Researcher* published by the Texas Transportation Institute, several SWUTC educational programs were prominently mentioned as leading initiatives aiding in the development of the transportation workforce of tomorrow. Among the SWUTC successes highlighted were the SWUTC graduate and undergraduate programs, which play a valuable role in training and mentoring students in the university setting. As emphasis to this, three former SWUTC student profiles were presented illustrating the bona fide payoff from the SWUTC education program investment in preparing students for their future careers. Additionally, the Texas Summer Transportation Institute program was highlighted, along with two other SWUTC funded efforts, the You Go Girl! program and the Texas Summer Aviation Academy. All three of these programs are geared to the pre-college level student with the intent to spark their interest in a career in transportation.

The *Texas Transportation Researcher* is distributed to over 4,000 transportation industry professionals worldwide. A PDF of this document is available on-line at http://tti.tamu.edu/publications/researcher/v42n4/42_4.pdf.

SWUTC Website Gets Face Lift

In November, the new SWUTC website was launched. New to our site is an enhanced list of new and on-going research along with expanded information on our educational programs.

Please visit it at <http://swutc.tamu.edu/index.htm>

Recently Published Reports

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

Estimation of Travelers' Values of Time Using a Stated-Preference Survey with Variable Pricing Options, Mark Burris and Sunil Patil, Texas A&M University, December 2006, 75 pp. (SWUTC Report #167766-1)

Traffic Engineering Applications of Driving Simulation, Susan T. Chrysler, Alicia A. Williams, and Eun Sug Park, Texas A&M University, December 2006, 141 pp. (SWUTC Report #167142-1)

The Texas Rural Summer Transportation Institute, Debbie Jasek and Hector Estrada, Texas A&M University, December 2006, 78 pp. (SWUTC Report #167143-1)

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Robust Design and Evaluation of Transportation Networks with Equilibrium Under Demand Uncertainty, Jennifer Duthie and S. Travis Waller, University of Texas at Austin, October 2006, 57 pp. (SWUTC Report #167556-1)

Development of a Phase-by-Phase, Arrival-Based, Delay-Optimized Adaptive Traffic Signal Control Methodology with Metaheuristic Search, Michael Shenoda and Randy Machemehl, University of Texas at Austin, October 2006, 102 pp. (SWUTC Report #167863-1)

Importance of Short Line Railroads to Texas, Jeffery E. Warner and Manuel Solari Terra, Texas A&M University, October 2006, 70 pp. (SWUTC Report #473700-00027-1)

The Impact of Demographics, Built Environment Attributes, Vehicle Characteristics, and Gasoline Prices on Household Vehicle Holdings and Use, Sudeshna Sen and Chandra R. Bhat, University of Texas at Austin, September 2006, 56 pp. (SWUTC Report #167550-1)

A Comprehensive Analysis of Built Environment Characteristics on Household Residential Choice and Auto Ownership Levels, Chandra R. Bhat and Jessica Y. Guo, University of Texas at Austin, September 2006, 58 pp. (SWUTC Report #167860-1)

Enhanced Freight Sketch Planning Tool for Assessing Multimodal Investment Strategies, Jordan Botticello and C. Michael Walton, University of Texas at Austin, September 2006, 91 pp. (SWUTC Report #167868-1)

An Investigation on the Environmental Benefits of a Variable Speed Control Strategy, Zhong Wang and C. Michael Walton, University of Texas at Austin, September 2006, 58 pp. (SWUTC Report #473700-00072-1)

Children and Transportation: Identifying Environments that Foster Walking and Biking to School, Byoung-Suk Kweon, Woo-Hwa Shin, Robert Folzenlogen and Jun-Hyun Kim, Texas A&M University, September 2006, 37 pp. (SWUTC Report #473700-00031-1)

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