After an extensive search, USF and CUTR are pleased to announce that Jason Bittner has accepted the position of Director of CUTR.

Bittner previously was Deputy Director of the National Center for Freight and Infrastructure Research and Education (CFIRE) at the University of Wisconsin–Madison, held a research appointment with a focus on freight transportation in the College of Engineering’s Wisconsin Transportation Center, and was a lecturer in transportation management and policy at UW–Madison, where he was instrumental in establishing its multidisciplinary graduate certificate program in transportation. He also was an adjunct professor of political science and public affairs at Edgewood College in Madison, held an administrative management position with the Municipality of New Lebanon, Ohio, and worked for U.S. Senator Howard Metzenbaum.

As a researcher, Bittner has generated more than $1.6 million in total research funding and has managed large-scale, regional, and national transportation programs and initiatives, analyzed trends in intermodal freight transportation, and built traditional and non-traditional collaborative partnerships. He was program chair or part of the planning and development of national peer exchanges and conferences on freight, transportation asset management, and maintenance quality assurance and has completed state level assessments of mobility programs for older residents.

Bittner co-chairs the Transportation Research Board Committee on Conduct of Research and serves as a lead member of the committee on transportation asset management.

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CUTR selected for federal UTC grant

CUTR has been competitively selected as one of 22 national University Transportation Centers by the U.S. Department of Transportation, providing USF with a grant of $3.5 million to be matched with an additional $3.5 million for a total of $7 million. CUTR’s National Center for Transit Research was selected as one of only two public

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He also is actively involved in the Council of University Transportation Centers and the American Association of State Highway and Transportation Officials (AASHTO) Research Advisory Committee.

“CUTR is well-positioned nationally and regionally to be the ‘go-to’ resource for high-quality transportation research, education, and training,” said Bittner. “The university’s dedication to expanding its research endeavors, the talent and quality of the research staff and faculty in place, and the opportunities to leverage and facilitate collaborative partnerships within the College, across the campus, and with other leading institutions highlight the potential for growing CUTR’s footprint. It is the right opportunity at the right time for my family and me.”

Bittner took the helm at CUTR in January 2012 and will be CUTR’s third director since its establishment in 1988, following Gary Brosch, the organization’s founding director, and Ed Mierzejewski, who ended his term in December 2010. Steve Reich served as Acting Director after Mierzejewski’s departure and has resumed his responsibilities as Director of CUTR’s Transportation Finance, Management & Administration Program.

“I believe that Jason’s dynamic, visionary leadership style will be essential for growing an already outstanding program at CUTR,” said John Wiencek, dean of the USF College of Engineering. “We are confident he will build bigger bridges to all of the academic programs at the University of South Florida.”

“My vision will push CUTR to become a preeminent, internationally-recognized catalyst for transportation innovation through research, education, training, and outreach,” said Bittner. “While simple on paper, it is incredibly important to me that this vision be shared and adopted fully by the entire CUTR family, including faculty, staff, students, and stakeholders. It is centered on actionable and measurable tenets, requires empowered, entrepreneurial influences, and depends on enhanced strategic partnerships and collaborations.” He went on to say that he believes that USF’s broader mission to build a community of learners across the Tampa Bay region, state, and nation will influence what is done at CUTR and will also serve as a platform to ensure that the nation’s transportation systems remain safe, encourage economic competitiveness, enhance livability, protect the environment, and maintain a state of good repair.

Bittner is married and has three daughters, ages 10, 7, and 5 months. He holds degrees from the University of Wisconsin–Madison and the American University in Washington, D.C. CUTR is pleased to welcome him!

**UTC GRANT—continued from cover**

transportation-focused university research programs to receive this highly competitive national grant. The NCTR consortium of four universities is led by USF and includes Florida International University’s Lehman Transportation Center, the University of Illinois at Chicago’s Urban Transportation Center, and North Dakota State University’s Small Urban and Rural Transportation Center.

“The University Transportation Center grant will allow the National Center for Transit Research at USF to build upon its national leadership role in transit research,” said U.S. Congressman Kathy Castor. “Investments in transportation infrastructure and construction remain a major source of local jobs, and I am pleased to see that USF and the Tampa Bay Area are once again at the forefront of innovative research that will help our neighbors.”

NCTR was originally established in 1991 and focuses on improving the nation’s transportation system by conducting
In October 2011, the U.S. Patent and Trademark Office issued a patent to a team of researchers from CUTR and USF’s Department of Computer Science and Engineering. The Wireless Emergency-Reporting System (US Patent 8,045,954) relates to a method of providing emergency-related information to and from a centralized location over a wireless network.

The invention improves transportation security by leveraging the use of personal electronic devices with global-positioning system (GPS) in security applications. Low cost, scalable technologies that are widely used by the public can be used to boost intelligence gathering, analysis, and field gaps in emergency communications. For example, a camera cell phone with GPS capabilities could be used to take a snapshot and report locations of suspicious objects or missing persons along with the photo or video.

This system can serve as a modern high-tech “neighborhood watch,” enabling law enforcement access to avail themselves of the many “eyes and ears” of the public simultaneously via available cell phones. Since most modern cell phones have embedded digital cameras, the public can instantly capture and remotely submit suspicious circumstances to law enforcement through pictures or video. Not only does this give the responders a visual representation of the situation but also information such as time, date, voice recordings, and physical location of the submitted occurrence. The system intelligently filters, classifies, and displays simultaneous submissions from various locations onto a computer screen so the dispatcher can manage the incident more efficiently (e.g., respond to an Amber Alert sighting).

Patent Awarded for Wireless Emergency Reporting System

Prior competitive UTC grants received by CUTR have provided USF with $1 million dollars annually, which is matched by the Florida Department of Transportation. In the new consortium, USF will retain $1.75 million of the federal grant as the lead member of the consortium, matched by state and local funds to bring the total program budget to $3.5 million. The entire $7 million grant will be administered by USF.

“We are very honored that for the third consecutive time since 2002, we have been successful in competition with so many other universities around the country to be selected to serve as a federally-funded UTC,” said Joel Volinski, NCTR Director. “This grant is considerably larger than any we have received in the past and provides evidence of the value NCTR provides to the improvement of our state and national transportation systems.”

“This successful competition assures our participation in the UTC Program through 2013,” said Jason Bittner, CUTR’s newly-appointed Director. “This grant will allow NCTR to improve the performance of transit agencies while also helping us develop the professional capabilities of students interested in careers in transportation. We are especially grateful to our main funding partner, the Florida DOT, for contributing to our success in the program.”
The system also allows dispatchers to handle many submissions simultaneously while identifying trends and patterns that may not be immediately obvious to a responder in the field.

Once a dispatcher views a particular message, he can respond to that message in a variety of methods. Three links appear at the bottom of the information window for each message: “Email,” “Call,” and “Forward.” By clicking “Email,” the dispatcher can send a written message back to the cell phone, complete with multimedia attachments. This feature could be used to give recorded audio instructions to a participant or send a photo of a missing child, stolen car, or suspect.

Another aspect is the “reverse-911” component for data-enabled mobile phones. Upon identification of a threat and issuance of the appropriate warning, a dispatcher can instantly relay a message to many participants with cell phones in a certain geographic area at one time.

In yet another application, the system can disperse public announcements such as evacuation warnings. The application also can send evacuation zone information and messages to cell phone users based on their current location. Multi-media messaging could be delivered in each user’s own language simultaneously while reaching more people in less time without tying up emergency management center phone systems.

The use of commercially-available hardware and software components keeps implementation and operation of such a system at a very low cost compared to the cost of creating and maintaining an entirely proprietary solution. The issues of scalability, compatibility, and interoperability are central to the design of this system architecture.

System architecture supports two-way multimedia communication that can be based on personal profiles, including an individual’s real-time location. This feature allows unique services that have not been previously possible, including the automatic submission of pictures and video captured by mobile phones that are automatically plotted on a web page map for anyone with a web browser to see. Additionally, a web page user can then send information back to the mobile phones based on the location from where the picture or video originated. This mass messaging can be targeted specifically at certain geographic areas, or the person can use voice-Over-IP calling service to initiate a phone call by clicking a limited number of multiple mobile phone numbers on the map. The common platform of the web browser can be used to share real-time information between groups in distributed locations, as anyone with a PC or laptop with an Internet connection can log into the page.

Massive information gathering and dissemination tasks can be accomplished efficiently and easily through this architecture. This information is also sent using the Internet and mobile phone data channels, which are not as susceptible to overcrowding as traditional phone line networks. Therefore, the communication ability of this system is not likely to be affected by disasters of national significance and frees voice lines in emergencies for first responders and other officials.

In situations of mass residential power failures, as is often the situation in the aftermath of hurricanes, mobile phones can be powered by hand or by car chargers. In such a situation, much of the public may not have access to television or even radio, but could receive updates via a mobile phone.

This project was conducted under the University Consortium/Center for Intermodal Transportation Safety and Security with funding from the U.S. Department of Transportation.

For more information, please contact Sean Barbeau, CUTR Research Associate, at barbeau@cutr.usf.edu.
The goal of the National Center for Transit Research (NCTR) at USF is to help develop public transportation services and alternative transportation options that are safe, efficient, effective, desirable, and secure. As funding for transportation becomes more difficult to secure due to a sluggish economy, the role of University Transportation Centers becomes even more important to our nation’s transportation system. The research we conduct is intended to help transit agencies decrease the number of accidents, increase the number of riders, and improve the efficiency of their operations. All of our projects are intended to ultimately reduce transit operating costs, increase revenues, and improve the quality of service the public receives.

NCTR has always stressed the importance of sharing information and technology transfer, but we are giving even more attention to the dissemination of research results. Beyond the standard placement of research results on our website, NCTR has established a bi-weekly series of netcasts that is free for anyone to watch on a live basis or recorded basis. These netcasts summarize the results of research projects and allow for questions to be asked of the presenter. In addition to sharing NCTR research results, these netcasts provide opportunities for guest lecturers from other organizations to present results of their research or programs.

Education and training remain the bedrock purpose of all UTCs, and NCTR helps to enhance the skills of the current workforce while also preparing the future generation of public transportation professionals. The competition among the many professions for future talent remains high, even with a slow economy. NCTR faculty teach courses in public transportation that are offered on campus and through Internet-based distance learning classes. The results of research completed by NCTR are incorporated into the classes taught to help keep the content current and relevant to today’s issues. USF is a contributor to the new national online Transportation Leadership Graduate Certificate Program developed for busy transportation professionals looking to keep their skills and knowledge current.

NCTR researchers are members of more than 40 state and national professional transportation committees and routinely exchange information with many hundreds of colleagues on a person-to-person basis. The number of transportation professionals and students who are members of NCTR-managed listservs now exceeds 5,200 and continues to grow. These listservs allow for fast and flexible opportunities to get answers to a variety of questions from fellow professionals who need solutions to local transportation challenges.

We express our gratitude to the U.S. DOT for entrusting NCTR to help it meet its goals of safety, state of good repair, economic competitiveness, livability, and environmental sustainability. We are also very grateful for the financial support received from the Florida Department of Transportation, which has provided the match to our federal grant and has managed and reviewed the vast majority of the research we have done. We recently were notified by U.S. DOT that our newly-formed NCTR consortium with Florida International University, Lehman Transportation Center, the University of Illinois at Chicago, and North Dakota State University was successful in the 2011 national UTC competition and we have retained our status as a federally-funded University Transportation Center, allowing us the privilege to continue to serve U.S. DOT, FDOT, the transportation community, and the general public.

Joel Volinski, NCTR Director
National Center for Transit Research at USF
Program Overview

Funding

NCTR has completed its 12th year, having been approved for funding in September 1999. The federal funding for this program helps to significantly expand the area of public transportation research already conducted by CUTR researchers over the last 21 years. Federal funds for the program are matched with a 100% cash match from the Florida Department of Transportation (FDOT). These matching funds are made available at a 10% indirect rate, compared to the federal indirect rate of 49%, resulting in a significant increase in direct funds available for public transportation research. FDOT’s commitment to match this grant was secured before July 1999, and the relationship remains strong, with FDOT committed to providing matching funds for the duration of the program. FDOT also has designated two senior members of its management staff to serve on the NCTR Advisory Board to help select future projects and guide the program.

Year 12 Accomplishments

Research

The 12th year of the NCTR program (FY 2011) supported 14 projects. In addition, research topics were solicited from public transportation professionals throughout the U.S. and Canada. More than 75 research ideas were received, and the following were selected for funding:

- Best Practices in Bus Dispatch
- Assessing the Impact of Proposed Transit Investments and Public Policy Choices on Land Use Patterns
- Estimating Costs and Benefits of Emissions Reduction Strategies for Transit by
- Extending the TRIMMS Model
- Dynamic Delivery of the National Transit Database Sampling Manual
- Analysis of the Implementation Status of the Impact of Transit Research
- Development of a Regional Public Transportation GIS Architecture and Data Model
- Quantifying the Benefits of the TRIP Program
- Field Evaluation of Yield-to-Bus Roadside Treatments and Bus Pullout Bays Design Characteristics
- Forecasting Paratransit Services Demand—Review and Recommendations

The following NCTR research projects were completed during FY 2011:

- Travel Assistant Device—Deployment to Transit Agencies
- Evaluation of Camera-Based Systems to Reduce Transit Bus Side Collisions
- Assessing Air Quality Impacts of Managed Lanes
- Developing a Framework for a Toolkit for Carbon Footprint that Integrates Transit
- Moving the Bus Back into Traffic, Phase 2
- Development of a Program Assessment Instrument for the Certified Transit Technician Program, Phase One
- Florida Bus Maintenance Staffing Practices
- Exploration of Transit’s Sustainability Competitiveness
- Enabling Cost-Effective Multimodal Trip Planners through Open Transit Data
- High Speed Rail (HSR) Station Area Access
Education

NCTR and its parent organization, the USF Center for Urban Transportation Research, continue to support initiatives to enhance professional development of the current and next generation of transportation professionals. These initiatives constantly are modified to reflect evolving needs and resources. Student interest in transportation remains strong, with many professionals updating their credentials to remain competitive in a more challenging employment environment. There is a growing recognition of the role public transit will play in transportation in the future and an awareness of how issues such as economic competitiveness, sustainability, funding, and climate change will influence transportation, which has led to growing interest in public transportation and related courses that incorporate a holistic multidisciplinary perspective on transportation.

Student involvement in project research continues to be a priority of CUTR and the NCTR program. During FY 2011, graduate and undergraduate students were involved in ongoing public transportation research projects supported by funding from NCTR and numerous other sponsors. The major areas of study of these students are multidisciplinary in nature, including engineering, economics, anthropology, urban planning, business, geography, and public administration. Through research and professional experiences, CUTR and NCTR help develop well-informed, well-educated individuals, many of whom have gone on to work in public transportation and multimodal planning environments, while others, even if not directly employed in the transportation sector, will carry out their career activities with a far richer understanding and appreciation of public transportation.

CUTR faculty continue to supplement the academic teaching faculty, offering a breadth and depth of teaching and research opportunities well beyond that which could be supported by the tenure-track faculty alone. The bi-weekly NCTR webinar series complements the education program offering additional materials for students. CUTR/NCTR continue to participate in an active graduate transportation seminar series.

Technology Transfer

Professional Activities

NCTR researchers continue to have significant involvement with partners in the public transportation industry, including serving on Transportation Research Board (TRB) committees and holding leadership positions in the American Public Transportation Association (APTA), the Association for Commuter Transportation (ACT), and the Institute of Transportation Engineers (ITE). This has created an opportunity to tout the NCTR program through solicitation of project ideas from organization members and in the transfer of research results.

Publications

- Barbeau, “Building a Global Community of Practice around Accessible Transportation,” *Compendium*, 90th Annual TRB Meeting
- Barbeau, Georggi, Winters, “Global Positioning System Integrated with Personalized Real-Time Transit Information from Automatic Vehicle Location,” *Transportation Research Record*
- Barbeau, Georggi, Winters, Labrador, “Participatory Sensing: Smart Phones as Sensors in a Connected World,” “From Idealism to Realism: Lessons Learned from Development of Standards-Based Software for APTS,” *Compendium*, 90th Annual TRB Meeting
- Boelechala, Miltenberger, Barbeau, Gordon, “Evaluating the Effectiveness of Travel Assistance Device on Bus Riding Behavior of Individuals with Disabilities,” *Compendium*, 90th Annual TRB Meeting
Training

During FY 2011, NCTR researchers were active in either providing or facilitating the following training sessions.

Training Courses

- Assessing Financial Sustainability for Transit Major Capital Projects
- Disability Etiquette Course
- Evaluating Effectiveness of Travel Assistance Device on Bus Riding Behavior of Individuals with Disabilities
- Fatigue Awareness for Transit Agencies
- FCC Narrowbanding: Are You Prepared!
- Florida Paratransit Driver’s Qualification Training Workshop
- Fundamentals of Bus Collision Investigation
- Instructor’s Course in 1-Day Paratransit Operator Training
- Instructor’s Course in Bus Operator Training
- Instructor’s Course in Excellence
• Introduction to Public Records
• Introduction to TRIMMS
• National Transit Trainers’ Workshop
• NTD Training
• NTI Implementing Rural Transit Technology
• Planning for Changing Travel Behavior
• REACT DVD Training
• Reasonable Suspicion Determination for Supervisors
• Reasonable Suspicion Drug & Alcohol Testing Referrals
• Runcutting
• Substance Abuse Management Program Compliance
• Supervised OJT
• TBEST Training
• TDP Training
• Transit Improvements from the Urban Partnership Agreement Program:
  • What Have We Seen So Far?
  • Transit Supervisor Certification Course
• Trends Affecting Transportation Systems
• TSI Rail System Safety

CUTR Webcasts/Online Training
• Alternative Fuels and Public Transportation: Evaluating the Economic Impacts of Transportation Capital Investments
• American Community Survey Statistical Analyzer
• Bicycle & Pedestrian Programs
• BWC Ridesharing in the Facebook Generation
• Car Sharing
• Developing a Successful Pedestrian Campaign in Your Community
• Electric Vehicles
• Enhancing Livability in Your Community: Recent Developments in Cost-Effective Multimodal Trip Planners
• Evaluation of Camera-Based Systems to Reduce Bus Side Collisions
• Grant Writing
• Green Transit Toolkit—Helping Systems Turn the Corner
• Instant Car Pooling
• Introduction to TRIMMS
• Location Aware Technology
• Managing During Tough Times: Lessons Learned in Transit Efficiencies and Revenue Generation
• Mobility Planning Strategies and Concepts
• Moving the Bus Safely Back Into Traffic
• Planning Theory
• Reasonable Suspicion Drug & Alcohol Testing Decision Training
• Research Today to Increase Accessibility Tomorrow: The Cutting Edge of Wayfinding Technology
• Social Marketing for Voluntary Travel Behavior
• Technology for State-of-the-Art Training
• Traffic Management and ITS
• Transit Boardings Estimation and Simulation Tool (TBEST)
• Transit GIS Clearinghouse
• Transit Vehicle Alternative Fuels Analysis Training
• Trends in Travel Behavior
• Trip Reduction Impacts for Mobility Management Strategies
• University Bicycle Sharing
• Vehicle Assist Automation Tech in Bus Revenue Services
• Walk-Wise: A Grassroots Pedestrian Safety Campaign

Commuter Choice
• Access Management
• Commuter Tax Benefits
• Establishing Program Goals and Objectives
• Incorporating TDM in the Planning Process
• Innovations in Bus Rapid Transit
• Institutional Arrangements
• Introduction to Basic Marketing
• Land Use Impacts of Bus Rapid Transit
• Location Aware Technology
• Ride Sharing
• Senior Ride Sharing
• Social Marketing—Voluntary Travel Behavior Change
• Social Media/Marketing
• Support Smart Commute
• Transportation Planning Tools
Journal of Public Transportation

The Journal of Public Transportation is a respected international journal containing refereed papers on current, original research and case studies associated with public transportation and related policy issues. Topics are approached from disciplines including economics, engineering, planning, BRT, GIS, finance, and safety, and include methodological, technological, and financial perspectives, with emphasis on the identification of innovative solutions to public transportation problems. The journal has nearly 2,200 subscribers from all around the world and boasts a distinguished editorial board.

FLOW Newsletter

NCTR's e-newsletter, FLOW: Moving People and Ideas, is another example of how NCTR shares the information generated through its research. The newsletter summarizes recently-completed projects, provides updates on the NCTR education program and student accomplishments, and directs subscribers on how to access NCTR's wealth of information.

Net Conferencing: Learn More—Travel Less

Netconferences provide a cost-effective method for reaching large groups of transportation professionals in real-time, requiring only a telephone, computer, and an Internet connection. All NCTR netconferences are available for on-demand viewing after the live presentation from the NCTR website at www.nctr.usf.edu.

NCTR continues to partner with other groups to expand our reach, such as with chapters of ACT to host netconference events in the cities of ACT members and non-members. These events are held at up to 50 locations and attract up to 200+ people for each event. In FY 2011, NCTR sponsored three netconferences in partnership with ACT:

- “How to Integrate TDM in the Planning Process” (June 2011)
- “Instant Carpooling—Just Add Passengers and Go: The Phenomenon That Is Casual Carpooling” (March 2011)
- “Getting Ready for Electric Vehicles—A New Transportation Alternative” (December 2010)

NCTR Website (www.nctr.usf.edu)

The NCTR website was revamped in FY2011 to make it easier to find research reports, publications, tools, and other products. NCTR’s website attracted nearly 24,000 unique visitors in FY 2011, with 72% being new visitors.

Peer-to-Peer Exchanges

NCTR continues to expand its use of social media with the addition of a Twitter account (@NCTRUSF) and the creation of LinkedIn group for the TDM listserv to help promote job openings. NCTR’s Best Workplaces for Commuters also uses Facebook, Twitter, and LinkedIn. NCTR has nearly 5,200 active subscriptions to its public transportation-related listservs, an overall net increase of 400 subscriptions (8%) in FY 2011. To subscribe to any of the above listservs, go to http://lists.cutr.usf.edu/readall_forums. All NCTR abstracts, announcements, and listserv postings also are published as RSS feeds. This method allows NCTR to deliver information to the desktop of transportation professionals and others (such as customized Google or Yahoo home page) without cluttering email inboxes.

NCTR National TDM and Telework Clearinghouse

NCTR does not pretend to be a one-stop shop with all the answers; we do, however, seek to be the first stop. We strive to make it easier for transportation professionals to quickly
get answers to their questions. The listservs described above help foster peer-to-peer interactions and get immediate answers, and we also use a customer relationship management (CRM) solution to provide intelligent self-service options for people to search frequently-asked questions drawn from many of the questions posed via the listservs. This approach allows NCTR to respond promptly to customer questions while keeping costs low and provides a means to reduce the total number of basic inquiries or repeat requests that require personal attention by NCTR researchers. Questions to NCTR also help identify research needs and topics for netconferences.

**Best Workplaces for Commuters™** ([www.bestworkplaces.org](http://www.bestworkplaces.org))

Best Workplaces for Commuters™ is an NCTR-supported initiative to reach out to private and public employers that meet the National Standard of Excellence as established by the U.S. Environmental Protection Agency in the provision of commuter benefits. Among the benefits of membership in the program are national public recognition for being commuter-friendly and socially-responsible; participation in web conferences and training to help worksites implement commuter benefits; access to web-based tools help calculate the overall financial, environmental, and traffic improvements associated with commuter benefits; and a help desk and networking opportunities with peers and experts in the field.

**Patents Pending**

The following are patents pending filed by USF’s Division of Patents & Licensing in coordination with NCTR researchers that are a direct or indirect result of NCTR projects:

- System and Method for Transportation Demand Management (TRACIT w/Expert System)
- Technology to Assist Transit Riders with Special Needs (Travel Assistant Device)
- Transit Stop Detection and Rider Notification Method to Instruct a Transit Rider to Initiate a Stop Request at the Appropriate Time (TAD Component)
- Wireless Reporting System for Civilian-to-Law Enforcement Communications (Wi-Via)
- Hurricane Evacuation Zone Finder, a GPS-enabled cell phone application (subproject of Wi-Via)
- Dynamic Ridematching Algorithm, online carpool matching system which takes actual travel path into account.
- System and Method for Real-time Travel Path Prediction & Automatic Incident Alerts, TRACIT system that predicts where someone may be headed in real-time based on their past travel behavior, looks to see if there are any incidents along this path, and then alerts the driver if there are problems along their predicted path.
- System and Method for Automatically Determining Purpose Information for Travel Behavior
- System and Method to Utilize Pattern Recognition in Real-time Location-Based Services
- System and Method to Optimize Location-Aware Application Performance Through Parallel State Machines (PATENT AWARDED)
- System and Method for Determining Critical Points in Location Data Generated by Location-Based Applications
- System and Method for Adaptive Location Data Buffering for Location-Aware Applications
- System and Method for an Efficient General Architecture in Support of Real-time Location-Aware Applications
- Geotella, a distributed and decentralized location-aware architecture
- System and Method for Spatial Point-of-Interest Generation and Automated Trip Segmentation using Location Data
On October 26, 2011, friends, former colleagues, and transportation professionals gathered to honor Senator Malcolm Beard, recipient of the 2011 CUTR Transportation Achievement Award. Held at USF’s Marshall Center, the dinner featured a keynote address by Brian Blanchard, P.E., FDOT Assistant Secretary for Engineering and Operations, and the introduction of Senator Beard by former Florida Senators James T. Hargrett, Jr., and Tom Lee. Also recognized were the recipients of the 2011 Georgia Brosch Memorial Transportation Scholarship, USF students Nagesh Nayak and Sujan Sikder.

Beard was instrumental in the establishment of CUTR in 1988 and has been a strong and tireless advocate for transportation throughout his career. He was elected Sheriff of Hillsborough County and in 1978 was elected to and served in the Florida House of Representatives from 1978-1980 and the Florida Senate from 1980-1996. During his tenure in the Florida Senate, he served for 10 years as Chairman of the Senate Transportation Committee and co-chaired a committee that sponsored the most generous transportation funding bill in the history of Florida. His tireless efforts resulted in establishment of the Florida Transportation Commission and CUTR. When he retired in 1996, he was President Pro Tempore of the Florida Senate and held in the highest regard by his peers and his constituents.
CUTR is assisting the Second Strategic Highway Research Program (SHRP2) with the largest coordinated safety program ever undertaken in the U.S. SHRP2 is tasked by Congress with investigating the underlying causes of highway crashes and congestion. The objective of the Naturalistic Driving Study is to identify countermeasures that will significantly improve highway safety through an understanding of driving behaviors by gathering data on 3,100 drivers in 6 states. The driving behavior data collection started in late 2010 and is expected to end in 2013.

This research agenda comes at a critical time in the history of our nation’s surface transportation safety. The U.S. was, for many years, the safest place to drive in the world. However, in terms of fatality rate, it dropped to 2nd in 1995 and 9th in 2003. Because vehicular crashes do not discriminate by age, they constitute a leading killer based upon years of lost life. For example, newly-licensed teen drivers are three times more likely to be involved in a fatal crash than their older counterparts, and they are also more likely to die in a car crash than from disease and accidental injury combined. Driver behavior contributes to more than 90 percent of crashes and is the primary factor in more than 60 percent of crashes.

Data for the study are gathered through instrumentation installed on participants’ vehicles that uses a number of sensors and video cameras whenever the vehicle is running. While the vehicle is being driven, a camera videotapes the participant’s face with some additional space around the head to accommodate head movements. Forward and rear views, an external view to the right, and a view of the participant’s hands and instrument cluster are captured as well.

The resulting data, expected to exceed 1 petabyte in size (about the size of a million 1-gigabyte USB flash drives), will provide a wealth of information regarding driving behavior, lane departures, and intersection activities, which are anticipated to be of interest to transportation safety researchers and others for at least 20 years. The massive data collected will be used for all types of research and analysis to quantify the contribution of relevant driver, roadway, vehicle, and environmental factors to the research questions selected and to assess countermeasure implications of the findings. The knowledge gleaned from the analyses, as well as the many additional analyses anticipated to be performed by other researchers, will support public policy, rulemaking, infrastructure improvements, and other as-yet-unknown activities, targeted at reducing the fatalities on our nation’s roadways.

CUTR is currently seeking participants for the study. Eligibility includes the following: age 16 or older, own or lease an eligible vehicle, have a valid driver’s license and drive regularly, agree to allow a virtually unnoticeable data acquisition system to be installed in personal vehicle for 12 to 24 months, able to read and complete questionnaires, reside within a participating study area, and eligible for employment in the U.S. (to receive compensation for participation—$500 per full year of participation, paid in three installments over the year).

To learn more about participating in the SHRP2 Naturalistic Driving Study, visit www.drivingstudy.org or call 1-877-495-1556. For further information about CUTR’s participation in the study, please contact Dr. Pei-Sung Lin, lin@cutr.usf.edu, (813) 974-4910.

Study participants will provide data via video cameras and sensors.
Experts gather at GIS Conference

Transportation professionals from around the world converged on St. Petersburg (Florida) in November for the seventh GIS in Public Transportation Conference, sponsored by the National Center for Transit Research (NCTR) and the Urban and Regional Information Systems Association (URISA). Conference attendees from various areas of public transportation’s Geographic Information Systems (GIS) industry heard ideas and research from some of the nation’s most renowned GIS experts. The conference offered participants access to more than 40 workshop presentations on topics including GIS asset management, program management, access to jobs, applications, data, multimodal planning, census data, bus stops, bus rapid transit, modeling and forecasting.

This is the second conference collaboration between URISA and NCTR in a continuing effort to build a working relationship among URISA members, GIS professionals, and GIS vendors. “The conference really synergizes this niche community of GIS public transportation professionals and allows for a one-of-a-kind networking and educational opportunity,” said conference co-chair Amber Reep. “The goal is to draw in experts from around the world by leveraging our relationships with those in the industry and the partnership between URISA and NCTR.” About half of the attendees were from Florida, with the other half from states across the U.S., including California, Colorado, Georgia, Illinois, Maine, Maryland, Missouri, Oregon, Ohio, New Hampshire, New Jersey, Tennessee, and Washington. Participants came from Denmark and Canada as well.

Adie Tomer, Senior Research Analyst for the Metropolitan Policy Program at the Brookings Institute in Washington, D.C., was the keynote speaker at the opening session. His address on “Missed Opportunity: Transit and Jobs in Metropolitan America” focused on a recent, one-of-a-kind research study completed by Brookings amidst the backdrop of rising gas prices, growing suburban poverty, continued sprawl, and uneven transit availability in cities and suburb areas. The study showed how transit systems link workers to jobs in metropolitan America and included an analysis that covered 371 transit agencies in the 100 largest U.S. metropolitan areas and provided information that could inform critical policy and investment decisions at a time of scarce public and private resources.

Several initiatives also were discussed during the conference, including a presentation on OpenTripPlanner (OTP), an international effort to create a flagship, open source platform for multimodal trip planning and analysis, presented by David Emory and Ken Webb of OpenPlans Transportation.

Martin Catalá, CUTR GIS Program Manager and conference co-chair, presented at the closing session and facilitated discussions on the “Future of the GIS Clearinghouse.” The GIS Clearinghouse serves as a repository of information, research studies, and information sharing and soon will include webinars and other online training programs.

In addition to the presentation sessions, numerous industry exhibitors participated, including ESRI, GEO Management, Caliper, Trapeze and Data Transfer Solutions. “Our exhibitors have been pleased with the quality of the attendees participating in these conferences,” said Wendy Nelson, Executive Director of URISA. “The gatherings provide them with great opportunities to have lengthy, in-depth discussions with conference participants.”

People who were unable to attend can find the conference proceedings, keynote addresses, and breakout session presentations online at http://www.transitgis.org. For more information about the GIS in Public Transportation Conference, please contact Martin Catalá at catala@cutr.usf.edu or Amber Reep at reep@cutr.usf.edu.
Brosch Scholarship Awarded

Two USF students have been awarded the 2011 Georgia Brosch Memorial Transportation Scholarship in recognition of their outstanding achievements.

Nagesh Nayak is a Ph.D. student in the USF Department of Civil & Environmental Engineering with anticipated completion in May 2012. He currently is a CUTR Graduate Research Assistant and has authored several papers and received several awards, including the National Academies' Airport Cooperative Research Program Graduate Research Award. He is president of the USF Student Chapter of ITE and active in many student organizations. His research interests include transportation systems engineering, airport management, and traffic flow theory, and his advisors are Dr. Yu Zhang and Dr. Sisinnio Concas.

Sujan Sikder is a Ph.D. student in the USF Department of Civil & Environmental Engineering with anticipated completion in December 2012. He currently is a CUTR Graduate Research Assistant and has authored several papers and received several awards, including a 2011 Eisenhower Graduate Fellowship from the U.S. Department of Transportation. His research interests include travel behavior of older adults, transportation planning, and econometric modeling, and his advisor is Dr. Abdul Pinjari. Congratulations to these two outstanding students.