



# UPWARDLY MOBILE

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## Sixteen UTCM Projects Awarded for FY09

UTCM's Request for Preliminary Proposals in Fall 2008 yielded 39 submissions by the September 22nd deadline. The collection of proposals was reviewed and ranked by the UTCM Executive Committee and Advisory Board. Based on these rankings and other criteria, Formal Proposals were invited in late October 2008 by the UTCM Executive Committee and Director.

Sixteen projects were selected for funding for FY09 by the UTCM Executive Committee in December 2008. These projects total over \$1 million, span all of UTCM's focus areas and include projects addressing research, education and technology transfer. The projects include collaborative efforts of researchers and students in TTI (including four of TTI's urban offices throughout Texas), four academic departments at Texas A&M University, at least one other Texas university, TxDOT and private industry.

The listing of all FY09 projects can be found on the back cover of this issue of *Upwardly Mobile*. For more information, including all current and completed UTCM projects, project abstracts and biographical information on UTCM PIs, visit the UTCM web site at <http://utcm.tamu.edu>.



UTCM Graduate Assistant Angie Lehnert interviewing project managers

## SPOTLIGHT ON EDUCATION UTCM Graduate Student Conducts Research on Multiple Projects

UTCM has offered research opportunities to dozens of graduate students through UTCM research projects. One such student, Angie Lehnert, has participated in three different UTCM research projects.

Angie, a Masters of Urban Planning student in Texas A&M's College of Architecture, first conducted research on Brian Bochner's project "Making Mobility Improvements a Community Asset." Bochner reports, "Angie's research and summaries of past use of context sensitive solutions (CSS) in a variety of transportation projects are already being used in workshops and presentations on CSS."

Angie then participated in Suzie Edrington's demand-response productivity project. There she conducted initial surveys, developed a transit agency database *(cont. on p. 4)*

## UTCM to Host Symposium on Mileage-Based User Fees

April 14-15, 2009 Austin, TX



UTCM will co-sponsor a symposium to bring together professionals in the field of road user fees to share information and advance the discussion of user-based fees as a potential replacement for the fuel tax. Representatives from past, current and upcoming pilot studies and implementations will present lessons learned and key study topics from their projects. Panel discussions will address specific topics such as legislative and policy issues, public acceptance challenges, potential technology applications, and institutional issues. The symposium will incorporate interactive discussion sessions on logical next steps as well as the associated challenges and opportunities.

For information and registration, visit the symposium web site at:

<http://tti.tamu.edu/conferences/mbuf09/>

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## SPOTLIGHT ON RESEARCH

### Technology to Improve Border Crossing Efficiency



UTCM  
Researcher  
Juan Villa

*Project Title: Expansion of the Border Crossing Information System*

*Principal Investigators: Juan Villa (Research Scientist, System Planning, Policy and Environment Research Group, TTI)*

*Rafael Aldrete-Sanchez, PhD, PE (Research Engineer, Research and Implementation, TTI El Paso Office)*

For travelers and commercial freight operators, having access to real time border crossing information is key to managing trip times. Similarly, archived border crossing information is an important tool for planners, researchers and decision-makers in designing efficient border crossings. Yet no efficient system exists for measuring, reporting and archiving border crossing data.

With funding from the UTCM, Research Scientist Juan Villa, Dr. Rafael Aldrete-Sanchez, Dr. Rajat Rajbhandari and their TTI research team are filling this void, developing a comprehensive Border Crossing Information System (BCIS) using El Paso's existing system – Paso Del Norte Regional Mobility Information System (PDN-RMIS) – as a platform. Villa learned from stakeholders that having roadway data on either side of the border is as important as knowing what is happening at the border. As a result, Dr. Rajbhandari developed a "single-window" summary to provide pre-trip data for the border along with the surrounding roadway network.

*"Single window" on the prototype system gives pre-trip information at the border as well as in the surrounding transportation network.*



*This view of the Bridge of the Americas in El Paso shows typically long queues of passenger and commercial vehicles entering the U.S. from Mexico.*

The team then assembled a comprehensive archive of border crossing data, including passenger and commercial vehicle

volumes, trade volumes, border wait times, currency exchange rates and other data. This archive was combined with real time regional mobility data in a common web portal.

In future work, Villa plans to demonstrate the BCIS prototype to stakeholders, incorporate feedback and develop the system into a fully operational BCIS for commercial use.

## UTCM Completed Projects (since 7/31/08)

### RESEARCH

**"Impact of Reconstruction Strategies on System's Performance Measures: Maximizing Safety and Mobility While Minimizing Life-Cycle Costs"** • I. Damnjanovic, A. Wimsatt, S. Butenko • 9/1/07 - 10/31/08

**"Improving Mobility Data and Benefit Estimation Procedures"** • T. Lomax, S. Turner, D. Schrank, W. Eisele, D. Ellis • 1/1/08 - 11/30/08

**"Feasibility of Mileage-Based User Fees: Application in Rural/Small Urban Areas of Northeast Texas"** • G. Goodin • 2/1/08 - 11/30/08

**"A New Systems Approach to Risk Reduction and Hazard Mitigation of Transportation Infrastructure Networks Subject to Multiple Hazards"** • M. Sanchez-Silva, D. Rosowsky • 1/1/08 - 12/31/08

**"Transit Services for Sprawling Areas with Relatively Low Demand Density: A Pilot Study in the Texas Border's Colonias"** • L. Quadrifoglio • 9/1/07 - 1/15/09

### EDUCATION

**"Graduate Certificate in Transportation Planning"** • F. Ndubisi • 9/1/07 - 9/15/08

**"A Special Topics Course on Intelligent Transportation Systems for the Zachry Department of Civil Engineering of Texas A&M University"** • K. Balke, G. Hawkins • 1/1/08 - 12/31/08

### TECHNOLOGY TRANSFER

**"Regional Coordination Workshop"** • J. Overman, L. Cherrington, J. Arndt, S. Edrington, R. Taylor, L. Higgins, C. Lewis, G. Goodin • 1/1/08 - 8/31/08

**"Nationwide Examples of State and Local Funds for Mass Transit"** • L. Cherrington • 3/1/08 - 8/31/08

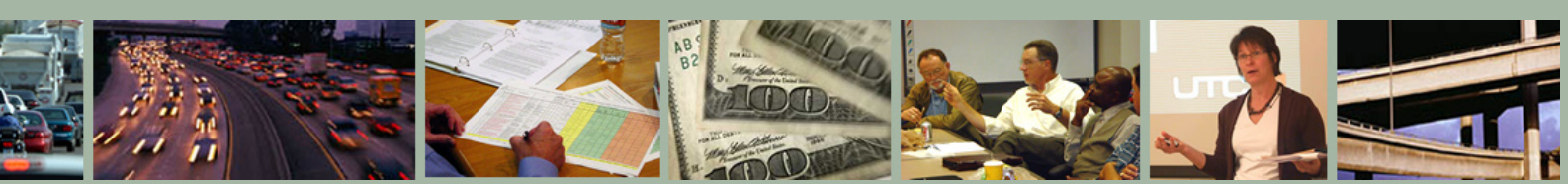
*More information and final reports on these and other completed projects can be found on the UTCM web site under Projects: Completed Projects.*

**Regional Mobility Information System v1.0**

**Bridge of the Americas - Puente Libre**

Passenger	At 11am MDT: 41 min delay (14 lanes open)
BCL	N/A
Commercial Standard Lanes	At 11am MDT: 15 min delay (4 lanes open)
Commercial Freight Lanes	At 11am MDT: no delay (2 lanes open)

Images courtesy of Juarez INMP  
Wait times courtesy of US CBP  
Last Updated: 10/7/2008  
Courtesy of US Department of Homeland Security



## SPOTLIGHT ON TECHNOLOGY TRANSFER Innovative Funding for Mass Transit

**Project Title:** *Nationwide Examples of State and Local Funds for Mass Transit*

**Principal Investigator:** *Linda Cherrington* (Program Manager and Research Scientist, System Planning, Policy and Environment Research Group, Transit Mobility Program, TTI Houston Office)



One of the transportation challenges facing Texas is the identification of adequate funding for mobility projects. During the 80th Texas Legislature, several proposals were made to address mass transit funding for the metropolitan areas of the state.

Faced with judging the merits of these proposals, the chairman of the Texas Senate Committee on Transportation and Homeland Security recognized the need for more information on this topic. He therefore requested that Texas Transportation Institute update previous research on national examples for funding regional transit and provide additional information on regional rail projects. UTCM

funded this research in 2008, with Linda Cherrington as PI.

Cherrington's research documents 56 existing mass transit and regional rail systems in 32 metropolitan areas across the US. Data reported for each system include history, governance, funding, capital costs, service statistics and operating costs.



UTCM  
Researcher  
Linda Cherrington

Cherrington was invited to give a briefing to the Texas Senate Committee on Transportation and Homeland Security on January 28, 2009, sharing results of her project. The briefing was well attended and her testimony was met with great interest; Cherrington received immediate response by several committee members and staff for more information and copies of the project's final report.

Cherrington's UTCM research findings provide the critical information sought by members of the Senate Committee for decisions they face in funding mass transit in Texas.

The final report on Cherrington's project "Nationwide Examples of State and Local Funds for Mass Transit" can be accessed on the UTCM web site under Projects: Completed Projects.



Melissa S. Tooley,  
Director, UTCM

### Director's Statement

As UTCM moves into its third year, here are a few of the exciting research, education and technology transfer initiatives we've been developing:

In October, UTCM's Executive Committee reviewed 39 Preliminary Proposals submitted in the call for FY09 proposals. Sixteen excellent projects were funded, with collaborative teams spanning TTI, the Texas A&M campus, other Texas universi-

ties, TxDOT and private industry. A listing of these projects can be found on the back cover of this issue of *Upwardly Mobile*.

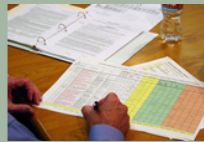
On the innovative finance front, increasing infrastructure needs combined with decreasing gas tax revenue creates a critical need for alternative methods of financing transportation improvements. As part of Ginger Goodin's UTCM informative and timely research on mileage-based user fees, UTCM will co-host a symposium in April to report and discuss the state of the practice in this area. More information on the

Mileage-Based User Fee Symposium can be found on page 1.

As infrastructure financing debates continue in Texas and across the country, UTCM is significantly contributing to discussion among policy makers. Two of our investigators have presented their research findings to committees of the Texas legislature in recent weeks: Ginger Goodin presented testimony on her work with mileage-based user fees, and Linda Cherrington evidenced ways to fund mass transit projects, using data from her UTCM research project described in the article above. We are proud that our researchers are involved in such relevant and timely research, and that we have the opportunity to share it with key decision makers.

In this issue of *Upwardly Mobile*, we've also highlighted some of our other research and T2 activities, as well as what one very busy student has been up to. More news of UTCM's positive impact on mobility is always just a click away on UTCM's web site at <http://utcm.tamu.edu>.

Innovatively Yours, *Melissa S Tooley*



## Mobility Colloquium Begins Its Second Year

Kicking off the second year of our successful Mobility Colloquium series, the UTCM hosted two colloquia in the Fall of 2008:

Thursday, September 4, 2008

### "Secrets to Success: How to Submit a UTCM Proposal"

Melissa S. Tooley, PhD, PE, Director, UTCM

UTCM Director Melissa Tooley reviewed the UTCM's FY09 Request for Preliminary Proposals, offered tips for submitting winning UTCM Preliminary Proposals and answered audience questions.

Monday, September 29, 2008

### "Transportation and Mobility in Architecture: Research Challenges and Opportunities"

Jorge Vanegas, PhD

Interim Dean, College of Architecture  
 Director, Center for Housing and Urban Development (CHUD)  
 Professor, Department of Architecture

Dr. Vanegas summarized the connections between architecture and transportation: "From urban planning and design through transportation infrastructure to individual facilities, mobility is a common thread." He urged researchers and students to explore the numerous research opportunities that are available linking architecture, transportation and people within the context of the built environment.

## University Transportation Center for Mobility

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## New UTCM Projects *(cont. from p. 1)*

More information on these projects is available at <http://utcm.tamu.edu> under "Projects".

### RESEARCH

"Mileage-Based User Fees – Defining a Path Towards Implementation (Phase 1)" • G. Goodin • 10/1/08 - 2/28/09 • \$60,000

"Transit Leadership Initiative" • L. Cherrington • 1/1/09 - 8/31/09 • \$27,000

"Improving Mobility Information with Better Data and Estimation Procedures" • T. Lomax, B. Wang • 1/1/09 - 11/30/09 • \$150,000

"Investigating the Effect of Freeway Congestion Thresholds on Decision-Making Inputs" • T. Qu • 1/1/09 - 12/31/09 • \$40,000

"Texas Urban Triangle: Creating a Spatial Decision Support System for Mobility Policy and Investments that Shape the Sustainable Growth of Texas" • M. Neuman, E. Bright, C. Morgan • 2/1/09 - 5/31/10 • \$100,000

"Mileage-Based User Fees – Defining a Path Towards Implementation (Phase 2)" • G. Goodin • 3/1/09 - 7/31/09 • \$40,000

"Statistical Analysis of Waterway Network Congestion: Causes and Costs" • X. Wu, S. Fuller • 3/1/09 - 8/31/10 • \$79,656

"Developing Performance Measures for Sustainable Freight Movement" • J. Zietsman, M. Farzaneh • 6/1/09 - 11/30/10 • \$80,000

"Leveraging Land Development Returns to Finance Transportation Infrastructure Improvements" • J. Saginor • 6/1/09 - 1/31/11 • \$100,000

"Multiple Depot Vehicle Routing with Applications to Paratransit and Rural Transportation" • S. Darbha, L. Quadrifoglio • 9/1/09 - 8/31/10 • \$80,000

"Impact of Gas Prices on Toll Road Use" • M. Burris • 9/1/09 - 12/31/10 • \$58,158

### TECHNOLOGY TRANSFER

"A Guide to Transportation Funding Options: Phase 2" • T. Geiselbrecht • 1/1/09 - 8/31/09 • \$32,300

"Facilitating Creation of Rural Transit System Technology User Groups" • J. Arndt • 1/1/09 - 3/31/10 • \$36,000

"Facilitating Outreach Programs for Minority Students in Rural South Texas" • D. Jasek • 1/1/09 - 12/31/10 • \$29,000

"Development of an Enhanced Toll Project Screening Model" • C. Beaty • 1/5/09 - 7/31/09 • \$65,364

"The Transportation Economy: Past & Future" • R. Cole, D. Dennis • 1/7/09 - 4/1/10 • \$50,000

## Angie Lehnert *(cont. from p. 1)*

and a method for case study selection, and conducted literature reviews and site visits.

For Linda Cherrington's project reviewing mass transit funding (see p. 3), Angie identified the sources of local funding for transit agencies nationwide by researching internet reports and budgets for each agency.

Angie has also completed several courses in the transportation planning certificate program developed with UTCM funding.

"My work on UTCM projects and in UTCM supported courses has honed my research, communication and writing skills," says Angie. And I've already developed numerous contacts in the transportation industry that will help me network professionally."

When she's not too busy on her research, Angie enjoys Netflix, knitting, roller skating and her favorite Indian dish, saag paneer.