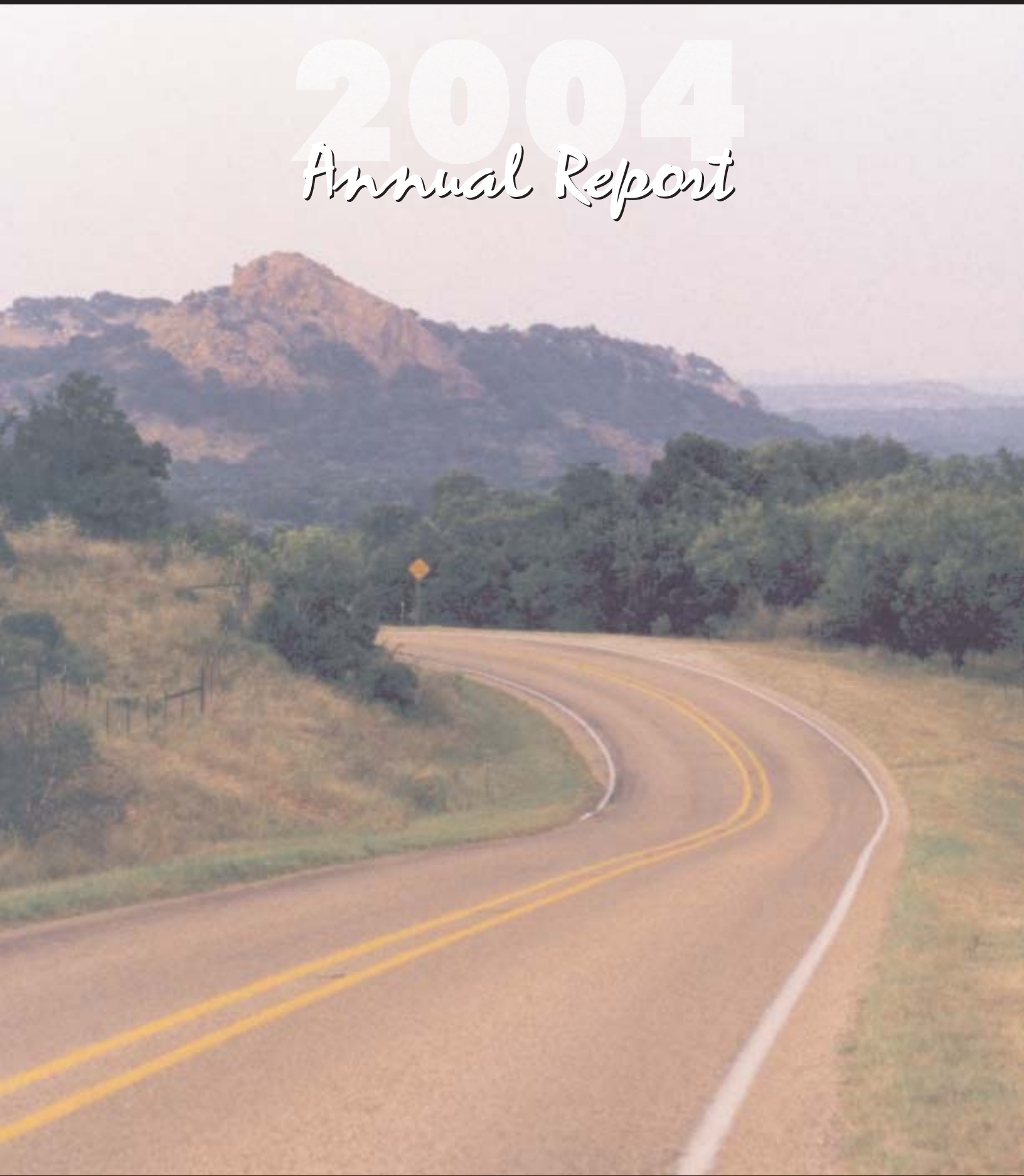
Southwest Region University Transportation Center

2004 Annual Report



Transportation Solutions to Enhance Prosperity and the Quality of Life

Credits

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Southwest Region University Transportation Center
Annual Report 2004

Transportation Solutions to Enhance Prosperity and the Quality of Life

Consortium Members:
Texas A&M University
University of Texas at Austin
Texas Southern University



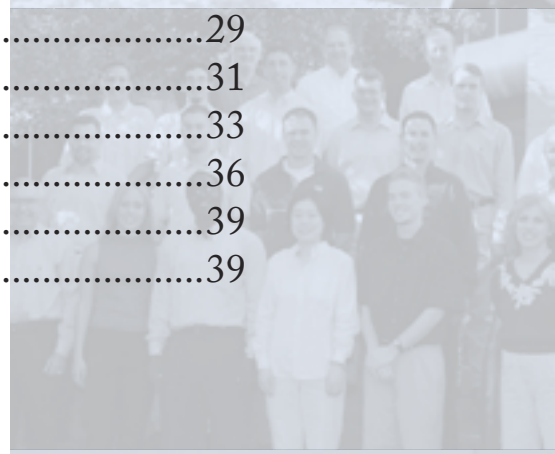
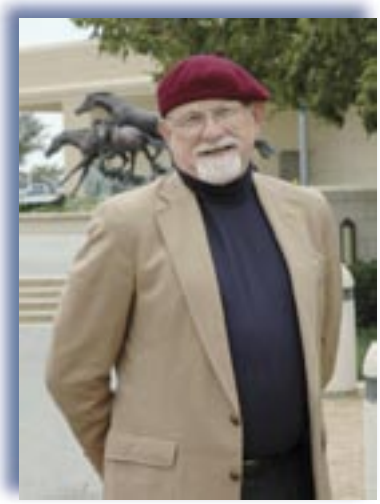


TABLE OF CONTENTS

Message from the Director



The SWUTC has always been fortunate to have high quality professionals in its education, research, and technology transfer programs. In previous years of this *Annual Report*, I have variously emphasized program elements, results, and future plans. In this **Director's Message**, I would like say a few words about some of the people of the SWUTC who have made significant contributions to the success of the Center. This group includes friends and colleagues, both old and recent, whose support and commitment to excellence have made my service as director of the SWUTC the highlight appointment of my career.

First among these individuals is **Ms. Barbara Lorenz**. Barbara is a constant, unfailing source of energy, dedication, and high-quality results in administering the complex relationships of the Center. While she readily helps us all – researchers, students, professors – Barbara is truly indispensable in the management of the budgets, reports, sponsor relations, and consortium harmony within the SWUTC. Colleagues in other UTCs have frequently asked me what is the most important item in my list of ingredients for a successful center. Invariably, my reply is: "That's easy … Barbara Lorenz."

There have been only two Chairmen of our SWUTC Executive Committee since its establishment in 1988. **Herbert H. Richardson** currently provides insightful intellectual leadership and challenging encouragement for us to do more and better with our resource base, half of which Herb fights to secure for us during the biennial budgetary proceedings of the Texas Legislature. **William J. Harris** preceded Herb in the chairman's role, and Bill deserves much of the credit for establishing the strategic vision for the successful operation our Center. Last year, we established the *William J. Harris Award* for the outstanding doctoral student in the SWUTC… a tribute to the prestige and inspiration that Bill Harris provided during his tenure here.

Some of the founding members of the SWUTC's Executive Committee continue to serve as leaders and mentors to all of us in the consortium. For me, the presence of these three friends and colleagues has provided a solid foundation from Day 1 – **Sadler Bridges, Naomi Ledé,** and **Michael Walton**. Sadler has been variously my boss, co-worker and adviser since I started at TTI "back in the day" and continues to provide valuable guidance and timely insights about the SWUTC's dynamics. **Mike Walton's** service has brought international perspectives and prestige to our programs, and he currently serves "double duty", as he is also Director of the SWUTC's *Advanced Institute* at UT-Austin. And **Naomi Ledé**, having retired at TSU, has since returned to the SWUTC as a member of the TTI research staff… a position from which she continues to make significant and lasting contributions to our Center, particularly in the pre-college outreach programs.

As members of the Executive Committee, **Dennis Christiansen, Carol Lewis, Zhanmin Zhang, Lei Yu,** and **Rob Harrison** have each contributed unique ideas and efforts to the SWUTC. Importantly, Dennis has provided invaluable and vigorous leadership that has been instrumental in developing a cooperative alliance of UTCs with CUTC to pursue federal legislative strategies. He was recently honored with the *Regents Fellow Service Award*, the highest honor given by the TAMU System Board of Regents. **Carol Lewis**, serving as the Director of TSU's *Center for Transportation Training and Research*, provides the administrative and intellectual focus for the SWUTC's efforts at TSU in addition to her own significant responsibilities in research and teaching there. Not solely an academician, she was recently named as the advisor to the Mayor of Houston's *Office on Mobility*. At UT-Austin, **Zhanmin Zhang's** presence as a teacher and researcher has materially strengthened the SWUTC's educational and research programs. An increasing number of UT students are benefiting from the mentoring that Zhanmin incorporates into his classrooms and laboratories. **Lei Yu**, Chairman of TSU's Department of Transportation Studies, is rapidly becoming a nationally known researcher in traffic engineering and modeling. A conscientious mentor, Lei includes many of his students and colleagues in his highly productive researches. Another

fellow economist and friend, **Rob Harrison**, continued this year at UT-Austin to serve as a primary source of intellectual leadership and ideas in a broad range of transportation issues within the purview of SWUTC's mission. Rob's efforts in and understanding of international trade and transportation, as well as intermodal and multimodal freight systems, have made him a valuable spokesman from SWUTC on these and related matters nationwide.

Within the Office of the Director of the SWUTC, we are fortunate to have several high-performance professionals at all three member universities. At TSU, **Khosro Godazi's** work has become a national example of how to produce a high-quality *Summer Transportation Institute* program for pre-college students. At TTI, **Tim Lomax**, who is a nationally recognized research authority on urban mobility measurement and analysis, provides excellent leadership to the research program; and **Connie Dudek** has had years of success as the Director of SWUTC's *Advanced Institute* at TAMU. In addition to his duties as Director of UT-Austin's *Center for Transportation Research*, **Randy Machemehl** provides the focus on the SWUTC research program on the UT-Austin campus and readily "pitches up" when I need some special help there.

In this brief overview, I have tried to indicate in the discussion above that we in the SWUTC benefit from the wisdom and efforts of so many outstanding colleagues. At its most basic description, our success is created by the classroom professors, researchers, and laboratory leaders who provide the frontline engagement to deliver the SWUTC's programs in education, research, and technology transfer. With such a complement of professionalism, it's little wonder that the SWUTC has achieved some significant milestones in its cumulative history (1988-2004).

Some of these results are highlighted in the following summary measurements.

Research Program Outputs: 433 projects have been funded; involvement of 124 individual Principal Investigators; and 1,179 students have contributed to SWUTC research work.

Educational Program Highlights: 327 individual students have received stipends; and 284 have graduated. Of those that have graduated 238 (84%) have been employed in the transportation sector with 5% in advanced degree programs, 20% with government agencies, 60% with industry employment and 15% teaching and/or conducting transportation research.

Technology Transfer Results: 250 final technical reports published; 703 papers presented; 256 papers published; SWUTC sponsored conferences and workshops; and support of the popular SWUTC website.

Measured by its macrotrends, SWUTC has created some notable successes

- *Increased quality and quantity of students entering transportation curricula.*
- *Graduated and placed skilled professionals in transportation agencies, companies, and faculties.*
- *Developed research solutions that have supported transportation policies and programs.*
- *Implemented pilot studies in transit, highway, rail and intermodal to increase the resource base of other transportation programs.*

Into the future…

As Director, I look forward to working another year with these SWUTC colleagues in this exciting enterprise. I am dedicated to the SWUTC's' continuation as an active member of a reauthorized UTC program. In so doing, we will continue to seek out the students, develop the programs, and create the educational/research initiatives to produce the ideas and leaders to guide our Nation's transportation sector.

Dock Burke
Director

Theme and Vision

The SWUTC theme

Transportation Solutions to Enhance Prosperity and the Quality of Life

clearly challenges SWUTC participants to expand their capacities to the fullest to produce education, research, and service solutions to transportation issues facing the people of the Southwest and the U.S. Our theme encompasses four strategic thrusts - support of economic growth and trade; enhancement of mobility, accessibility and efficiency; promotion of safety and safe environments; and development of the transportation workforce.

To achieve maximum value from the SWUTC in implementing our grant, the SWUTC pursues the following vision to become

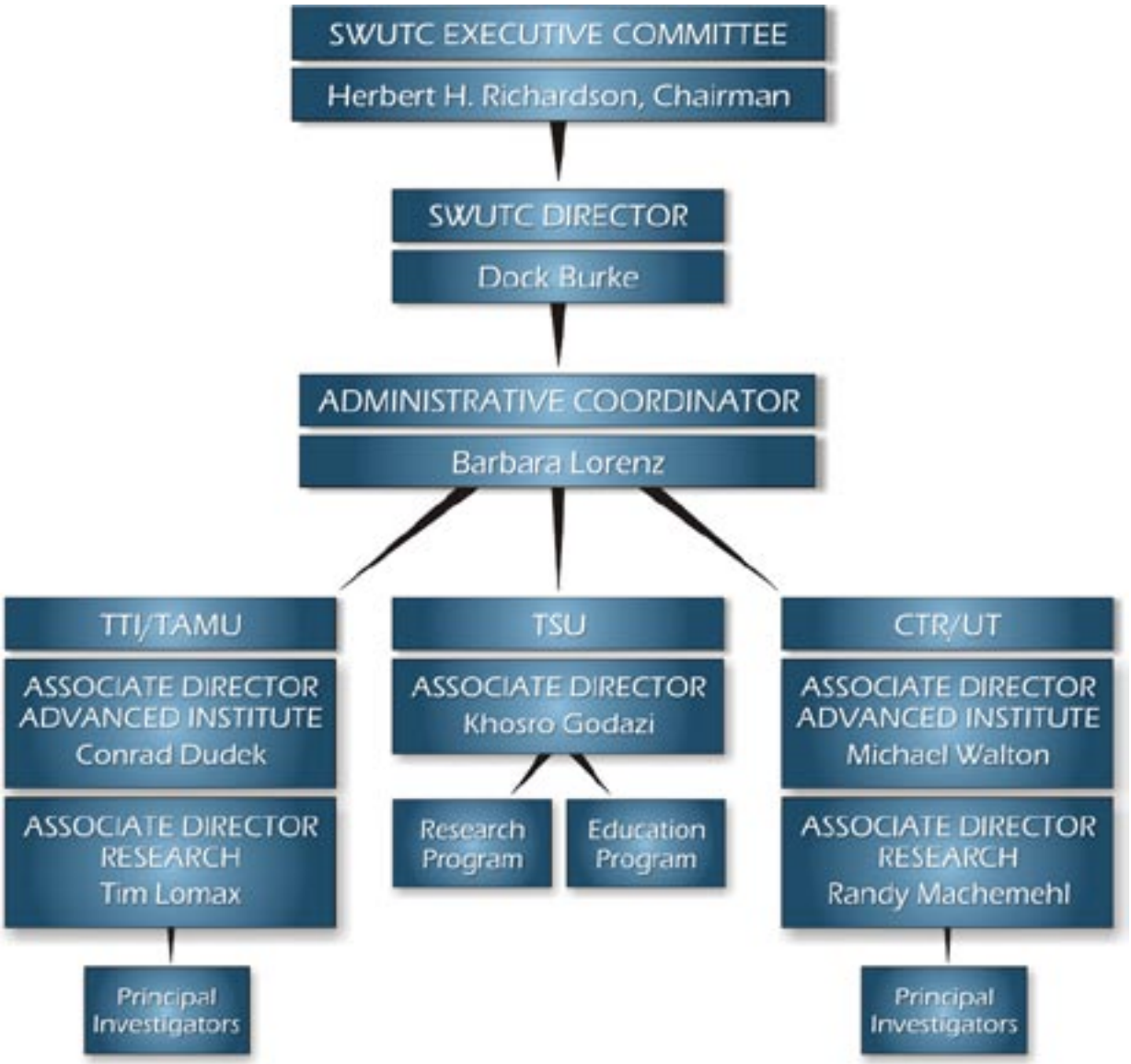
an Internationally recognized center for excellence providing knowledge, diverse leaders, and innovative solutions for the transportation challenges of the 21st Century.

This ambitious vision calls upon us, over the expected lifetime of this UTC grant, to deliver premier research programs in transportation systems, transportation education and professional workforce development, and transportation technology transfer and service. We will pursue this vision by building on the significant resource base already in place within the transportation programs of the consortium universities, adding new partnerships and alliances with other universities and transportation entities in the region, and keeping the three program elements (research, education, and technology transfer) focused upon our theme.

Management Structure

The SWUTC Executive Committee oversees the SWUTC activities by establishing budget priorities; determining program content by selecting research projects and choosing those educational programs to be undertaken; and by reviewing the administrative affairs of the Center.

The SWUTC Director plans, executes, and reports the approved activities of the Center. The Director is assisted by an Administrative Coordinator and five Associate Directors - two at TAMU/TTI, two at UT-Austin/CTR, and one at TSU/CTTR. These Associate Directors are each responsible for administering that portion of SWUTC's activities in their charge.



Key Center Personnel

SWUTC Executive Committee

Dr. Herbert H. Richardson, chairman

Dr. Richardson is currently Director of the Texas Transportation Institute and Associate Vice Chancellor for Engineering in the Texas A&M University System, and also holds appointments as Regents Professor and Distinguished Professor of Engineering in Texas A&M University. He is a member of the National Academy of Engineering, Honorary Member of the American Society of Mechanical Engineers, and Fellow of the American Association for the Advancement of Science. He served as the first Chief Scientist of the U.S. Department of Transportation, as Chairman of the Transportation Research Board, and has led or participated in numerous TRB panels, study committees, and review boards. He served for 6 years on the Governing Board of the National Research Council and the Council of the National Academy of Engineering. Most recently he received the Lamme Medal of the American Association for Engineering Education for leadership in engineering education.

Mr. G. Sadler Bridges, member

Mr. Bridges has more than forty years of experience in transportation research. His research has included urban transportation, bus operations, high occupancy vehicles, and fixed guide-way transportation. Mr. Bridges managed the 1970 and the 1972 *National Transportation Studies* for Texas, directing the efforts of several state agencies and twenty-three urbanized areas in Texas, and was its principal author. He was a member of the Mobility 2000 Group on the application of advanced technologies to vehicles and highways. The technologies include advanced traffic management techniques, onboard navigation systems, and advanced vehicle control systems. He co-edited the Mobility 2000 reports of the meetings in San Antonio in 1989 and Dallas in 1990. He was a founding member of ITS America, a designated advisory commission to the U.S. DOT on ITS issues. He has served on the Membership Committee, the Coordinating Council, the Planning Committee, and as chair of the Institutional Issues Committee. Coincident with Mr. Bridges' appointment to an administrative position his primary attention turned from technical research to concentrate on management. During his tenure as Interim Director, TTI was designated as one of three Research Centers of Excellence in ITS. One of his continuing interests is to expand TTI into new technologies and new disciplines of transportation. Presently, Mr. Bridges serves on TTI's Intellectual Properties Committee and is responsible for policy and oversight of the patents and licensing procedures for the Institute and its researchers.

Dr. Dennis Christiansen, member

Dr. Christiansen is presently Deputy Director of the Texas Transportation Institute. Dr. Christiansen has been a member of the staff of the Texas Transportation Institute for over 30 years. Projects directed by Dr. Christiansen have addressed areas such as: the role of rail transit in Texas cities; roadway operations and design; transportation and energy relationships; the design and operation of bus transfer centers and park-and-ride lots; the role of intercity rail passenger service in Texas; the potential role for a system of strategic arterial streets; and urban goods movement. In addition to this research, Dr. Christiansen has become recognized as an international expert in the planning, design, operation and evaluation of preferential facilities for high-occupancy vehicles.
In 1979 he received the Transportation Research Board's Fred Burgraff Award. The International Insti-

tute of Transportation Engineers awarded him their Technical Paper Award in 1984 and the Technical council Award in 1988. The Texas Section of the Institute of Transportation Engineers named him its Transportation Engineer of the Year in 1989. He is a past president of the International Institute of Transportation Engineers and is currently one of the 15-member Board of Direction for IITE. Dr. Christiansen is immediate past president of the Research and Education Division of the American Road and Transportation Builders Association and currently serves on ARTBA's Board of Directors. He is served as President of the Council of University Transportation Centers (CUTC) in 2002 and is currently a member of the CUTC board.

Mr. Robert Harrison, member

Mr. Harrison is a Senior Research Scientist and Deputy Director of the Center for Transportation Research at the University of Texas at Austin. He has worked in the area of transportation economics and planning for over 30 years and has published extensively in the area of economic impact studies, trucking issues, cost benefit analysis and transport system planning. Recently, his work has focused on Texas-Mexico border trade issues and inland ports (which was started with seed money from the SWUTC), with both studies resulting in Texas Department of Transportation (TxDOT) Top Innovation Awards. In addition, he has studied NAFTA trade corridors and the major markets served by the Texas gulf ports. He has written over 40 research reports and published over 30 peer reviewed technical papers, made presentations to senior U.S. Department of Transportation (USDOT) staff, and has given testimony at a number of Texas Senate hearings.

Prior to joining the Center for Transportation Research in 1987, Mr. Harrison worked first as an academic in the United Kingdom, then as an economist for the United Nations, and finally as a consultant to the World Bank. During the latter period, he co-authored Vehicle Operating Costs: Evidence from Developing Countries, published by Johns Hopkins Press and contributed to a number of World Bank transportation sector reviews in Latin America, Africa, and the Russian federation.

Mr. Harrison is active within the Transportation Board (TRB). He is Chair of the Intermodal Freight Terminal Design and Operations committee, and a member of the committees on Motor Vehicle Size and Weight, International Trade and Transportation and Agricultural Transportation. In May 2004, he chaired a TRB - Bureau of Transportation Statistics workshop on commodity data and transportation planning. He is a past president of the Transportation Research Forum (TRF) and currently serves as an associate editor of the TRF Journal.

Dr. Naomi Ledé, member

Dr. Ledé is a Senior Research Scientist at the Texas Transportation Institute. Upon her retirement from Texas Southern University during the 1996-97 academic year, the University bestowed upon her the title, Executive Director (Emeritus) of the Center for Transportation Training and Research at Texas Southern University. She retired from her tenured position as Chairperson of the Department of Transportation Studies and Distinguished Professor of Transportation after having served in several administrative positions, including Associate Dean, School of Public Affairs, Vice President for Institutional Advancement and Director of the Center for Transportation Training and Research.

Dr. Ledé is a national and international scholar in transportation planning and management. She is the author of 10 books and more than 300 research studies, articles and professional papers on urban planning, community development, education, and transportation issues and problems. Her achievements involve working with the Texas Transportation Institute in a series of urban initiatives, including the

development of innovative programs for elementary, secondary, pre-college and college students. These initiatives are designed to increase the number and quality of individuals entering transportation careers. In recognition of her outstanding contributions to the field of transportation science, Dr. Ledé has been the recipient of numerous awards including the Transit Research of the Century Award awarded in 1999 by the Greater Houston Chapter of the Conference of Minority Transportation Officials (COMTO); the Outstanding Leader of the Century, awarded in 2000 by the Metropolitan Transit Authority of Houston (METRO) and the Sharon D. Banks Award for Innovative Leadership in Transportation presented by the National Academy of Sciences, Transportation Research Board in 2002.

Dr. Ledé served on the Board of Directors of the Metropolitan Transit Authority of Harris County (Houston METRO) for six years, 1984-1990. She served as Vice Chair of the Governor's Public Transportation Advisory Committee; as a member of the Technical Task Force of the National Research Council, National Academy of Science, Transportation Research Board; and a member of the Urban Affairs Association. Her community service activities have been numerous. She served on the boards of the Houston Area Urban League, the Martin Luther King Jr. Community Center, the Urban Affairs Corporation, the Young Women's Christian Association (YWCA) and the Editorial Committee of the Houston Public Library, and as President of the Common Heritage Association - an organization that provides scholarships to worthy high school students. She was appointed to the Texas Board of Protective and Regulatory Services to serve a term that ends in 2003. She serves as President of the National Alumni Association of Mary Allen College, and is a past board member of the University of Texas at Arlington Alumni Association. In November 2003, she was appointed by Governor Rick Perry to serve as the representative of Regional Transportation to the Texas Emissions Reduction Plan Advisory Board.

Dr. Carol Lewis, member

Carol A. Lewis is an Associate Professor in Transportation Studies and Director of the Center for Transportation Training and Research at Texas Southern University. Dr. Lewis received her Ph.D. in Political Science from the University Houston. Her responsibilities at TSU include educating students in fundamentals of transportation and urban transportation issues, as well as conducting operational and policy related transportation research. Since joining the Texas Southern University faculty in 1992, she has conducted research for the Texas Department of Transportation, the Southwest Region University Transportation Center, Federal Highway Administration and others. Examples of recent publications include Smart Growth in Southwest States, Impacts of Freeway Ramp Locations on Land Use and Development, and Socio-economic and Land Value Effects of Elevated and Depressed Freeways. Lewis also assisted with the citizen involvement portions of Major Investment Studies for the Metropolitan Transit Authority (Houston) and TxDOT.

Dr. Lewis was recently appointed to the Board of Directors of the Metropolitan Transit Authority of Harris County by Mayor Lee P. Brown. In January, 2004, she was appointed by Houston Mayor Bill White to serve as advisor to the Mayor's Office on Mobility. She also chairs the Technical Advisory Council for the Metropolitan Planning Organization and serves on the Technical Advisory Panel for TxDOT. She is a member of a number of professional organizations including the American Red Cross Transportation Advisory Committee. Since becoming CTTR's Director, Dr. Lewis has received two outstanding research awards. The first was from the Austin Metropolitan Business Council and the second from the Conference of Minority Transportation Officials.

Dr. Laurence Rilett, member

Dr. Rilett is the E.B. Snead II Associate Professor in the Department of Civil Engineering at Texas A&M University, and an Associate Research Engineer at the Texas Transportation Institute. He received his B.A.Sc. degree (1987) and his M.A.Sc. degree (1988) from the University of Waterloo and his Ph.D. degree (1992) from Queen's University. He has held academic positions as an Assistant Professor (1992-1995) and an Associate Professor (1995) at the University of Alberta. In the past 12 years he has taught seven different undergraduate courses and four different graduate courses that cover a variety of topic areas including statistics, risk analysis, and transportation planning. He has served as chair on 6 Ph.D. dissertation committees and 17 Masters committees and is currently supervising 8 Ph.D. students and 6 Masters students. In addition, he has authored or co-authored 32 refereed journal papers and 40 conference papers that were based on his research.

Dr. Rilett has been a principal investigator or co-principal investigator on over 20 research projects. Dr. Rilett's field of research is in the transportation system analysis area and his specific research may be divided into two main areas: ITS applications and transportation system modeling. In May 2004, Dr. Rilett accepted a faculty appointment at the University of Nebraska-Lincoln, where he will also be the Director of the Transportation Research Center at UN-L.

Dr. C. Michael Walton, member

Dr. Walton is Professor of Civil Engineering and Ernest H. Cockrell Centennial Chair in Engineering, University of Texas at Austin. Dr. Walton is a member of the National Academy of Engineering and former Chairman of TRB. He is a founding member of the Intelligent Transportation Society (ITS) of America and currently serves as chair on the Board of Directors. Dr. Walton has received awards including the 2000 George S. Bartlett Award in recognition for outstanding contributions to highway progress. The Bartlett Award is considered to be among the highest honors in the highway transportation profession. The American Society of Civil Engineers presented him with several awards including the 1992 James Laurie Prize for contributions to the advancement of transportation engineering; the 1987 Harland Bartholomew Award for contributions to the enhancement of the civil engineer's role in urban planning and development; and the 1987 Frank M. Masters Transportation Engineering Award, for innovations in transport facility planning. The Transportation Research Board presented Dr. Walton with the 1998 W.N. Carey, Jr. Distinguished Service Award in recognition of outstanding leadership in support of transportation research. In 1995, he was named TRB's Distinguished Lecturer in recognition of the research contributions over his entire career. The American Road and Transportation Builders Association presented Dr. Walton with the 1994 S.S. Steinberg Award recognizing his outstanding contributions to transportation education. He received the 1995 Distinguished Engineering Alumnus Award from the College of Engineering at North Carolina State University. The College of Engineering at the University of Texas at Austin awarded Dr. Walton the 1996 Joe J. King Award, their highest professional award, in recognition of his outstanding leadership to the engineering profession. The Institute of Transportation Engineers has awarded him the 1996 Wilbur S. Smith Distinguished Transportation Educator Award in recognition of outstanding contributions to the transportation profession by relating academic studies to the actual practice of transportation.

Dr. Lei Yu, member

Lei Yu is Professor and Chairman of the Transportation Studies Department at Texas Southern University. As a professor at Texas Southern University, he has been teaching the courses in Highway Traffic Operations, Travel Demand Forecasting & Analysis, Transportation Design & Engineering, Computer Applications in Transportation, and Quantitative Analysis in Transportation. He obtained his Ph.D. in Civil Engineering from Queen's University (Canada) in 1994. His research interests and expertise involve transportation modeling, the ITS related technologies and applications, dynamic traffic assignment and simulation, vehicle exhaust emission modeling, highway traffic control and operation strategies, travel demand forecasting models, and air quality issues in transportation. In the past years, Yu has been the Principal Investigator of more than 25 research projects that were sponsored by various agencies such as Texas Department of Transportation (TxDOT), Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Southwest Region University Transportation Center (SWUTC) program, National Institute of Standards and Technology (NIST), City of Missouri City, Harris County Improvement District #1, etc. Dr. Yu has published more than 50 research papers in scientific journals and conference proceedings, and project reports. In addition, he has served many times as the distinguished lecturer for the high-level Chinese Transportation Executives and Administrators. In September 2000, he was awarded the Cheung Kong Scholar by the Ministry of Education in China and Li Ka Shine Foundation in Hong Kong. Professionally, Dr. Yu is an active member of the Institute of Transportation Engineers (ITE), the American Society of Civil Engineers (ASCE) and the Transportation Research Board (TRB). He also holds membership on numerous committees, councils, and task forces in the regional, state, national and international organizations.

Dr. Zhanmin Zhang, member

Dr. Zhang is an Assistant Professor in Transportation Engineering at the University of Texas at Austin. He obtained his Ph.D. at the University of Texas at Austin and has significant teaching and research experience elsewhere. Dr. Zhang has been actively conducting research in the engineering and management of transportation infrastructure and the applications of advanced database and information systems to pavement management for more than 16 years here in the United States and abroad.

Dr. Zhang's research experience is characterized by a unique combination of his theoretical knowledge in pavement engineering and hands-on computer skills. He has conducted extensive research in the analysis, modeling, operation, and management of pavement and infrastructure systems, using advanced computer technologies such as Geographic Information Systems (GIS), knowledge-based systems (KBS), and relational database management systems (RDBMS).

Dr. Zhang is actively involved with several professional committees under the Transportation Research Board (TRB) and American Concrete Institute (ACI). He also serves as a member of the Technical Advisory Panel (TAP) for the Research Management Committee (RMC) 1 of the Texas Department of Transportation (TxDOT).

Office of the Director

Dock Burke, Director

Dock Burke is the Director of the Southwest University Region Transportation Center at the Texas Transportation Institute. A Senior Research Economist, he also coordinates the activities of TTI's regional divisions. In his research career at the Institute, he has served as the Study Supervisor or co-supervisor of 55 research projects, authored or co-authored 96 research reports and papers, and has made over 70 presentations on a wide variety of transportation related issues since joining TTI in 1969. He is the 1998 recipient of the *TTI/Trinity Career Achievement in Research* award. And the 2003 recipient of the *Regents Fellow Service Award* presented by the Board of Regents of the Texas A&M University System. This prestigious award honors research professionals within the Texas A&M system who have provided exemplary professional service to society that has created large and lasting benefits to Texas and beyond.

SWUTC Administrative Staff: Dock Burke and Barb Lorenz

Barbara Lorenz, Senior Administrative Coordinator

Barbara Lorenz serves as Administrative Coordinator in the SWUTC a position she has held since 1992. Ms. Lorenz oversees the daily operational activities of the Center. Ms. Lorenz, a graduate of Texas A&M University, has been employed with TTI for 26 years. She is the 2003 recipient of the *C.J. Keese Career Achievement in Administrative/Technical Support* award, which is TTI's highest award for excellence in administration.

SWUTC Associate Directors

Dr. Conrad Dudek, Associate Director - Advanced Institute, Texas A&M University

Dr. Dudek is a Professor of Civil Engineering and has taught transportation engineering courses in Civil Engineering for over 35 years. He has over 40 years experience in transportation research. He has administered civil engineering undergraduate and graduate programs in transportation engineering. He has served as Program Manager, Project Director, Principal Investigator, Principal Researcher, or Study Supervisor on over 50 research projects sponsored by state and federal agencies.

Dr. Tim Lomax, Associate Director for Transportation Research at Texas A&M University

Dr. Lomax is a Research Engineer at the Texas Transportation Institute and Manager of the Mobility Analysis Program. He is internationally known for his research to quantify urban mobility problems and communicate his results to many different audiences. He has been active in devising practical mobility solutions employing both changes to practices and improvements in design and operations. He is a professional engineer and is a member of the Transportation Research Board, Institute of Transportation Engineers and American Society of Civil Engineers.

Mr. Khosro Godazi, Associate Director for Transportation Research and Education Texas Southern University

Mr. Godazi, Associate Director for the SWUTC, has 15 years of teaching and administrative experience at Texas Southern University. He holds a BS in Civil Engineering Technology and a MS in City Planning. He is coordinator of the 2-week Texas Summer Transportation Institute that has been held in Houston, at Texas Southern University. In addition he spearheads the Transportation Studies Mentorship Program. Mr. Godazi has coordinated numerous conferences for the Center for Transportation Training and Research. Mr. Godazi has extensive experience in transportation research and has served as Principal Investigator on numerous SWUTC projects. Mr. Godazi teaches transportation students in various Transportation Software and Quantitative Statistics.

Dr. Randy Machemehl, Associate Director for Transportation Research at UT-Austin

Dr. Machemehl is the Director of the Center for Transportation Research and is the Nasser I. Al-Rashid Centennial Professor in Transportation Engineering at the University of Texas. In addition to these duties, Dr. Machemehl has distinguished himself as a researcher focusing particularly on transportation system operations and he has published over 150 papers and reports. Recently the Associate Chairman of UT's Civil Engineering department, he is also a registered professional engineer, a registered professional land surveyor and has memberships in the Institute of Transportation Engineers, the American Society of Civil Engineers, the Canadian Society for Civil Engineering, National Society of Professional Engineers and the Transportation Research Forum. He is a retired U.S. Army Reserve Corps of Engineers officer.

Dr. C. Michael Walton, Associate Director - Advanced Institute, UT-Austin

(See bio on page 11)

Education Program

The SWUTC Transportation Education Pipeline

Transportation education is an essential element in the overall process of developing a workforce with the skills and leadership qualities to guide the transportation industry of the future. The SWUTC has invested heavily in the development of human capital creating a "pipeline" process which takes in students at secondary school levels, adds high school and baccalaureate programs and culminates in graduate specialities in transportation science and engineering.

The SWUTC supports Advanced Institutes that are integrated into established degree-granting university departments at Texas A&M University and the University of Texas at Austin. Additionally, SWUTC supports the academic enrichment of a well-developed graduate transportation studies program at Texas Southern University. SWUTC seeks to enhance these programs by strengthening the multidisciplinary qualities of a body of transportation science that will prepare today's students for leadership in the emerging information-rich economy.

SWUTC Pre-College Initiative Highlights

During the first 5 years of the current UTC grant, several self-sustaining programs have been developed that take transportation concepts to public schools to attract future transportation professionals. One early example was the development of educational modules that introduce careers in transportation for students in grades K-12. These modules developed for use in the classroom are still being downloaded by educators U.S. wide via the internet at http://tti.tamu.edu/cpd/education/. Another initiative was the development of road-show promotional materials for use at career fairs to encourage students to pursue careers in transportation. The success of this program is reflected in the fact that these materials are currently being requested by educators nationwide for use at various career fairs. In August 2004, these road-show promotional materials were made available for free download on the website mentioned above. Now available on this same website is the *Transportation Career Guide* developed in 2003 by SWUTC researchers. The *Transportation Career Guide* is a tool to help increase awareness of transportation as a profession to high school students and to help students set their career goals and objectives within the area of transportation. Another important success was the promotion of transportation science at science fairs. By the establishment of transportation specific categories, transportation science is now being promoted on a continuing basis at Texas science fairs along with meteorology, physics and other sciences. Through these efforts, SWUTC researchers were able to directly contact over 4,000 Texas students at career fairs, science fairs and engineering recruiting events during the 2004 fiscal year.

The SWUTC continues to support the two week Texas Summer Transportation Institutes held annually at Paul Quinn College in Dallas, and Palo Alto College in San Antonio. The four week Houston National Summer Transportation Institute conducted at Texas

Southern University remains an award-winning program in the national STI initiative.

Each of these STI programs has the goal of creating an education and training delivery system that will: attract secondary students to and enhance their interest in careers in transportation; improve mathematics, science, communication and technology skills; and through creative partnerships, strengthen the links between the transportation sector and public/private institutions. Through the course of the program, all modes of transportation are addressed and augmented with hands-on technical activities, lectures by transportation professionals and field trips to such places as TranStar, TransGuide, Houston METRO, DART, VIA, HEB Regional Distribution Center in San Antonio, Port of Houston, Port of Corpus Christi, airport operation and maintenance facilities, and the Texas Transportation Institute research facilities.

2004 HNSTI Students at TSU

The STI program continues to be a huge success and this year the SWUTC program sponsored 63, primarily minority, 9th -12th grade students. Historically, near 90% of these participating students go on to college with a majority indicating that they are currently pursuing careers in mathematics, science, business, technology and transportation engineering.

New Pre-College Initiatives for 2004

SWUTC Implements Texas Rural Summer Transportation Institute (RSTI)

SWUTC Project #167143/P.I. Debbie Jasek

Debbie Jasek

During the summer of 2004, Debbie Jasek implemented an innovative pilot program targeting the large number of Texas students who grow up in rural or small urban centers that are at least 100 miles from a major metropolitan area. These rural students are not normally afforded the same opportunities to summer pre-college programs that are available to students in large metropolitan areas. The goal of the RSTI program was to conduct a modified Texas Summer Transportation Institute in two selected rural communities that would provide those 9th-12th grade students with an increased awareness of transportation as a profession through the use of speakers, videos and hands on activities such as field trips.

The first RSTI was held on the Texas A&M University at Kingsville campus, in south Texas, in partnership with the Civil Engineering Department at TAMUK. This two-week institute was held July 5-16, 2004 and attracted 18 students, most of whom were Hispanic. The program focused on components that highlighted the history and significance of the transportation industry. The program presented career opportunities in public and private sector transportation with an emphasis on emerging and new occupational requirements. In addition, career options in transportation design, engineering, planning and research were presented. During the two week session, students studied various modes of travel, including public transit, automobile, air-

planes, freight, rail, ports, and waterways. Advanced technology and intelligent transportation systems, including aviation and space technology were also reviewed. Field trips included a visit to TxDOT's Soils Lab, a meeting with the TxDOT engineers working on the Highway 59 expansion project, and a tour of dredging operations by the Corps of Engineers on the Texas coast. Hands on activities included making concrete and then viewing a construction concrete pour, conducting a spot speed study for the City of Kingsville and completing modules in math which included construction of a tetrahedral kite - an excellent geometry and principles of flight exercise.


Kingsville RSTI participants

The second RSTI was conducted at Weslaco in south Texas on July 19th-23rd. Nine, primarily hispanic, students attended this one week institute. The program focused on similar components as the first institute held in Kingsville. Field trips included a trip to TxDOT in Pharr where students met with the District Engineer and Field Engineers responsible for the expansion of Highway 83 along the Texas/Mexico border, a visit to the South Padre bridge reconstruction project and a trip to TAMU Kingsville to tour the Civil Engineering Department. Modules in math, statistics, space, traffic control and a review of current research at the Texas Transportation Institute were also included. The students also learned how to make concrete and constructed a tetrahedral kite. In the concluding day of the program, students also received guidance on how to apply to college and acquire information about student financial aid.

Both of these rural summer transportation institutes were huge successes. Students and parents gave very positive feedback at the end of the sessions. They expressed overwhelming gratitude that this summer program was being made available to rural high school students that traditionally have very limited opportunities for summer enrichment. Future plans are to increase both of the institutes to two week sessions as it was discovered that the one week RSTI did not allow enough time to present all of the materials the students would like to cover.

Establishment of Post-Houston National Summer Transportation Institute (NHSTI) Program at Texas Southern University

P.I.: Khosro Godazi

In 2004, the Houston National Summer Transportation Institute at Texas Southern University established a Post HNSTI program. The focus of this program is to recruit previous HNSTI students and place them in internship positions in the transportation industry. During this three month long program students are provided the opportunity to gain hands-on experience, tackle an important issue, make valuable connections within the industry, and contribute to a project or program that can make a difference.


Khosro Godazi

Transportation professionals understand that education and training are vital to the continuation of future qualified employees in the industry. They are uniquely aware of the challenges involved in getting and keeping people with the proper skills and up-to-date knowledge. Because of this, support for the Post-HNSTI program has been phenomenal. Industry support has enabled Post-HNSTI students to be placed and mentored at a wide spectrum of transportation agencies from consulting firms to governmental agencies. An example of the tremendous success of this program was illustrated this past summer when four students were placed at the Texas Department of Transportation (TxDOT) in Houston. These students were in different TxDOT locations in the Houston area and assigned to a mentor for supervision. At the conclusion of the program, these four students selected Civil Engineering as part of their career path as they continue their education at different universities.

SWUTC Summer Undergraduate Fellows Program

The SWUTC Summer Undergraduate Fellows Program at the University of Texas and Texas A&M University continues to be extremely successful in attracting a diverse group of students into the graduate programs in transportation. Each year, the Summer Undergraduate Fellows Program recruits undergraduate juniors and seniors from other universities and from diverse academic backgrounds into a summer-long program in transportation research and education as a first step towards graduate study in transportation. The students at both universities have the opportunity to work with researchers and gain exposure to many different areas of transportation research. To make field trips to various transportation agencies and attend professional meetings such as the summer meeting of TexITE. At the end of the summer term, the students make oral presentations on their research and produce a paper for publication. During the summer 2004 session, 13 undergraduate fellows participated in the program at TAMU. Seven participated in the UT-Austin program.

Summer 2004 UT-Austin Undergraduate Fellows

The Summer Fellows Program has historically achieved a near 100% retention of undergraduate students into the graduate programs of transportation engineering.

SWUTC Advanced Institute Programs

The SWUTC continues to support graduate programs at each of the three consortium member universities. The ultimate goal of the SWUTC graduate programs is to attract a highly qualified cadre of new professionals into transportation science. The Advanced Institutes at Texas A&M University and the University of Texas at Austin and the graduate program at Texas Southern University provide stipends to students to participate in classroom and sponsored research activities. In addition, the program provides increased communications skills as students make presentations, participate in debates, write proposals and reports. Students also participate in technical tours and professional meetings throughout the year.

Since the beginning of this current grant in the fall of 1999, 124 students have been supported thorough the SWUTC education programs. Of those students, 91 have since graduated with 96% entering into the field of transportation either with the government or private industry sectors, or into an academic/ teaching environment.

2004 TAMU Mentors Program Highlights

As part of the TAMU Advanced Institute program, the 14th Annual TAMU Mentors Program was conducted during the 2004 summer session. This highly successful program brings leading practitioners in the field of traffic operations, traffic management and intelligent transportation systems (ITS) together with Advanced Institute students and state department of transportation employees in a summery long learning program. This year, ten graduate students and state DOT employees participated in the program. During the program, students are able to interact directly with experts in the profession and learn first-hand about transportation challenges. They gain a knowledge of "real-world" solutions and learn to communicate effectively with top-level transportation professionals.

14th Annual TAMU Mentors Program Student Participants

The program begins with a three-day session on TAMU's main campus and continues through the summer as participants work on cutting edge transportation issues. Initially, research proposals are developed by the students. Then the participants work with the mentors and class instructor to research and develop their ideas into papers and presentations.

Near the end of the summer academic session, mentors, graduate students and DOT employees gather on campus for formal presentations of the papers by the participants. Final papers are compiled and published in a compendium. Many students have had papers accepted for presentations at professional national and international meetings.

STUDENT AWARDS

SWUTC's Student Award Winners

Each year, in addition to selecting the overall SWUTC Outstanding Student to represent the SWUTC at TRB, the SWUTC honors two more students for their academic, professionalism and leadership achievements. Each of the three major awards presented yearly at the SWUTC; the *Naomi Ledé Outstanding Masters Student Award*, the *William J. Harris Outstanding Ph.D. Student Award* and the *Robert Herman Outstanding Student Award* comes with a $1,000 cash award.

Robert Herman Outstanding Student Award

For 2004, the *Robert Herman Outstanding Student Award* was presented to Dr. Grant Schultz from Texas A&M University. Grant received his Bachelor of Science degree in Civil Engineering in April 1994 from Brigham Young University as well as a Master of Science degree in Civil Engineering in April 1995. Grant received his Ph.D. degree from Texas A&M University in December 2003 under the guidance of Dr. Larry Rilett.

Tim Lomax presenting Grant his award at TTI Day, December 2003.

During his time at TAMU, Grant excelled academically including the receipt of several scholarships and awards including the SWUTC Outstanding Ph.D. Student of the Year in 2003, the ITE District 9 Outstanding student, and an Academic Excellence Award. Grant was selected as an Eno Fellow and served as the President of the Texas A&M ITE Student Chapter. Grant has been privileged to present the results of his research at several conferences including the past three ITE Annual Meetings, the TRB 5th National Conference on Access Management, the Integrated Graduated Education and Research Traineeship (IGERT) Conference, and at the 83rd TRB Annual Meeting in January 2004. While at TAMU his research experience included such topics as microscopic traffic simulation with an emphasis in commercial vehicle operations; access management; traffic impact analyses and access permitting; advance warning devices; and freeway ramp metering.

Prior to attending Texas A&M University, Grant was employed as a practicing engineer in the Salt Lake City office of the consulting firm of Sear-Brown. Grant is a registered Professional Engineer in the state of Utah and a Professional Traffic Operations Engineer under the Transportation Professional Certification Board, Inc. After graduation from TAMU in December, 2003, Dr. Shultz accepted a position as an Assistant Professor at Brigham Young University in Provo, Utah in the Department of Civil and Environmental Engineering.

Grant represented all of the SWUTC students at the USDOT special awards ceremony in Washington, DC in January 2004.

Naomi Ledé Outstanding Master Student Award

Allison Lockwood from the University of Texas at Austin was selected as the winner of the 2004 *Naomi Ledé Outstanding Master Student Award.* Allison completed her MS thesis under the supervision of Dr. Chandra Bhat. Her research focused on the activity and travel behavior characteristics of individuals over the weekend. Her research indicated the substantially different patterns of activities and travel pursuits on weekends and weekdays, and emphasized the need to analyze weekend patterns for traffic congestion alleviation and air quality improvement. Allison was a co-author on a paper presented at the 2004 TRB conference that focused

Allison Lockwood

on recreational activity participations over the weekend. She also contributed to the development of a commuter survey for Austin that has received considerable media attention.

Since her graduation in December 2003, Allison took employment with Kimley-Horn and Associates in Raleigh, NC as a transportation analyst.

William J. Harris Outstanding Doctoral Student Award


Tim Lomax presenting Jacqueline her award at TTI Day, December 2003

Jacqueline Jenkins, SWUTC graduate student at Texas A&M University was the 2004 recipient of the newly dedicated *William J. Harris Outstanding Doctoral Student Award*. While working on SWUTC sponsored research, Jacqueline developed her dissertation, "Modeling the Interaction Between Passenger Cars and Trucks," which focuses on developing a methodology to improve microscopic traffic simulation programs with driving simulators through distributed computing. Portions of this research have been presented at the 81st Annual Meeting of the Transportation Research Board and at the Applications of Advanced Technologies in Transportation conference sponsored by the American Society of Civil Engineering (ASCE). Jacqueline has received a number of academic awards including the AAA Foundation for Traffic Safety Fellowship, the Transportation Association of Canada's Stantec Scholarship, the Institute of Transportation Engineers District 9 Student Paper Award and the ENO Transportation Foundation Fellowship.

Since her graduation from TAMU in the spring of 2004, Dr. Jenkins accepted a teaching position at the University of British Columbia, Civil Engineering Department.

Recent UT-Austin Graduate Student and SWUTC Researcher Receives Prestigious Award


Michael Hunter and Dr. Randy Machemehl at CUTC Award Banquet

Michael Hunter, recent Ph.D. graduate from the University of Texas at Austin was the recipient of the CUTC *Milton Pikarsky Memorial Award* for outstanding Ph.D. dissertation in 2003. He was presented this award during the annual CUTC meeting in January 2004. Michael was supported by the SWUTC Advanced Institute Program during his doctoral program at the UT-Austin and participated in SWUTC sponsored research under the supervision of Dr. Randy Machemehl. His dissertation, "Development of a Flexible, Open Architecture Transportation Simulation and An Adaptive Traffic Signal Control Strategy," was completed in May 2003. He also co-authored one refereed journal article, two technical reports, and numerous conference papers during his doctoral degree program. Dr. Hunter is currently an Assistant Professor at Georgia Institute of Technology in Atlanta, GA where he is teaching undergraduate highway design, senior-level traffic engineering design, and a graduate-level signals course.

Prominent Appointment for Former TAMU Advanced Institute Student

Marc Williams, Texas A&M University graduate and member of the first class of the SWUTC Advanced Institute for Transportation Systems Operations and Management in 1991 was appointed by Kentucky Governor Ernie Fletcher, on February 25, 2004, to serve as Kentucky's Commissioner of Highways.

After graduation from Texas A&M in 1991, Mr. Williams gained employment with Wilbur Smith Associates where he undertook a wide variety of transportation programs that included regional transportation studies, multimodal plans and programs, highway corridor planning and development, economic analysis of infrastructure investment alternatives, environmental studies and community involvement activities. Mr. Williams was Vice President with Wilbur Smith Associates and had been responsible for regional management activities for Kentucky, southern Ohio and southern Indiana. He also served as the Associate-in-Charge of the Lexington, KY office.

"Marc Williams represents the best in his field and has shown a long history of effectiveness in getting things done," stated Governor Ernie Fletcher. "Marc offers a perspective on transportation issues that encompass a range of experience that the Secretary and I are seeking to bring to the Transportation Cabinet."

SWUTC Dedicates William J. Harris Award for Outstanding Doctoral Student

A resolution establishing the William J. Harris Award for the Outstanding Doctoral Student was presented to Dr. William J. "Bill" Harris in January 2004 at the Cosmos Club in Washington, D.C. Texas Transportation Institute (TTI) Director Herb Richardson and Southwest Region University Transportation Center (SWUTC) Director Dock Burke made the presentation.

Dr. Harris is one of the intellectual founders of the SWUTC and served for a decade as the Chairman of its executive committee. He continues as a member of the Texas A&M faculty in his capacity as Distinguished Professor Emeritus. Dr. Harris was the Associate Director at TTI from 1985 to 1995 where he contributed to the development of a national program in intelligent transportation systems. A visionary thinker, Dr. Harris promoted a strategic view of transportation issues and their relationship to education and research. In 1997, he was appointed to serve on the Presidential Commission of Critical Infrastructure Protection.

Herb Richardson, William Harris and Dock Burke at dedication ceremony

"Bill Harris imbued his high standards of professionalism, intellectual dynamism, and collegial enthusiasm into the educational and research programs of SWUTC," says Burke, "And for that we will be forever enriched."

SWUTC established the Harris Award in October 2003. The first winner of the award was Jacqueline Jenkins, a PhD engineering student at Texas A&M University mentioned in the preceding section.

Research Program

SWUTC pursues a balanced program of transportation research (transit, highway, and multimodal) by selecting those projects that reflect our vision, theme and strategic thrusts. Some of the specific research program sub-themes are: improved linkages between the U.S. and Mexican transportation systems, developing transportation solutions to improve the livability of our neighborhoods and communities and the quality-of-life for their inhabitants, development of transportation-based solutions to various environmental and safety problems, and development of a superior transportation workforce for the 21st Century.

Selected 2004 Research Highlights

SWUTC Study Seeks Ways to Curb Traffic Woes

SWUTC Study # 167246/P.I.: Travis Waller

How is traffic congestion affected when a highway on-ramp is closed? If grocery stores and post offices are built within walking distance from workplaces, will they help reduce traffic on clogged roadways? How much of a reduction in traffic will result if a commuter rail is built?

Answers to questions like these are the target of research done by University of Texas at Austin transportation engineer Travis Waller. His work aims to one day make your drive home easier.

Waller's research focuses on complex transportation systems, such as roadways, railways or airline systems, that can be modeled as networks. His models allow travelers in the network to receive information about costs or travel times throughout the system as they travel, so they can continually re-evaluate their travel decisions.

"A lot of my work involves uncertainty," says Dr. Travis Waller. "If we're planning for 20 years in the future, we don't know now what the travel demand will be. We don't know how many people will even live here exactly. But we have to build a system and try to manage that system now."

Waller's research deals broadly with transportation networks—the highways, roads, stoplights and traffic signs that shape the way we travel on land. He was cited as a top young researcher by the Massachusetts Institute of Technology's magazine, **Technology Review**, last year for his work creating software models of dynamic traffic networks.

Traditionally, transportation models account for steady-state traffic conditions—those that do not vary with time. They represent, for example, the number of vehicles on a roadway over a 24-hour period. Dynamic models, which can provide

the number of vehicles per minute, or even second, on a roadway, are much more useful in evaluating traffic networks. These models use complex mathematical equations, formulated by Waller, to simulate traffic conditions at any given time under any given circumstance. There are many different models that describe a wide range of transportation problems/systems. For example, one model uses equations from algebra that formulate the travel time of a particular road segment using the amount of traffic that will use that segment as the variable. Then, the equations for each segment are strung together, providing a description of the network.

Waller adapted a principle used in finance, where analysts attempt to make decisions that are good, on average, for all possible outcomes. "We can apply these exact same principles to transportation planning, but no one has. But we should," he says. "A lot of times it takes time for ideas that evolve in different disciplines to meet."


Dr. Travis Waller

He used this principle of risk to overturn the assumption of many traffic engineers that demand levels at certain places—like roadways, or even the number or lanes on a roadway—are known. His work introduced models that treat the future demand levels as uncertain, providing a much better, more realistic estimate of the performance of the traffic system.

"We need to be able to account for driver reactions to car accidents, intelligent transportation systems installed in their vehicles and many other factors," he says. "Right now there's a lack of tools to inform drivers of traffic conditions, but a number of researchers are working to correct that."

Radio traffic updates are a "primitive" example of driver tools, but Waller sees the future as having much more sophisticated means of communication, such as in-car navigation using the global positioning system.

If they're so important, why don't we have tools like these now? To create them, researchers need to anticipate how large groups of people simultaneously react to information. That's where Waller's computer models help. His models give other researchers the ability to determine the instantaneous effects of their tool for one driver or 100, how it affects each intersection, each highway's traffic count, each traffic light's timing. While researchers' tools in the lab may be years away from the driver, transportation engineers continue to design long-lasting roads, intersections, bridges and other systems.

Dr. Waller keeps in mind that once a road is built, it is designed to last more than 50 years. "Taking into account high-tech tools that drivers may use in the future doesn't appear to be a pressing need," he says, "but the decisions we make to build infrastructures now will affect people for decades to come."

SWUTC Researcher Examines the Transitions Process of Integrating Light Rail into Traditional Bus Cities

SWUTC Study #473700-00048/P.I.: Carol Lewis

The outward growth of American cities has fostered an increase in vehicular rather than pedestrian oriented modes of transportation. Roadways are becoming more and more congested, often unable to accommodate daily traffic patterns. In response to prevalent growth problems, many cities have looked to alternative modes of transportation. The focus in transportation planning today has moved from vehicular oriented design to place a greater emphasis on pedestrian-based mass transit. One of the most popular alternatives is light rail transit (LRT). Light rail transit is an old concept successfully combined with new technology. There are many elements involved in developing the urban infrastructure conducive to a transit riding culture. Among these elements are a receptive public decision making body that supports incentives for transit utilization, joint uses of properties around rail stations attracting rail patrons, and park-and-ride and feeder bus systems that facilitate access to rail.

Houston's METRORail

As of June 2004, there are 19 cites with a light rail system in existence. Seventeen out of the 19 operate under the same agency as the bus system. As many as 68 cities may be in some stage of planning and considering light rail transit as one of many alternatives. In her research, Dr. Lewis identified those dynamics that facilitated a city's success in adding light rail transit as a component of its urban transportation system. In addition, she defined a protocol that could be applied for those cities that will identify light rail transit as the preferred alternative. This framework for success will ultimately assist decision makers and implementers in their goal to integrate light rail into their traditional bus city.

Four cities were the focus of activities leading to implementation of integrated bus/light rail systems. The research included a literature review and a survey that queried four existing transit agencies that have light rail transit. The survey was supplemented with personal and email interviews with agency personnel. The studied systems are as follows:

- Dallas Area Rapid Transit (DART)
- Denver (RTD)
- Houston Metropolitan Transit Authority (METRO)
- Utah Transit Authority (UTA)

It was discovered that there are many steps necessary in a successful transition process. The four systems studied had several points in common to that end. Existing organizational charts were modified to include the new light rail sections. Each start-up operation developed a manual of procedures. Also, each of the cities sent a group of managers and future rail operators to be trained in another city on another light rail system, prior to the opening of its own system. It was necessary for the agencies to negotiate with the unions, the procedures and parameters for training operators and the provision of existing compared to new hires. Following those basic steps contributed to the four agencies starting on time, providing a reliable service product, and ensuring the right personnel on the job while adhering to budget constraints.

SWUTC Researchers Modify Driving Simulator to Study Perceived Pedestrian Safety

SWUTC Study #167722/P.I.: Byoung-Suk Kweon/Harlow Landphair

Transportation corridors are often pedestrian unfriendly. They are typically so threatening and environmentally discouraging that people are disinclined to walk or cycle. Motivated by the growing national health concerns related to early onset of obesity and obesity related diseases, and the growing mandate for transportation professionals to accommodate alternative means of transport, particularly walking and cycling, Professor Byoung-Suk Kweon and her research team investigated various physical street environments that would encourage the habit of walking and biking.

In the initial stage of this study, a focus group made up of parents from elementary schools was asked about perceptions of safety as it related to allowing their children to walk to school. The parents were asked questions on how different streetscapes influence their perception of safety. Does lateral separation from the vehicular travel-way influence whether a parent will allow their child to walk to school? How are perceptions of safety and spatial edge related to each other?

Pedestrian Simulation Image

Based on the results of interviews with the focus groups and field measurements, the research team developed a simulator pedestrian world in the current driving simulator located at the Texas Transportation Institute. The simulator allowed manipulation of key safety related elements identified by the focus groups. It also allowed researchers to study pedestrian behavior in the a real-time environment of a traffic-filled street. The simulator tested three identified correlates - location of the sidewalk, presence or absence of buffer and presence or absence of trees. Through the use of a test group of subjects, which were parents of small children, the pedestrian simulator showed a significant relationship between these correlates and the perception of safety and willingness to walk.

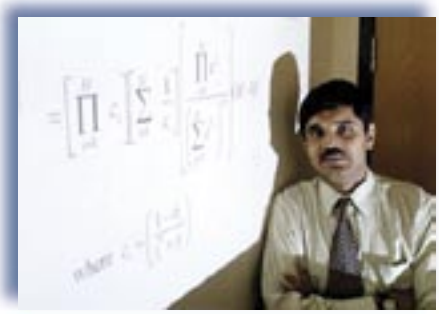
Real Walking Environment Image

The rules that emerged from the simulator work were that parents are more willing to let their children walk or bike to school when there is a landscape buffer separating the "sidewalk" facility from passing vehicles. Parents perceived the highest degree of safety when there was a wide buffer with trees separating the children's walking area from the vehicular traffic. And parents perceive the same degree of safety from narrow buffers (four feet) with or without trees.

The results of this study indicated that improving pedestrian environments consistent with these findings would reduce parents' concern for their children's walking safety. Children's walking and biking may take a critical role improving children's physical health and reducing childhood obesity. The importance of this study is that applying the findings may lead to the development of an early habit of higher physical activity which would lead to a more active and healthy adult lifestyle.

SWUTC Leadership and Research Excellence Recognized

Dr. Chandra Bhat - University of Texas at Austin



Dr. Chandra Bhat, SWUTC researcher and an Associate Professor of Civil Engineering at The University of Texas at Austin, was awarded the 2004 *Walter L. Huber Civil Engineering Research Prize* by the American Society of Civil Engineers (ASCE) in recognition of his contributions to "innovative methods in transportation systems analysis and modeling". The prestigious and highly coveted Huber Prize is awarded for "notable achievements in research related to Civil Engineering".

Dr. Bhat was also recently elected as the Vice-Chairman and Chairman-Elect of the International Association of Travel Behavior Research (IATBR). Membership to the IATBR Board of Directors is determined through a world-wide direct ballot of all IATBR members. The current Board of Directors includes one individual each from Switzerland, the US (Bhat), Netherlands, Australia, France, Canada, Japan, and Chile. The IATBR is an international non-profit professional association of academics and practitioners who are interested in research that advances the state-of-the-understanding of the link among the activity, information exchange, and travel behavior of individuals.

Dr. Carol Lewis - Texas Southern University

Dr. Carol Lewis, SWUTC Executive Committee member and Director of the Center for Transportation Training and Research at Texas Southern University was appointed by Houston Mayor Bill White, on January 23, 2004, to serve as advisor to the Mayor's Office on Mobility. The Mayor's Office on Mobility represents the Mayor in implementing his Administration's initiatives for removing traffic bottlenecks which impede the flow of traffic and improving traffic management systems in the Houston area.

Dr. Travis Waller - University of Texas at Austin

New SWUTC researcher and assistant professor at the University of Texas at Austin, Dr. Travis Waller, was the recent recipient of two prestigious awards this past year. The first was his selection by MIT's **Technology Review** Magazine as one of the Top 100 Young Innovators in Science and Engineering in the World for his work in creating software models of dynamic traffic networks. This award was presented to Dr. Waller in December 2003.

The second honor was his selection to be the recipient of the National Science Foundation CAREER Award in early 2004.

Dr. Naomi Ledé - Texas A&M University

Dr. Naomi Ledé, SWUTC Executive Committee member and Senior Research Scientist at the Texas Transportation Institute, and former Center for Transportation Training and Research director at Texas Southern University was appointed by Governor Rick Perry, in November of 2003, to the Texas Emissions Reduction Plan Advisory Board where she will serve as the representative of Regional Transportation. The Texas Emissions Reduction Plan Advisory Board reviews the implementation of Texas Emissions Reduction Plan programs and provides recommendations for improving those programs. The Board consists of 15 appointed members and 7 ex officio members. Five members are appointed by the governor; five members each are appointed by the lieutenant governor and speaker of the Texas House of Representatives and seven serve as ex-officio members.

Dr. Zhanmin Zhang - University of Texas at Austin

Dr. Zhanmin Zhang, assistant professor in transportation engineering at the University of Texas at Austin,SWUTC Executive Committe member and researcher, was named to the National Research Council's Committee on Renewal of Department of Energy Infrastructure in September 2003.

The committee will serve the Department of Energy (DOE) by developing and recommending guidelines for immediate and long-term renewal of its resources and assets. The DOE owns a number of large national research laboratory complexes and associated supporting facilities, including buildings, plants, utilities, and roads. Dr. Zhang was selected to serve on this committee for his expertise in infrastructure systems management and knowledge of advanced database and information systems.

Dr. Harlow Landphair - Texas A&M University

Dr. Harlow Landphair, a research scientist with the Texas Transportation Institute, and researcher for the SWUTC, received the Distinguished Member of the Year Award from the Texas Chapter of the American Society of Landscape Architects (ASLA) in April 2004. Dr. Landphair recent research for the SWUTC pertained to pedestrian behavior and responses related to transportation facility planning design and operation. The award, which is given annually in recognition of outstanding professional achievement, was presented at the Texas ASLA meeting in Dallas.

Dr. Kara Kockelman - University of Texas at Austin

In recognition of her research excellence in the areas of travel behavior modeling, transport data analysis, intra-urban transport policy, and the connection between urban form and transportation, SWUTC researcher, Dr. Kara Kockelman was the recipient of the prestigious National Science Foundation Faculty Early Career Development (CAREER) Award. In addition, Dr. Kockelman was also listed in the American Biographical Institute's edition of 2,000 Notable American Women, 2003-2004.

Technology Transfer Activities

Current information, timely delivered to the right people is the desired outcome for the SWUTC's technology transfer program. Both educational and research program activities pursue vital aspects of technology transfer. Educationally, the student/professor relationships are the principal loci of technology transfer activities -- knowledge exchanged between professor and students in classroom and research endeavors. In the research program, technology transfer outcomes are typically associated with the delivery of research products (papers, lectures, presentations, reports, video/media) -- for individual research projects --- to potential and interested users and colleagues. Since the fall of 1999, SWUTC research has generated 93 final technical report. SWUTC researchers and students have presented 227 technical papers at national/international forums, and published 98 technical papers in professional journals. The SWUTC maintains a website at http://swutc.tamu.edu that presents overviews all SWUTC research and educational activities. Technical reports generated by SWUTC research projects may be downloaded at http://swutc.tamu.edu/reports.html.

Selected Technology Transfer Highlights

SWUTC Hosts Workshop to Assess Innovative Solutions to Transportation Needs in the *Colonias*

SWUTC Project # 167151/P.I.: Beverly Kuhn

A dream of nearly every American, whether native-born or immigrant, is that one day they will own land, a place to call their own. It is an integral part of the American dream of life, liberty, and the pursuit of happiness. Those individuals living in the *colonias* along the Texas-Mexico border are no exception. However, because of their living conditions, they must struggle to pursue their dreams often without the basic needs of adequate potable water, sewer, electricity, natural gas, storm drainage, paved roads, and safe sanitary housing. Originally established during the latter half of the 20th century, these unincorporated areas outside city limits or in isolated areas of Texas counties were established by developers who sold land with little or no infrastructure under the contract for deed agreements at high interest rates. The appeal to the new owners was minimal up front costs and affordable monthly payments.

Since many of these residents are of either low or very low income, they slowly improve their property as funds are available. The result is an estimate of nearly 500,000 Texas residents, most of whom are legal citizens of the United States, who live under poor conditions and are challenged daily with the simple tasks of seeing their children off to school, going to work, obtaining water for daily use, buying groceries, obtaining quality health care, and having their trash removed. A major link in all of these basic needs is sufficient and affordable transportation.

Workshop participants discuss potential solutions

The goal of this workshop, which was conducted on August 24th 2004 on the Texas A&M International University campus in Laredo, was to gather advocates for the colonias and other individuals that work with these communities to work with the research team to assess and document innovative, affordable, and cost-effective methods for meeting some of the unique transportation challenges facing residents of the colonias. Twenty key decision-makers from cities and counties along the Texas-Mexico border and other individuals attended the workshop. The research team led the workshop with the intent to identify critical needs of these communities, discuss potential short- and long-term solutions to their transportation-related problems, and examine successful endeavors to meet these needs.

Many critical issues affecting the colonias were discussed including lack of water, fire protection, disconnect between urban and rural bus systems, solid waste removal, access to health services, education issues and unemployment to name but a few. The workshop participants identified the lack of water and the lack of public roads as the primary obstacles to efficient transportation. Without water, residents are forced to spend their limited time and resources on obtaining water at distant drop points. Poor quality privately owned roads makes getting public transportation to the residents extremely difficult.

The research team will utilize the information provided during this workshop to develop a handbook to help local agencies and advocate groups meet the transportation needs of the residents. Or to help these agencies provide services that can be accessed within the communities without the need for transportation. The ultimate goal is to help these residents improve their quality of life.

The full summary of the workshop findings are available for download at http://swutc.tamu.edu/papers.html.

SWUTC Researcher Presents Study Findings at Foreign Conference

Dr. Randy Machemehl was invited by former University of Texas graduate student Moh'd Suliman, who now teaches at Al-Balqa' Applied University in Amman Jordan, to be a co-sponsor, keynote speaker and help conduct workshops for the *International Conference on Highway and Traffic Engineering* in Amman, Jordan in April 2004. Dr. Machemehl and his former University of Texas graduate student, Dr. Michael Hunter, presented the paper "Development of a Flexible, Open Architecture, Transportation Simulation" developed though his SWUTC research project # 167823 "Adaptive Traffic Signal Control Development and Evaluation".

Randy Machemehl, Moh'd Suliman and Michael Hunter in Jordan

New SWUTC Projects

Number	P.I.	University	Project Title
473700-00017	Larry Rilett	TAMU	Strategic Planning for the Transportation Systems Group
473700-00019	Steve Roop	TAMU	Establishing "Best Practices" in a University Setting for Testing, Evaluation, and Management of Standards-Setting for Products and Processes Related to Homeland Security
473700-00021	Jim Kruse	TAMU	Analysis of Start-up Cross Gulf Shipping Activities with Mexico Since 1990: Problems and Opportunities
473700-00023	Steve Schrock	TAMU	Development of Secondary Task Tools for Laptop-Based Driver Surveys to Correlate Results with the Driving Simulator
473700-00025	Zong Tian	TAMU	Development and Evaluation of a Framework for Selecting Operational Strategies for an Integrated Ramp Metering-Diamond Interchange Control System
473700-00048	Carol Lewis	TSU	After the Opening: Integrating Light Rail into a Traditional Bus City - A Case Study
473700-00049	Lei Yu	TSU	Measurement and Evaluation of On-Road Vehicle Emissions at Signalized Intersections
473700-00069	Michael Walton	UT-Austin	Virtual Truck Weigh Station Concepts
473700-00071	Rob Harrison	UT-Austin	Evaluating Mexican Truck Safety at the Texas Mexico Border
167141	Darbha Swaroop	TAMU	Modeling and Control of Air Brakes in Commercial Vehicles
167142	Susan Chrysler	TAMU	Traffic Engineering Applications of Driving Simulation
167143	Debbie Jasek	TAMU	Establish a Texas Rural Summer Transportation Institute
167144	Beverly Kuhn	TAMU	Innovative Solutions to Transportation Needs in the Colonias
167145	Shaw-Pin Miaou	TAMU	Applications of Geocoded Traffic Crash Records and Crash-Risk Mapping Technology in Roadway Safety Improvements Projects
167146	G. Curtis Herrick	TAMU	Standards Testing Clearinghouse
167147	Robert Brydia	TAMU	Real-Time Performance Measures Workshop
167148	Laura Higgins	TAMU	Alternative to Fixed Routes-Feeder and Flex-Route Transit Service in Texas
167149	Debbie Jasek	TAMU	Integrating the Transportation Road Show and Library and Transportation Career Guide into Center for Professional Development Web Site
167150	Curtis Morgan	TAMU	Development and Implementation of High-Speed Rail (HSR) Systems in Texas
167151	Beverly Kuhn	TAMU	Workshop to Assess Innovative Solutions to Transportation Needs in the Colonias

New SWUTC Projects Continued

Number	P.I.	University	Project Title
167240	Chandra Bhat	UT-Austin	Time of Day Modeling of Person Trips Using Revealed Preference and Stated Preference Surveys
167241	Leigh Boske	UT-Austin	Gauging the Impacts of Maritime-Related Foreign Trade on the Southwest Region's Economic Growth Prospects and Transportation System: A Methodology for Linking Trade, Transportation, and Logistics Data
167242	Kara Kockelman	UT-Austin	Credit-Based Congestion Pricing: Implementation and Welfare Calculations
167243	Randy Machemehl	UT-Austin	Adaptive Traffic Signal Control: Advancing the Concept (Continuation of 167823 funded in FY03, 167524 funded in FY02, 167224 funded in FY 01 & 167805 funded in FY00)
167244	Randy Machemehl	UT-Austin	Using Random Search, Local Search and Exhaustive Search Methods to Optimize Transit Network Patterns (Continuation of 167824 funded in FY03)
167245	Jorge Prozzi	UT-Austin	Evaluation of the Joint Effect of Wheel Load and Tire Pressure on Pavement Response
167246	Travis Waller	UT-Austin	Robust Design and Evaluation of Transportation Networks with Equilibrium Under Demand Uncertainty
167247	Michael Walton	UT-Austin	How to Use ITS Data to Support the Transportation Planning Process
167248	Michael Walton	UT-Austin	A Framework for Developing Integrated ITS Solutions to Improve Traffic Operations
167249	Zhanmin Zhang	UT-Austin	Develop a Dynamic System to Simulate the Life-Cycle Performance of Pavements (Continuation of 167832 funded in FY03, 167533 funded in FY02, 167232 funded in FY01, 167803 funded in FY00)
167340	Sharon Boxill	TSU	3-D Traffic Simulation Demonstration Lab: A Technology Transfer Initiative
167341	Carol Lewis	TSU	Moving Toward Implementation: An Examination of the Organizational and Political Structures of Transit-Oriented Development
167342	Khosro Godazi	TSU	Procedures for the Implementation of a Transportation Scholars Program (Continuation of 167922 funded in FY03)

Ongoing SWUTC Projects

Number	P.I.	University	Project Title
473700-00015	Larry Rilett	TAMU	Modeling Passenger Car and Truck Interaction (2nd year continuation of 167427 funded in FY02)
473700-00043	Sharon Adams	TSU	The Integration of GIS and Transportation Modeling: A State-of-the-Practice Review
473700-00045	Lei Yu	TSU	Evaluation and Combined Use of TRANSYT-7F and CORIM in Traffic Signal Optimization and Simulation
473700-00046	Carol Lewis	TSU	An Examination of Successful Mixed Used in Transit Oriented Development
473700-00065	Hani Mahmassani	UT-Austin	Emerging Models for Provision of Real-Time Traveler Information Services: Transportation System Management Implications (Project funded in FY02 & FY01)
473700-00068	Rob Harrison	UT-Austin	Strategic Transportation Challenges and Issues Facing US Agriculture and Rural Industry: A Methodology to Prioritize Rural Transportation Needs
167127	James Ochoa	TAMU	Commercial Transportation Safety and Operations Work-shop
167225	Randy Machemehl	UT-Austin	Characterizing Transit Passenger Access Decisions (Continuation of 167806 funded in FY00)
167228	Hani Mahmassani	UT-Austin	Integrating Real-Time Information with Dynamic Fleet Decision Systems for Intermodal Freight Mobility (Continuation of 167807 funded in FY00)
167232	Zhanmin Zhang	UT-Austin	Develop a Dynamic System to Simulate the Life-Cycle Performance of Pavements (Continuation of 167803 Funded FY00)
167320	Ron Goodwin/ Sharon Boxill	TSU	Analysis of Texas' Speed Limit Laws and Fatality Accident Rates
167321	Ron Goodwin	TSU	An Evaluation of Alternative Fuels Usage by Public Transit Agencies
167322	Carol Lewis	TSU	An Assessment of Examination Criteria Used for Transit Friendly Decision-Making
167421	David Ellis	TAMU	Dissemination of Data and Training in the Analysis of Critical Transportation Planning Information for Small Texas Cities and Counties
167423	Debbie Jasek	TAMU	Develop a Transportation Road Show and Library of Promotional and Marketing Materials to Encourage Development of a Transportation Workforce
167424	Shaw-Pin Miaou	TAMU	Providing Personalized Traffic Safety Information to the Public Using Web-Based Geographical Information System (Web-GIS) Technologies
167427	Larry Rilett	TAMU	Simulation Modeling of Passenger Car and Truck Interaction

Ongoing SWUTC Projects Continued

Number	P.I.	University	Project Title
167522	Susan Handy	UT-Austin	The Case of the Soccer Mom and Other Stories: Travel by Choice or Necessity?
167525	Randy Machemehl	UT-Austin	Optimizing Transit Network Patterns
167526	Hani Mahmassani	UT-Austin	Real-Time Integrated Management of Intermodal Fleet Operations (Continuation of 167228 funded in FY01 & 167807 funded in FY00)
167527	Hani Mahmassani	UT-Austin	Shipper and Carrier Participation in Electronic Marketplaces and Implications for Freight Logistics
167528	Hani Mahmassani	UT-Austin	Disaster and Major Emergency Management Using Dynamic Modeling Approaches and ITS Technologies
157533	Zhanmin Zhang	UT-Austin	Develop a Dynamic System to Simulate the Life-Cycle Performance of Pavements (Continuation of 167232 funded in FY01 & 167803 funded in FY00)
167620	Carol Lewis	TSU	A Longitudinal Assessment of the Relationship Between Land Use, Land Values, and Bus Facilities
167621	Sharon Boxill	TSU	An Evaluation of 3-D Traffic Simulation Modeling Capabilities
167622	Ron Goodwin	TSU	Analysis of Federal and State Discretionary Funding of Highway and Transit Projects
167705	Felipe Zambrano	TAMU	An Assessment of U.S.-Mexico Trade Corridors and Border Infrastructure Development
167723	Debbie Jasek	TAMU	Develop a Transportation Career Guide for the Non-Traditional Student
167725	Bill Eisele/Bill Frawley	TAMU	Quantifying Access Management Performance Measures and Incorporating Them into the Transportation Planning Process
167726	Shaw-Pin Miaou	TAMU	A Guide to Intelligent Strategies for Transportation Infra-structure Protection and Transportation Security-Related Research
167803	Zhanmin Zhang	UT-Austin	Develop a Dynamic System to Simulate the Life-Cycle Performance of Pavements
167806	Randy Machemehl	UT-Austin	Characterizing Bus Transit Passenger Boarding and Deboarding Processes
167807	Hani Mahmassani	UT-Austin	Integrating Real-Time Information with Dynamic Fleet Decision Systems for Intermodal Freight Mobility
167809	Hani Mahmassani	UT-Austin	From Information to Knowledge: Strategies and Techniques for Mining Real-Time Traffic Data Bases
167820	Chandra Bhat	UT-Austin	Analysis and Modeling of Individual Activity-Travel Patterns During Weekends
167824	Randy Machemehl	UT-Austin	Using Simulated Annealing Algorithms for Optimizing Transit Network Patterns with Variable Demand

Ongoing SWUTC Projects Continued

Number	P.I.	University	Project Title
167825	Hani Mahmassani	UT-Austin	Disaster and Major Emergency Management Using Dynamic Modeling Approaches and ITS Technologies (Continuation of 167528 funded in FY02)
167826	Hani Mahmassani	UT-Austin	Modeling Environmental Impacts of Intelligent Transportation System Approaches
167827	Jorge Prozzi	UT-Austin	Methodology for Quantifying Pavement Damage Caused by Different Axle and Load Configurations
167828	Michael Walton	UT-Austin	Framework for ITS Deployments to Enhance Safety of Our Highway System
167829	Michael Walton	UT-Austin	Analyzing the Impact of Traffic on Air Quality with GIS
167830	Michael Walton	UT-Austin	An Identification of Equipment Needs at Marine Terminals for Efficient Handling of Cargo
167832	Zhanmin Zhang	UT-Austin	Develop a Dynamic System to Simulate the Life-Cycle Performance of Pavements (Continuation of 167533 funded in FY02, 167232 funded in FY01 & 167803 funded in FY00)
167900	Khosro Godazi	TSU	A Comparative Assessment of Emerging Transportation Techniques: A Seminar for Professional and Student Exchange
167903	Ron Goodwin	TSU	Evaluation of the Potential to Link Rural Communities with their Urban Neighbors
167920	Lei Yu	TSU	Evaluation and Combined Use of TRANSYT-7F and CORIM in Traffic Signal Optimization and Simulation (Continuation of 473700-00045 funded in FY02)
167921	Edward Owens	TSU	An Evaluation of Environmental Justice Programs: Laws and Issues that Affect Minority and Low-Income Populations
167922	Ron Goodwin/ Sharon Boxill	TSU	Procedures for the Implementation of a Transportation Scholars Program
167923	Sharon Boxill	TSU	An Evaluation of 3-D Traffic Simulation Capabilities

Completed SWUTC Projects

Number	P.I.	University	Project Title
473700-00005	Bill Eisele/Larry Rilett	TAMU	Examining Information Needs for Efficient Motor Carrier Transportation Logistics
473700-00007	Russell Henk	TAMU	Evaluate Strategies for Using the Transportation Management Infrastructure in the Role of National Defense Preparedness
473700-00009	Russell Henk	TAMU	Assess the Potential of Transportation Management Centers in Improving Hurricane Evacuation Operations
473700-00011	David Bierling	TAMU	Current and Future Rail Access Corridor Needs of Southern Texas Ports
473700-00013	Steve Roop	TAMU	Port of Houston Maritime Security Study
473700-00042	Carol Lewis	TSU	An Examination of the Smart Growth Initiative and Its Application to Region VI Communities
473700-00044	Carol Lewis/ Khosro Godazi	TSU	State of the Industry Overview - A Transit-Oriented Development Conference
473700-00047	Khosro Godazi	TSU	Conference on Regionalism
473700-00062	Rob Harrison	UT-Austin	Inland Ports and their Contribution to Transportation Efficiencies
473700-00063	Michael Walton	UT-Austin	Evaluating Operating Strategies and Transportation Control Measures which Reduce Air Pollution at Airports
473700-00064	Hani Mahmassani	UT-Austin	Real-Time Traveler Information Systems for Non-Commuting Trips
473700-00065	Hani Mahmassani	UT-Austin	Emerging Models for Provision of Real-Time Traveler Information Services: Transportation System Management Implications
473700-00066	Rob Harrison	UT-Austin	Using the Gulf Intracoastal Waterway (GIWW) to Move Containers to Gulf Ports
473700-00067	Rob Harrison	UT-Austin	Monitoring U.S. Safety Rules for Mexican Trucks
167121	Jeff Borowiec	TAMU	Evaluation of the Economic Growth, Air Quality and Noise Impacts of Regional Jet Service at Commercial Airports Serving Small Cities
167122	Laura Higgins	TAMU	Vanpools as Alternative to Fixed-Route Service
167123	Debbie Jasek/ Beverly Kuhn	TAMU	Develop a Transportation Science Competition and Career Fair for Junior High and High School Students
167124	Rodger Koppa	TAMU	Adaptive Equipment to Enhance Older Driver Performance
167125	Reza Langari/ James Ochoa	TAMU	Development of Integrated Rollover Warning and Active Control Systems (RWCS) for Tractor-Semitrailers
167126	Michael Manser	TAMU	Identification and Evaluation of In-Vehicle Distractors on Driving Performance
167128	Josias Zietsman	TAMU	Sustainable Transportation Performance Measures for Developing Communities
167130	Naomi Lede	TAMU	A Proposal to Conduct an Institute to Prepare High School Students for Transportation Careers in Texas

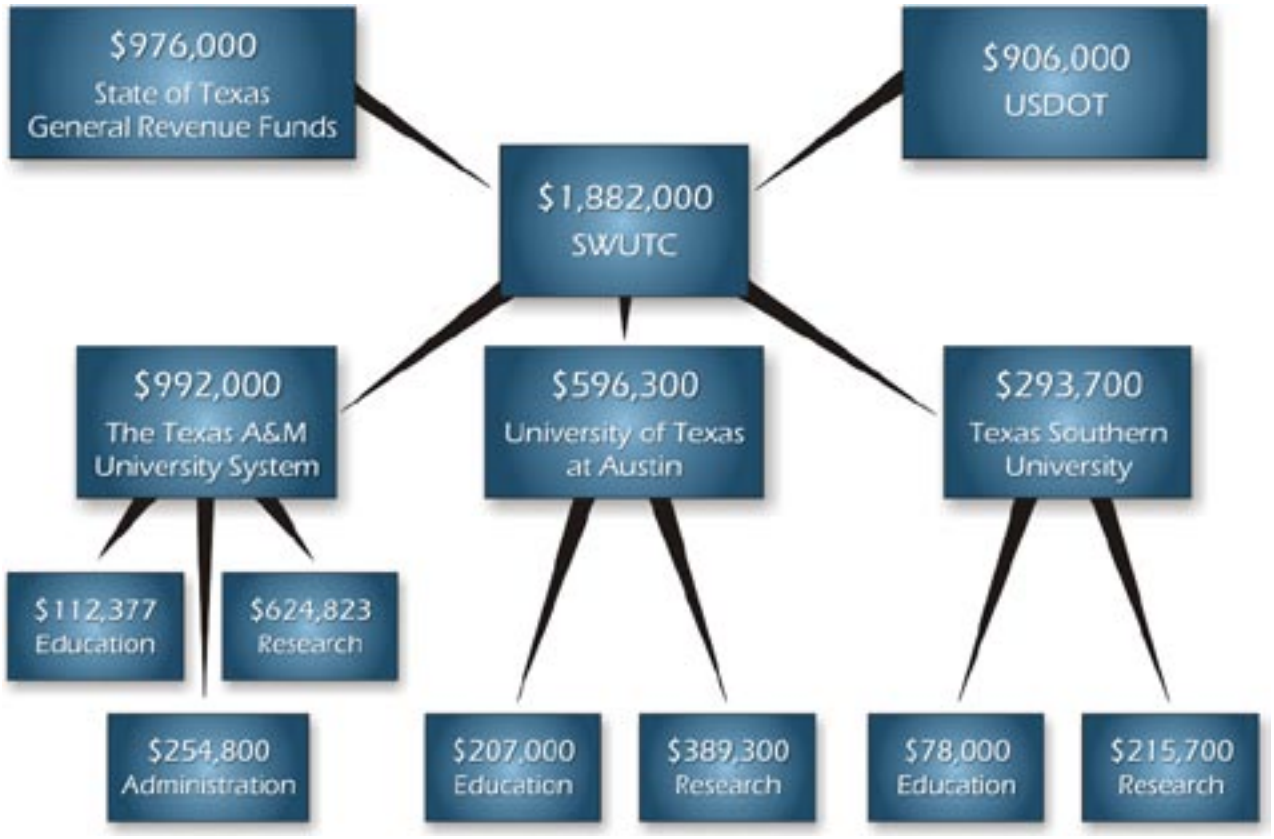
Completed SWUTC Projects Continued

Number	P.I.	University	Project Title
167220	Chandra Bhat	UT-Austin	A Methodology to Analyze the Effectiveness of Roadway Pricing Control Strategies Using Travel Survey Data
167222	Susan Handy	UT-Austin	The Education of Transportation Professionals
167223	Kara Kockelman	UT-Austin	Uncertainty in Integrated Land Use-Transport Models
167224	Randy Machemehl	UT-Austin	Adaptive Traffic Signal Control Development and Evaluation (Continuation of 167805 funded in FY00)
167229	Michael Walton	UT-Austin	Design and Implementation of an Intelligent Parking System for a Major Activity Center (Continuation of 167811 funded FY00)
167230	Michael Walton	UT-Austin	Impact of New Large Aircraft on Arrival Passenger Flows at Airport Terminals
167231	Michael Walton	UT-Austin	Restricting the Use of Reverse Thrust as an Emissions Reduction Strategy for Airports
167422	Laura Higgins	TAMU	Public Transit and Livable Communities: Corpus Christi After Evaluation
167425	Jody Naderi	TAMU	Pedestrian Health and Safety: Case Studies and Simulation
167426	Cesar Quiroga	TAMU	Development of an Integrated Assessment of Transportation Data for the Texas-Mexico Border Region
167520	Chandra Bhat	UT-Austin	Air Travel: A Systematic Analysis of Traveler Choices
167521	Leigh Boske	UT-Austin	Making Transportation Corridors Work: The Potential for Integration Roundtables at Southwest Seaports
167523	Kara Kockelman	UT-Austin	Uncertainty in Integrated Land-Use Transport Models: Simulation and Propagation (Continuation of 167223 funded in FY01)
167524	Randy Machemehl	UT-Austin	Adaptive Traffic Signal Control Development and Evaluation (Continuation of 167224 funded in FY01 & 167805 funded in FY00)
167529	Michael Walton	UT-Austin	Regional Impacts on Congestion Pricing
167530	Michael Walton	UT-Austin	Evaluating the Performance of Arrival Passenger Processing Facilities for Increasing Aircraft Size (Continuation of 167230 funded in FY01)
167531	Michael Walton	UT-Austin	The Use of ITS Technologies to Improve Transport Efficiency for an Aging Population
167701	John Basilotto	TAMU	An Internet Clearinghouse of Marine and Intermodal Information for Sustainable Transportation and Economic Development
167702	Beverly Kuhn	TAMU	An Analysis of the Market Potential for Distance Learning Opportunities in Transportation Professional Development
167703	David Schrank	TAMU	Developing a Sketch-Planning Technique Relating Economic Activity and Urban Mobility in Small and Medium-Sized Urban Areas
167704	Katie Turnbull	TAMU	Transportation and Tourism Workshop

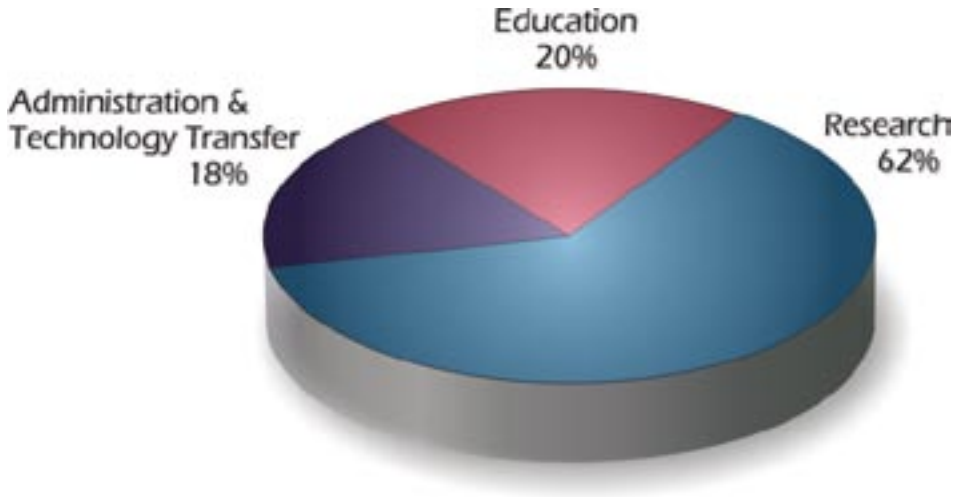
Completed SWUTC Projects Continued

Number	P.I.	University	Project Title
167706	Jason Crawford	TAMU	The Contribution of Hand-Held Cellular Phones to Vehicular Accidents
167707	James Bonneson	TAMU	Comprehensive Engineering Approach to Achieving Safe Neighborhoods
167708	Paul Nelson	TAMU	Automated Identification of Flow Patterns in Congested Traffic
167709	Cindy Estakhri/ John Overman	TAMU	Carbon Dioxide Emission Reductions Through the Use of Fly Ash in Concrete Production
167711	Eric Lindquist	TAMU	Agenda Setting in the Transportation Policy Domain
167721	Sue Chrysler	TAMU	3D Visualization as a Tool to Evaluate Sign Comprehension
167722	Harlow Landphair Shawn Turner	TAMU	Correlates of Environmental Constructs and Perceived Safety Enhancements in Pedestrian Corridors Adjacent to Urban Streets
167724	Juan Carlos Villa	TAMU	Methodology for the Development of Binational Driver and Vehicle Databases
167800	Chandra Bhat	TAMU	A Joint Model System of Mode Choice, Destination Choice, and Departure Time Choice for Nonwork Trips
167801 & 167221	Leigh Boske	UT-Austin	Impact of Latin American Trade on the Southwest Region's Economic Growth Prospects and Transportation System
167802	Susan Handy	UT-Austin	Understanding the Growth in Nonwork VMT
167804	Kara Kockelman	UT-Austin	The Propagation of Uncertainty in Multi-Stage Transport Demand Models
167805	Randy Machemehl	UT-Austin	Adaptive Traffic Signal Control Development and Evaluation
167808 & 167227	Hani Mahmassani	UT-Austin	Freight Transportation and Logistics Implications of Electronic Commerce and Virtual Supply Chains
167810	Michael Walton	UT-Austin	The Implications of Data Usage and Privacy on ITS Organizations
167811	Michael Walton	UT-Austin	Intelligent Parking Systems
167821	Leigh Boske	UT-Austin	Evolving Maritime Corridors and their Port Networks: Enhancing and Securing Hemispheric Trade with the Southwest Region
167822	Kara Kockelman	UT-Austin	Investigation of Credit-Based Value Pricing of Congested Roadways
167823	Randy Machemehl	UT-Austin	Adaptive Traffic Signal Control Development and Evaluation (Continuation of 167524 funded in FY02, 167224 funded in FY01 & 167805 funded in FY00)
167901	Lei Yu	TSU	Travel Demand Forecasting Models: A Comparison of EMME2/QRS
167902	Ron Goodwin/ Carol Lewis	TSU	An Assessment of the Procedures for Integrating Taxicabs into an Urban Environment
466610	Dock Burke	TAMU	Public Transportation for the Colonias

Funding Sources & Expenditures



Distribution of Funds



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