UTC Travels to Washington DC for 86th Annual TRB Meeting

UTC students and staff members journeyed to Washington D.C. in January to attend the 86th Annual TRB Meeting. This year’s theme was “Transportation Institutions, Finance and Workforce—Meeting the Needs of the 21st Century.” UTC staff and affiliated faculty made multiple contributions in the study areas of modeling, pricing, freight, transit and paratransit.

UTC Research at TRB

Wenjing Pu, David E. Boyce and Jie (Jane) Lin’s research on stochasticity (Trip Table Realization: Underlying Stochasticity and Impacts on Assigned Link Flows) highlighted the importance of understanding the limits to which stochasticity can be ignored in interpreting traffic assignments for overall networks. Their research concluded that while large variations may exist on some links, the overall variability of the assigned link flows and costs is fairly small.

Sean T. Doherty and Abolfazl (Kouro) Mohammadian found that empirical evidence does not support the current practice of tour-based scheduling models that plans mandatory trips first.

Their research (Validity of Using Activity Type to Structure Tour-Based Scheduling Models) instead suggests a more flexible planning hierarchy and places more emphasis on activity duration.

According to their research (Policy Simulation for New Bus Rapid Transit and Area Pricing Alternatives Using an Opinion Survey in Jakarta), Sadayuki Yagi and Kouros Mohammadian found that activity-based microsimulation models hold great promise for being able to more accurately project policy effects on transportation behavior. In separate research, (Microsimulation and Policy Applications of an Activity-Based Modeling System of Travel Demand) Sadayuki Yagi and Kouros Mohammadian presented the progress they have made in developing a model that will help inform policy decisions around the timing of congestion pricing with Bus Rapid Transit.

Kouro Mohammadian, Taha H. Rashidi, Raymond Barton, and Todd Litman also presented their research (Estimation of Costs of Cars and Light Truck Use per Vehicle-Kilometer in Canada) that calculated the total cost of vehicle operation of cars and light trucks in Canada. They found that on average, across 11 different vehicle types, it is 21% less expensive to operate a vehicle in congested conditions in the United States than in Canada. Additionally, Kouros Mohammadian worked with UIC graduate student Taha H. Rashidi to model the behavior of household automobile ownership using dynamic variables representing the state of household characteristics. Among other variables their research (Estimation of Costs of Cars and Light Truck Use per Vehicle-Kilometer in Canada) used number of adults in the household and household income.

UTC and a Competitive CTA

There is no shortage of voices giving CTA suggestions on how to improve their services. “Making the CTA More Competitive in the 21st Century” is a unique program at UTC that provides UTC transportation students an opportunity to work on research topics in the public transportation arena. The seven current projects in this program address such timely issues as service optimization, safety, image and perception, and, of course, funding.

CTA is the second largest transit system in the United States. As such the CTA could benefit from smarter more efficient use of their resources. Dana Andersen, Darold Barnum, and P. S. Srijan are working on a Bus Fleet Optimization project that will focus on reducing costs through properly placed and sized buses. It is expected that this project will improve upon current op-
Welcome to the UTC spring session Connector! We are proud to welcome a few new graduate research assistants into the Center and to see the others after the very brief winter break.

The year so far has been hectic but productive. Most of us attended the Transportation Research Board annual meetings in Washington D.C. in January where UTC faculty, students and staff made a total of 15 podium or poster presentations. The UTC reception in Washington DC also attracted many friends and well-wishers of the Center.

A research area which seems to be attracting a lot of attention is in the frequently updated, small-area estimation of employment locations. I was pleasantly surprised to see several TRB sessions and expert panels devoted to the topic. This type of data can significantly improve highway and transit planning operations which often have to depend on the decennial census or household travel surveys. UTC has increasingly undertaken research in the area of small-area estimates of employment location and I represented my colleagues Siim Sööt and Paul Metaxatos when I made a presentation in a Census Bureau panel on the subject at the Brookings Institute in early February. This type of UTC research has the potential to assist in the planning applications of the region and we hope to have it at the top of our research agenda in the years to come.

Warm Regards,

Vonu Thakuriah
Interim Director
Author of Best Student Paper Receives 2006 ITE Scholarship

Ms. Liang Long, PhD candidate in Transportation Engineering and UTC research assistant, was chosen by the Institute of Transportation Engineers (ITE) Illinois section as the recipient for both the ITE 2006 Best Student Paper Award and the ITE 2006 Student Scholarship. The title of her paper is “Transferability of Household Travel Data Across Neighborhood Types and Geographic Areas Using NHTS.” Liang was a guest of honor and received the awards at the ITE-Illinois Chapter 2006 annual dinner banquet on January 12th, 2007.

Krambles 2007 Scholarship Program Announced

The Urban Transportation Center announced that the 2007 UIC George Krambles Transportation Scholarship Award Program will award three scholarships totaling $2,000: one $1,000 award and two $500 awards. The program has been endowed by the George Krambles Scholarship Fund and is housed in the College of Urban Planning and Public Affairs. Application forms are available at the UTC office and submissions must be made by September 21, 2007.

George Krambles, former Executive Director of the Chicago Transit Authority, served the region’s transit system for 43 years beginning with the Chicago Rapid Transit Company in 1937 as a student engineer. He graduated from the University of Illinois at Urbana-Champaign in 1936 and was a good friend and supporter of UIC’s Urban Transportation Center. He was inducted into the American Public Transit Association Hall of Fame and is one of the most noted public transit officials of all time. George retired from the CTA in 1980 and passed away in 1999, leaving in place a magnificent legacy of achievement and friendship.

The Krambles fund was established by George to provide financial assistance to students embarking on careers in transportation, urban transit, planning, engineering and related fields. More than one hundred students have received scholarship awards and many are top transportation professionals. This is the second year awards are being made under the UIC program.

The mission of the fund is encourage young people to embark upon a professional career in public transportation by providing financial assistance to full-time graduate students enrolled in a transportation-related degree program in CUPPA or as UTC Research Assistants as of Fall, 2007.

TRF National Elections

Congratulations to Tony Pagano, Associate Professor, Managerial Studies after completing a successful year as President of the National Transportation Research Forum. Tony has been a long time supporter of TRF and was instrumental in forming the Chicago Chapter. The slate of officers for 2007 includes Joe Schwieterman, Professor and Director of the Chadwick Institute at DePaul University as an At-large member. You may contact any of your Chicago Chapter officers if you need information about the organization or wish to join: Chapter President, Joe DiJohn; Secretary/Treasurer, Chuck Abraham, IDOT; and Program Vice Presidents Joe Schwieterman, Tom Vick, CMAP, Leanne Redden, RTA, and Kazuya Kawamura, UIC.

UTC Faculty and Staff Invited to Moderate and Speak

Over the last few months UTC has been asked to moderate, speak and sit on panels across the country and globe. Here’s a list of who has been doing what.


Sööt, S. Participant on the Sound Transit Expert Review Panel. Seattle, WA.


METSI Focuses North

McHenry County Transit Implementation Task Force

UTC staff is providing support to McHenry County by participating on the recently completed county-wide transit plan Implementation Task Force. Support was provided to the County’s Job Access Reverse Commute (JARC) and New Freedom Grant Applications for a centralized call center, which received RTA approval. Staff also participates on two sub-committees: the Coordinated Demand Response and the Subsidized Taxi Voucher Program Committees.

Lake County Coordinated Transportation Services Committee

As of March, thirty four completed responses to the paratransit provider survey have been received. Twenty-two of the respondents provide transportation including eleven townships, six municipalities and five not-for-profit social service agencies. This information will be used to develop strategies for coordination of services and to provide improved information to the participating agencies and the public. Staff has also assisted the County in preparing an RTA Regional Transportation Assistance Program (RTAP) grant application to undertake an in-depth countywide paratransit study.

UTC at TRB

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The results of a collaborative research project (Novel Direction-Based Clustering Algorithm in Vehicular Ad Hoc Networks) with the following UIC contributors: Peng Fan, Kouros Mohammadian, Peter Nelson, James Haran and John Dillenburg were presented. This research proposed and tested a clustering logic that proved to significantly improve cluster stability of Intelligent Transportation Systems (ITS) that apply Mobile Ad Hoc Network (MANET) technologies to Vehicular Ad Hoc Networks (VANETs).

Tony Pagano and Paul Metaxatos presented the results of their research (Impact of Computer-Assisted Scheduling and Dispatching Systems on Efficiency of Delivery of Paratransit Services: Evidence from Peoria, Illinois). Their research showed that computer assisted scheduling and dispatching did result in cost savings. It also highlighted however, the need for trained staff, who understand how to use the computerized systems to their advantage.

Kouroos Mohammadian and Yong-Ping Zhang presented their findings about the transferability of National Household Travel Survey Data.

Their research (Investigating the Transferability of National Household Travel Survey Data) showed that through clustering NHTS data into homogenous groups, some elements were readily transferable and through additional effort, others could be...
made transferable. This could have significant impacts on the need for large-scale data collection.

Nilay Yavuz, Eric Welch and P. S. Sriraj presented their research on the connection between transit perception and demographic characteristics. Their research (Individual and Neighborhood Determinants of Perceptions of Bus and Train Safety in Chicago: Application of Hierarchical Linear Modeling) showed that race, income and neighborhood order all had important impacts in the perception of transit safety.

According to the research presented by Lei Tang and Vonu Thakuriah (Relationship of Attitudes Toward Road and Transit Capital Investments and Propensity to Ride Transit Given Traveler Information) if real-time travel information was available to potential transit users, that information would significantly increase the likelihood of transit use among specific groups.

In the research they presented, (Evaluation of Application of Delivery Consolidation in U.S. Urban Area Using Logistics Cost Analysis) Kazuya Kawamura and Yandan Lu found that across a broad range of land use types, current freight distribution systems in the U.S. provided cost advantages to the common consolidation schemes found in Europe. Their research further suggested that in order to effectively reduce truck traffic in the urban core, these cost advantages could only be overcome through significant public investment or policy change.

Each January, the TRB conference provides UTC with the opportunity to present the research it has been doing. UTC’s presentations on congestion pricing, transferability of data, paratransit service optimization, and Bus Rapid Transit all supported the over-arching theme of this year’s TRB “Transportation Institutions, Finance, and Workforce—Meeting the Needs of the 21st Century.”

Competitive CTA
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Optimizing models that will better inform CTA on fleet mix and equipment assignment for each route or corridor.

Peng Wang, Jane Lin, and Darold Barnum, are working on a project that focuses on improving the passenger experience on CTA buses. The objective of this project is to evaluate the accuracy of the Automatic Passenger Counters and Automatic Vehicle Location Data and to develop composite measures of schedule adherence for individual bus route-directions. These measures will inform recommendations to improve bus schedule adherence and headway regularity.

Even with regular, on-time service, there are many factors that influence travel behavior. For a person to regularly choose public transportation as their transportation option, they must feel that their travel will be safe. Nilay Yavuz, Eric Welch, and P. S. Sriraj are working on a project that seeks to identify factors that are most important to people in their perceptions of safety and to study the impact of these factors on CTA ridership. Additionally, this research will provide CTA with suggestions on what they can do to improve the actual and perceived safety of CTA services.

Although service optimization, reliability and safety all have fiscal impacts, the most pressing problem the CTA currently faces is one of operating finances. Anam Waqar and Michael Pagano have been working on a project that will identify alternative revenue sources that CTA might be able to use. This project will look at different types of funding to find the appropriate finance mechanism that could help CTA meet its growing demands with its limited revenues.

One obvious revenue source is that of fare collection. Matt Smith, Michael Pagano, and P.S. Sriraj are working on a project that targets new fare collection strategies. A time-based fare structure could allow fares to capture the increased marginal costs of transportation during peak periods. The use of time fares would also allow CTA to collect more data about passenger travel patterns which would lead to more informed decisions.

The CTA U-Pass is a creative fare medium that caters to university students. Tanushri Swarup and P. S. Sriraj are engaged in a project that attempts to determine the long-term impact of the U-Pass. This project will involve surveys to determine the travel patterns of students who receive the U-Pass as well as the travel patterns of those students who have graduated and were once U-Pass users. This project will provide CTA with recommendations on how to expand or improve the U-Pass program that will allow it to tap new markets and continue to be a revenue generating pass medium.

CTA funding, however, need not be limited to fare revenue. Andrew Heidel and P.S. Sriraj are looking at the possibility of funding transit needs through value capture. It is expected that this research will inform CTA on the added value that transit brings to land properties in the vicinity. Additionally, this project will develop a spatial decision support system around locating those sites that have the most potential for value capture opportunities.

Clearly, “Making the CTA More Competitive in the 21st Century” is a symbiotic relationship between the UTC and CTA. CTA gets new ideas and research capabilities while transportation students try their hand at solving real world problems. The research that is done in this program is representative of the kind of community-oriented research that is performed at UTC.
Publications

UTC faculty and RAs in italics


Presentations

Papers presented at the Association of Collegiate Schools of Planning annual meeting. Fort Worth, Texas, November 9-12, 2007.


For a listing of presentations made at TRB please see the “UTC Travels to Washington DC for 86th Annual TRB Meeting” article.

Papers presented at other conferences.


Student Projects and Theses


First Time Impressions

Thousands of people, thousands of presentations, nearly 600 sessions, 100 hours, 3 hotels and only one brain to comprehend it all. Those are the realities of a first time visit to the five-day Transportation Research Board Conference. Those kinds of numbers leave you instantly and simultaneously excited, overwhelmed and extremely tired. If there ever was a dull moment in those 100 hours it was no fault of the conference.

After the pleasantries of registration and a newcomers’ orientation the conference took off like a shot. Monday’s presentations provided interesting transportation topics at every session, quite frequently making it difficult to decide which session to attend. In between sessions, if you were not dashing out to get a bite to eat there was a dizzying array of posters to peruse in the exhibit halls, which seemed to magically transform every time you had a chance to poke your head in. It was like walking into a crowded cocktail party where the easy conversation was replaced with earnest discussions of the applicability of this modeling method or that one, or how this policy improvement will alleviate congestion.

While almost all sessions proved to be stimulating, with any luck you were able to find a few sessions that really piqued your interest. Then with one timid step to introduce yourself you could find yourself talking to researchers of a national caliber. People who not only care about your transportation interests, but have actually spent a considerable amount of their own time researching similar topics. With any more luck you find that one introduction leads you to another and this time the person’s name is preceded by, “Let me introduce you to the number one person in that field…” It is true that TRB can give you access to the premier researchers in virtually any transportation field you can think of.

As the week wore on, sessions began to thin out, selections were not as difficult to make and the lunch hour extended a little more into the afternoon. To anyone other than those who grew up in Washington D.C. this let up in the conference schedule was greeted with fast-paced excursions into the nation’s capital. To make a list here of the sights to see and the amount of time required to see them would belabor the point. Suffice it to say, as a newcomer to the TRB conference, along with your business attire and the guts to introduce yourself to those in your research field, you had better pack your running shoes.

UTC Reception

UTC students, faculty guests met for the annual UTC reception in Washington D.C. Guests came from places as far away as Toronto, Canada and Tokyo, Japan. The reception was held in a private banquet hall in the lobby of the Hilton Hotel. It offered an atmosphere conducive to conversation and relaxation after a long day of conference sessions and meetings. As has always been the case, the UTC reception offered an opportunity for old friends to meet and for new friends of UTC to be introduced and welcomed.
Upcoming Events

April 14-18, 2007
APA’s 2007 National Planning Conference
Philadelphia, PA
For more information: www.planning.org/2007conference/

June 1, 2007
Transport Chicago Conference
Illinois Institute of Technology
Chicago, IL
For more information: www.transport-chicago.org/

July 7-9, 2007
TRB 2007 Summer Conference
Chicago, IL
For more information: www.trb.org/calendar

August 20 – 23, 2007
URISA’s 45th Annual Conference
Washington, DC
For more information: http://www.urisa.org/conferences/aboutannual

October 18-21, 2007
ACSP 2007
Milwaukee, WI
For more information: www.acsp.org/events/conferences.html

November 6-8, 2007
New Directions in Asset Management and Economic Analysis: 7th National Conference on Asset Management
New Orleans, LA
For more information: www.trb.org/calendar

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