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Annual Report - 2012

NCTR

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Message from the Director

The National Center for Transit Research at the Center for Urban Transportation Research at the University of South Florida has completed its 13th consecutive year as the preeminent transit-focused University Transportation Center (UTC) in the United States. During that time, NCTR researchers have completed 130 research projects, more than 160 students have participated in the program, 500+ presentations of research findings have been made at professional conferences, and 6,000 professionals and students have joined our extensive listservs. Our NCTR research faculty serve (often in leadership positions) on more than 40 professional transportation committees in organizations such as the Transportation Research Board, the Institute of Transportation Engineers, the American Planning Association, the American Public Transportation Association, and many more.

In addition to completing research projects, conducting an extensive technology transfer program, and developing and conducting a large number of training courses and programs, all of which include collaboration with NCTR student researchers, this past year might be best remembered as the year NCTR faculty were awarded patents for a number of new software applications that will aid the traveling public and provide greater security in transit facilities and on vehicles. Over the past six years, NCTR researchers have worked on projects that have laid the foundation for the development of these six patents, with 11 additional applications pending. Private companies are now in the process of commercializing the software applications developed and tested in large part through projects funded by the Florida Department of Transportation's match funding to our federal UTC grant. The award of these patents is a tremendous tribute to the intelligence and perseverance of our NCTR researchers.

Also this past year, NCTR participated in the major competition for UTC designation by U.S. DOT, following our successful competitions in 2002 and 2006. The program was restructured to reduce the number of UTCs from 60 to 22 (10 regional centers, 10 Tier I centers, and 2 transit-focused Tier 1 centers), and more than 60 universities applied for the designation to each receive $3.5 million in federal funds to conduct transportation research, prepare students for careers in transportation, and engage in technology transfer activities.

NCTR took the lead in forming a coalition of universities, including USF, North Dakota State University (through its Small Urban and Rural Transit Center), the University of Illinois at Chicago (through its Urban Transportation Center in the College of Urban Planning and Public Affairs), and Florida International University (through its Lehman Center for Transportation Research), and was successful in being selected as one of the two Tier I transit-focused centers. Soon after designation, representatives of the new NCTR consortium met with the Federal Transit Administration to identify research projects of interest to FTA, and all four partners are working with their respective state Departments of Transportation to identify research projects of benefit to their state.

NCTR is enthusiastic about working with our new partners over the next two years to develop solutions to transportation challenges experienced by large and small transit agencies around the country. We look forward to continuing our service to the transportation community by pursuing our mission of helping make public transportation safe, effective, efficient, desirable, and secure.

Joel Volinski, Director
National Center for Transit Research at USF
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Introduction
In September 1999, the National Center for Transit Research (NCTR) was approved for funding by the U.S. Department of Transportation's Research and Special Programs Administration (since renamed the Research and Innovative Technology Administration, RITA). The NCTR program builds on the goals and philosophies of the National Urban Transit Institute, which was established at the Center for Urban Transportation Research (CUTR) at the University of South Florida (USF) in Tampa by the Intermodal Surface Transportation Efficiency Act of 1991.

Theme of NCTR
The theme of NCTR is to make public transportation and alternative forms of transportation, including managed lanes, safe, effective, efficient, desirable, and secure. The goals of NCTR are to minimize traffic congestion, maximize mobility options, promote safety and security, improve the environment, and enhance community sustainability. This is accomplished by conducting applied and advanced research, disseminating the results, and expanding the workforce of transportation professionals through education and training to address the challenges and opportunities of the future.

NCTR’s theme is consistent with the strategic goals of the U.S. DOT and FDOT. Public transportation must become a more prominent mode of transportation as our population increases and ages, funding of highway infrastructure becomes more expensive and difficult to secure, congestion reduces the efficiency of the economy, gas becomes scarcer and more expensive, concern for the environment continues to increase, and our reliance on oil puts our national security at severe risk. More attractive public transportation services and managed lanes can provide more choices to the traveling public and business community to complement and supplement the highway construction that will be undertaken.

NCTR also focuses on research that promotes travel choices for all trip purposes and improves transportation system reliability. Research includes enhancements in the use of alternative forms of travel and practices such as telework, flexible work hours, congestion pricing, traveler information, ridesharing, and bicycling and pedestrian modes. In addition, NCTR researchers conduct research that helps advance the use of alternative fuels and technologies that help protect the environment while enabling traffic to move more safely and smoothly.

Organizational Structure of NCTR
NCTR is housed within the Center for Urban Transportation Research in the College of Engineering at the University of South Florida. Key personnel of NCTR include:

- CUTR Director: Jason Bittner
- NCTR Director: Joel Volinski
- Administrative Director: Dennis Hinebaugh
- Education Director: Steve Polzin
- Technology Transfer Director: Philip Winters
- Transit Training Program Director: Lisa Staes
- Transit Management and Innovation Director: Rob Gregg
- NCTR Program Assistant: Lisa Ravenscroft
Being housed at CUTR gives NCTR the enormous advantage of being part of a large and extremely active transportation research center. The faculty and students at CUTR represent the largest concentration of public transportation researchers in a single university in the country, and possibly the world. This concentration of talent and research provides opportunities for education and professional capacity-building within the center. Extensive technology transfer activities ensure that research results are available to potential users in a form that can be implemented, used, or otherwise applied.

**Program Overview**

**Funding**

NCTR has completed its 13th 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 24 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 49.5%, 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. FDOT provides project managers for all NCTR projects that it funds and 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. In short, NCTR would not be able to make its contributions to the public transportation industry without the indispensable support of FDOT.

**NCTR Advisory Board**

The NCTR Advisory Board was created during the first six months of the program and consists of experts in the public transportation community with knowledge in the areas of public transportation research, transit planning and operations, and alternative forms of transportation. The members and their affiliations are as follows:

- **Mike Baltes**
  Director, Office of Technology
  FTA, USDOT

- **Joe Calabrese**
  General Manager
  Greater Cleveland Regional Transit Authority

- **Ed Covem**
  State Public Transit Office Manager
  Florida Department of Transportation

- **Darryl Dockstader**
  Director, Office of Research
  Florida Department of Transportation

- **Dr. Minnie Fells-Johnson**
  Public Transportation Consultant
  Board Chair, Project for Public Spaces

- **Tim Garling**
  Transit Director
  Broward County Transit

- **Brendon Hemily**
  International Consultant in Public Transportation

- **Dr. Mary Leary**
  Senior Director
  Easter Seals/Project Action

- **Jon Martz**
  VP, Government Relations
  vRide

- **Perry Maull**
  Operations Manager
  Indiana University Campus Bus Service

- **Bill McCloud**
  Senior Vice President & C.O.O.
  Veolia Transportation

- **Michael Melaniphy**
  CEO, American Public Transportation Association

- **Eric Schreffler**
  President, ESTC

- **Donna Vlasak**
  Senior Program Officer for TCRP Syntheses
  Transportation Research Board
Year 13 Accomplishments

Research

The 13th year of the NCTR program (FY 2012) has supported 15 projects approved by the NCTR Advisory Board. These projects consist of 5 core programs that will be conducted throughout the life of the NCTR program and 10 newly-selected research projects that explore methods to accomplish the goals of the U. S. DOT, FDOT, and NCTR in enhancing the performance of public transportation.

Core program areas include continued development and maintenance of:

- National Transportation Demand Management (TDM) and Telework Clearinghouse
- ongoing production of teleconferences and webcasting
- graduate student professional development
- *Journal of Public Transportation*
- GIS in Transit Clearinghouse

In FY 2012, in addition to projects that fall into these core program areas, research topics were solicited from public transportation professionals throughout the U.S. and Canada. More than 75 research ideas were received, and the following 10 were selected for funding:

- Evaluation of Camera-Based Systems to Reduce Transit Bus Side Collisions (Pei-Sung Lin, CUTR, 77940)
- A Tool for Assessing Economic Impacts of Public Transit Spending (Xuehao Chu, CUTR, 77941)
- Flexible Public Transportation Services in Florida (Jay Goodwill, CUTR, 77942)
- Tracking Costs of Alternatively-Fueled Buses in Florida, Phase II (Steve Reich, CUTR, 77943)
- Effectively Managing Consumer Fuel-Price-Driven Transit Demand (Justin Begley, CUTR, 77944)
- Transit Boardings Estimation and Simulation Tool (TBEST), Calibration for Guideway and BRT Modes (Steve Polzin, CUTR, 77945)
- Ridership Impacts of South Florida's EASY Smart Card (Ann Joslin, CUTR, 77946)
- Improving Cost Effectiveness of Financial Incentives in Managing TDM (Chanyoung Lee, CUTR, 77947)
- Integrating Transit with Road Pricing Projects (Steve Reich, CUTR, 77948)
- Moving America on Transit—Innovation in Real-Time Transit Information (Sean Barbeau, CUTR, 79017)

Summary Listing of Completed Research Projects in FY 2012

The following is a list of the titles and project numbers for the eight NCTR research projects completed during FY 2012. A sample summary of three of these projects follows this list, and final reports for all completed projects are available in HTML and PDF formats on the NCTR website at www.nctr.usf.edu.

- TBEST Model Enhancements – Parcel Level Demographic Data Capabilities and Concepts for Park-and-Ride Modeling (Steve Polzin, CUTR, 77801)
- Expanding the Google Transit Data Feed Specification to Support Operations and Planning (Martin Catalá, CUTR, 77902)
• An Assessment of Public Transportation Markets Using NHTS Data (Xuehao Chu, CUTR, 77920)
• Exploring Opportunities to Expand Public Transportation Services in Florida Through Potential Private Sector Participation, Phase I – Analysis of Contracting for Fixed-Route Bus Service (Steve Reich, CUTR, 77923)
• Tracking Costs of Alternately-Fueled Buses in Florida (Steve Reich, CUTR, 77927)
• Best Practices in Bus Dispatch (Christopher DeAnnuntis, CUTR, 77930)
• Estimating Costs and Benefits of Emissions Reduction Strategies for Transit by Extending the TRIMMS Model (Sisinnio Concas, CUTR, 77932)
• Development of a Regional Public Transportation GIS Architecture and Data Model (Sean Barbeau, CUTR, 77935)

Summaries of Selected Completed FY 2012 Projects

An Assessment of Public Transportation Markets Using NHTS Data

Every few years, FHWA conducts a major survey called the National Household Travel Survey (NHTS). The 2009 NHTS was based on surveys from more than 150,000 households and examined travel behavior across all travel modes, correlated with a wide variety of traveler characteristics. NCTR researchers were asked by U.S. DOT and FDOT to assess the 2009 NHTS data in terms of public transit, using it to study both Florida and U.S. transit markets. Eight markets were defined by trip purpose, driver status, immigration status, existence of medical conditions that make travel difficult, household income, vehicle availability, race and ethnicity, and monthly frequency of transit use. Each of these markets was further analyzed according to market size, modal share, attitudes about a range of transportation issues, socio-demographics, and trip characteristics.

The study used six socio-demographics—immigration status, driver status, existence of medical conditions, household income, vehicle availability, and race and ethnicity—and two travel characteristics—monthly frequency of transit use and the purpose of person-trips—to define transit markets and assessed these markets from several perspectives:

• For the set of market segments based on a given characteristic, it determined their market sizes for public transit by looking at how all transit trips are distributed across them. This assessment, for example, determines that 6.1 percent of the total U.S. population’s zero-vehicle households represent the largest transit market, capturing more than 48.5 percent of the entire transit market in the U.S. It also determined that 18.9 percent of the total U.S. population use transit during an average month. In addition, the assessment determined that at less than 5 percent of the Florida population, new immigrants (entered the U.S. during 2000–2009), represent almost one-quarter of the transit market in Florida.

• For each market segment, it determined the mode choices of its population among driving, riding in a privately-operated vehicle (POV), using transit, walking, and biking. This assessment revealed that both persons in zero-vehicle households and the most frequent users of transit rely on transit for more than one-quarter of their daily travel, but transit still plays only a minor role for most other transit markets, including non-drivers and persons from extremely low-income households. The assessment also shows that biking is rarely used as a mode of transportation across all transit markets, including adults who do not drive and persons in zero-vehicle households.

• The study assessed the attitudes of each transit market in terms of its choice of the most important issue among a set of six pre-specified transportation issues and its view on the seriousness of each issue. The assessment determined, for example, that
more than one-third of most transit markets consider access to and availability of transit as the most important issue, but well under one-tenth of most transit markets consider lack of walkways and sidewalks as the most important issue.

- Researchers assessed the socio-demographics of each transit market, i.e., the distribution of its transit trips across a set of population segments defined on the basis of these socio-demographics. It determined, for example, that 43.7 percent of the transit trip makers who live in zero-vehicle households also live in households with income under $15,000, but 74.1 percent of the transit trip makers who live in households with income under $15,000 also live in zero-vehicle households.

- The study assessed the trip characteristics of each transit market and determined, for example, that the percent of transit trips for work purposes varies significantly across transit markets, with just 9.7 percent among non-drivers, 12.4 percent among persons using transit 1–9 times per month, and 55.6 percent among persons with household income of at least $100,000.

The full report is available at http://www.nctr.usf.edu/wp-content/uploads/2012/03/77920.pdf. For further information, contact Xuehao Chu, Ph.D., xchu@cutr.usf.edu.

Estimating Costs and Benefits of Emissions Reduction Strategies for Transit by Extending the TRIMMS Model

Florida's remarkable transportation infrastructure is a key to its economic vitality, but transportation is also the single largest contributor to air pollution. Pollutants such as greenhouse gases (GHG) degrade air quality and contribute to climate change, while other pollutants have many environmental and health impacts. Urban areas, which are prone to traffic jams, generate high pollutant levels as vehicles inch along. By reducing vehicle use and highway density, public transportation can be a cost-effective and efficient means of reducing air pollutants. Therefore, how modes of transportation contribute to air pollution is an important topic of transportation planning.

The Florida Department of Transportation (FDOT) is working to create a GHG baseline for each Florida transit agency, focusing on reducing ozone emissions. However, ozone is only one of many airborne pollutants. This project engaged NCTR researchers to develop a low-cost method for assessing the full benefits and costs associated with the implementation of mobile source ozone reduction strategies while accounting for a broader spectrum of emission pollutants. They did this by extending the capabilities of software developed at USF that already was used to model transportation strategies—Trip Reduction Impacts of Mobility Management Strategies (TRIMMS).

Originally, TRIMMS evaluated strategies that directly affect the cost of travel, such as public transportation subsidies, parking pricing, pay-as-you-go pricing, and other financial incentives, and strategies that affect travel indirectly, such as alternative work schedules, telework and flexible work hours, and worksite amenities (e.g., childcare). With additional programming, the researchers enabled TRIMMS to evaluate a full suite of air pollution emissions based on a user-selected transportation strategy. Through a new interface, users compare selected strategies to understand their relative impacts on pollutant levels.

TRIMMS enables FDOT, transit agencies, planners, and communities to use a method similar to highway cost-benefit analyses to quickly estimate emissions and determine the societal benefits of changing travel behavior. Practitioners can assess costs and benefits for most strategies identified by the FDOT-sponsored Transit Ozone-Reduction Strategies Toolbox without the cost and expertise required by models that are more sophisticated.

The full report is available at http://www.nctr.usf.edu/wp-content/uploads/2012/02/77932-final.pdf. For further information, contact Sisinnio Concas, Ph.D., concas@cutr.usf.edu.
Development of a Regional GIS Public Transportation Architecture and Data Model

Coordinated data sharing is important for government jurisdictions that overlap the same geographic area. For efficient planning and operations purposes, each jurisdiction should have knowledge of the other organizations’ activities that may affect them.

A need to obtain and view spatial data from many public transportation agencies was identified, which will greatly increase the efficiency of employees that use public transportation information in their workflows. Furthermore, it can assist with regional public transportation planning efforts. Past efforts for intra-regional data sharing have included the manual transmission of datasets via email or File Transfer Protocol. However, manual data sharing is difficult to sustain at a high frequency due to the manual effort involved in collecting, formatting, sending, receiving, and processing the data. Additionally, each dataset may be in a different format, which makes comparison and coordination among agency datasets difficult and time-consuming. If the perceived effort to exchange data is too great, old and outdated datasets may be used in place of new data, even if new data are available.

The research team, with feedback from transit agencies, successfully developed and demonstrated a prototype software system that is able to automatically retrieve General Transit Feed Specification (GTFS)-based datasets (describing transit stops, routes, and schedules) from agency websites and store them in an enterprise geodatabase. Additionally, a Web application was developed to visualize and query transit data. The resulting Web application is capable of showing multimodal data for transportation systems that is always based on the most recent data available from the transit agency.

Challenges encountered in this project included working with proprietary Environmental Systems Research Institute (ESRI) software that has limited examples and documentation, and coordinating with transit agencies that are in various stages of collecting and maintaining their bus stop inventory data. Tools exist to assist transit agencies in developing an accurate bus stop inventory and in creating and maintaining GTFS datasets. Increasing the awareness and expertise of agencies in the use of these tools will be useful for deploying this system with data from additional agencies.

The full report is available at http://www.nctr.usf.edu/wp-content/uploads/2012/05/77935.pdf. For more information, contact Sean Barbeau at barbeau@cutr.usf.edu.

FY 2013 Research Program

Having successfully competed in the 2012 competition for UTC designation by U.S. DOT, the new NCTR consortium with North Dakota State University (through its Small Urban and Rural Transit Center), the University of Illinois at Chicago (through its College of Urban Planning and Public Affairs), and Florida International University (through its Lehman Center for Transportation Research) will receive $3.5 million in federal funds to continue to conduct transportation research, prepare students for careers in transportation, and engage in technology transfer activities. In mid-2012, representatives of the new consortium met with the Federal Transit Administration to identify research projects of interest to FTA, and all four partners are working with their respective state Departments of Transportation to identify research projects of benefit to their state and expect to commence research in fall 2012.
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 are modified constantly to reflect evolving needs and resources. Student interest in transportation remains solid, 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. Yet, some working professionals are postponing graduate studies to focus on satisfying their employers in these busy and challenging times.

Student involvement in project research continues to be a priority of CUTR and the NCTR program. During FY 2012, 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, urban planning, business, geography, and public administration. Through research and professional experiences, NCTR helps develop well-informed, well-educated individuals, many of whom go on to work in public transportation and multimodal planning environments, while others, even if not directly employed in the transportation sector, carry out their career activities with a far richer understanding and appreciation of public transportation.

Course enrollment continues to show a slight weakness due to higher tuition and less support for continuing tuition reimbursement of part-time students by employers and a stronger University focus on Ph.D. students, which decreases Master’s student support. Interest by part-time students, students pursuing a certificate credential, and distance-learning students remains active. Job placement is more challenging than in the past but remains stronger than in many professions. Employment opportunities are acknowledged as more constrained than in prior periods of quick placement of technically-trained graduates. The program continues to be proud of its placement record, with numerous students finding increasingly prestigious employment opportunities.

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 tenure-track faculty alone. The bi-weekly CUTR webinar series complements the education program, offering additional materials for students and the professional community. CUTR/NCTR continues to participate in an active graduate transportation seminar series. Students are also active in student professional organizations, paper and presentation participation, and pursuit of a variety of awards and scholarships.

Transportation Certificate Programs

CUTR’s newest certificate, the Transportation Systems Analysis Certificate, has been well received, with ongoing inquires and a growing roster of students. The distance learning feature makes it particularly attractive for continuing education for working professionals. CUTR/USF courses are among the offerings of the new award-winning national Transportation Leadership Graduate Certificate, and we look forward to stronger distance learning interest from being part of this initiative. A complementary Transportation Planning Certificate is under consideration.
Other Education Initiatives

Several other initiatives continue to receive attention. The undergraduate course “Transportation and Society,” designed to introduce transportation to undergraduates from various disciplines, remains popular and is now being offered as a distance learning course. This course has introduced some students to transportation who have subsequently joined graduate degree programs in transportation. Distance learning delivery has transitioned to use Elluminate Live™ software to enable an easier, more flexible, and lower-cost method for delivering distance learning courses. More courses are being taught through distance learning. NCTR/CUTR occasionally receives inquiries regarding internship assignments of students in public- and private-sector placements. Exploration of strategies that would make these placements practical continues; however, the costs of fully supporting a student challenges the budgets of many potential placement entities relative to the support levels graduate research assistants receive. NCTR is establishing an NCTR Scholars program to attract students from around the country with interest in careers in public transportation. Those accepted will work toward a master’s degree tailored to public transportation issues while working as research assistants and interns in public transportation agencies, with the majority of their tuition expenses waived.

NCTR Outstanding Students

NCTR Student of the Year: Tara Rodrigues

For the past 20 years, at the annual winter meeting of the Transportation Research Board, the U.S. DOT has honored the most outstanding student from each participating University Transportation Center (UTC) for his/her achievements and promise for future contributions to the transportation field. Students of the year are selected based on their accomplishments in such areas as technical merit and research, academic performance, professionalism, and leadership.

Tara Rodrigues was selected as NCTR’s 2012 Student of the Year. She was a Graduate Research Assistant at the Center for Urban Transportation Research at the University of South Florida starting in 2009 and completed a Bachelor of Science in Civil Engineering (BSCE) degree and successfully passed the Fundamentals of Engineering Licensure Exam. While with NCTR, Tara played a major role in collecting, preparing, and summarizing data used in the NCTR project “Improving Value of Travel Time Savings Estimation for More Effective Transportation Project Evaluation.” She also worked on an evaluation of the Los Angeles Orange Line bus rapid transit (BRT) system and gained significant expertise with the National Transit Database (NTD) by annually collecting and compiling NTD data for each reporting transit agency in Florida. Tara received her MSCE in May 2012 and recently accepted a position as a professional Engineer with Parsons Brinckerhoff.

APTA Foundation Scholarship: Kyle Taniguchi

During his tenure as a research assistant at NCTR, Kyle Taniguchi was the recipient of an American Public Transportation Foundation scholarship presented to him at the APTA Annual Meeting in New Orleans in October 2011. In addition, he was honored to be asked to help Linda Bohlinger, Chair of the American Public Transportation Foundation and VP and National Director of Management Consulting for HNTB Corporation, to present a
$50,000 check during the retirement tribute to APTA President Bill Millar, which will be used to establish a new APTA scholarship award bearing Mr. Millar’s name. Millar has been a longtime supporter of NCTR and serves on the Editorial Board of NCTR’s Journal of Public Transportation.

Kyle recently began an internship with the Federal Transit Administration and will receive his MSCE degree from USF in December.

**Outreach and Technology Transfer**

Making research pay off depends on the quality of the research as well as outreach and technology transfer efforts. In addition to the extensive number of papers and presentations conducted by NCTR researchers, the center uses a variety of social media and outreach formats to connect with the public transportation community throughout the country, including net conferencing, a website, and listservs developed and maintained to foster peer-to-peer exchanges. NCTR’s presence via Twitter, Facebook, and LinkedIn is also being expanded. The following highlights NCTR’s accomplishments in technology transfer and outreach.

**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), among others. 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.

Following is a summary of the participation by NCTR staff as members of industry associations:

- Barbeau, Sean: Member, Expert Group, Java Spec Request 293; Member, Observers List for Java Specification Request 249 , Mobile Service Architecture 2; Member, Research & Technology Committee, APTA; Reviewer, Urban Transportation Data & Information Systems Com, TRB
- Bart, Ed: Member, Bus Standards Policy/Planning Steering Subcommittee, APTA; Member, Transit Fleet Maintenance Committee, TRB; Member, Transportation and Aging Interest Group, Geron; Florida Paratransit Maintenance Committee, FDOT; Florida Maintenance Consortium, FDOT; Statewide Roadeo Committee, FPTA
- Begley, Justin: ITS Subcommittee, TBARTA; Research Proposal Reviewer, OTREC
- Bittner, Jason: Co-Chair, Conduct of Research, TRB; Member, Transportation Asset Management, TRB; Panel Member, ACRP Project Panel on Air Cargo Facility Planning and Development, TRB; Panel Member, NCHRP Synthesis 43-01, Panel on Use of Transportation Asset Management Principles in State Highway Agencies; Panel Member, NCHRP Project 08-91, Panel on Use of Cross Optimization Results and the Impact on Performance Measures; Member: CUTC/RAC Liaison Group, AASHTO RAC; Tampa International Airport Master Plan Committee
- Bond, Julie: Sustainability Transportation Subcommittee, USF; SIFE Business Advisory Board Member, USF; Co-Chair, Conference Program Committee ACT
- Brosch, Gary: Editorial Board, Journal of Safety & Security
- Catalá, Martin: Member, Geographic Information Systems & Applications Committee, TRB; National Transit GIS Conference Co-Chair, National Transit Institute; Transit GIS Clearinghouse Charter Member, GIS Clearinghouse
- Chu, Xuehao: Editorial Board, Journal of Safety & Security
• Concas, Sisinnio: Reviewer, *Transportation Research Part A: Policy and Practice*, TRB; Reviewer, *International Journal of Sustainable Transportation*, TRB; Member, International Association of Travel Behavior Research, TRB; Session Chair, Transportation & Urban Form, Kuhmo Nectar Conference, Berlin; Proposal Reviewer, USF Internal Awards

• Davis, Janet: Panel SA-16, Synthesis on Uses of Higher Capacity Buses in Transit Service, TCRP

• Flynn, Jennifer: Member, Committee on Major Activity Center Circulation, TRB

• Goodwill, Jay: Project TCRP B-40, Transitioning Customers from ADA Complementary Paratransit to Traditional Fixed Route Services, TRB; Chair, FPTA Annual Conference

• Gregg, Rob: Coordinator, Florida Transit Planning Network

• Hendricks, Sara: Co-Chair, Telework Council, ACT; Sustainability Initiatives Steering Committee, USF

• Hillsman, Ed: Reviewer, TDM Committee, TRB; Reviewer, Transportation Energy Committee, TRB; Reviewer, Travel Survey Methods & Bicycle Transportation, TRB; Sustainability Energy Subcommittee, USF; Member, Bicycle & Pedestrian Advisory Committee, Hillsborough County MPO

• Hinebaugh, Dennis: Chair, Bus Transit Systems Committee, TRB; Chair, BRT Conference Planning Subcommittee, TRB; Panel D-13, Guide for Implementing Bus on Shoulder Systems, TCRP; Member, BRT Task Force, APTA

• Lin, Pei-Sung: Second Vice President, Newsletter Editor, International Chinese Transportation Professional Association; Technical Committee, 25th Annual Conference in 2012, ICTPA; Chair, Intelligent Traffic Signal Operations Committee, ITE; Executive Committee, Management & Operations/ITS Council. ITE; Member, Transportation Management Center (TMC) Committee, ITE; Member, Traffic Engineering Council, ITE; Member, Traffic Signal Operations Committee, FDOT

• Mistretta, Mark: Friend, Transportation and Sustainability Committee, TRB; Friend, Emerging and Innovative Public Transport Systems and Technology Committee, TRB; Sustainability Transportation Subcommittee, USF

• Morris, William: Member, Marketing and Fare Policy Committee, TRB

• Perk, Victoria: Reviewer, Social/Economics Factors Committee, TRB; Paper Review Chair, Transit Capacity & Quality of Service Committee, TRB; Member, Intermodal Transfer Facilities Committee, TRB; Member, Multimodal Operations Planning Technical Forum, APTA; Instructor, National Transit Institute; Presiding Officer, Transit Capacity & Quality of Service Applications, TRB

• Polzin, Steve: Member, Policy & Planning, APTA; State, Transit, and University Representative, TRB; Presiding Officer, National Transportation Data Requirements & Programs Committee, TRB; Member, Task Force for National Household Travel Survey, TRB; Editorial Board, *Transportation*; Editorial Board, *Journal of Public Transportation*; Oversight Board, Census Transportation Planning Products, AASHTO; Member, Vice-Chair, Board of Directors, HART; Member, Board of Directors, Hillsborough County MPO

• Reep, Amber: Senior Instructor Staff, Federal Transportation Safety Institute; Member, Bus Operations & Bus Safety Working Group, APTA; Member, National Bus Operator Training Standards Committee, APTA; Member, Associate Program Selection Panel, Transportation Safety Institute; Friend, Transportation Education & Training, TRB; Friend, Bus Transit Systems, TRB; NCHRP Project Panel 20-59(43); National Safety & Security Excellence Awards Selection Committee, APTA; Friend, TRB Knowledge Management Committee, TRB; Chair, Florida Operations Network; Member, Advisory Board, Florida Rural Transit Assistance Program Network; Member, Hillsborough Community College Review Task Force (Transit Bus), Hillsborough Community College
• Sapper, Deborah: Member, Public Transportation Safety & Security Task Force, AASHTO; Synthesis Study SA-24, Rail Security: ROW Surveillance Cameras & Vehicle Security Cameras, TRB-TCRP

• Staes, Lisa: Bus Safety Committee, APTA; Research and Technology Committee, APTA; Member, National Peer Review Panel, Instructor’s Course on Paratransit Operations, TSI; Member, TCRP Panel B-36, TRB; Friend, Standing Committee on Rural Public and Intercity Bus Transportation, TRB; Member, Alternative Transportation in Parks & Public Lands National Working Group, FTA; Reviewer, Rural Transit Livability Performance Measures Suitable for Use at the National Level, FTA/TTI; Panel, Synthesis SG-12, Optimizing Bus Warranty, TCRP; Transportation Work Group, American Cancer Society; Peer Reviewer, Oregon Transportation Research and Education Consortium/ Organization

• Taniguchi, Kyle: Young Member, Light Rail Committee, TRB; Member, Scholar Task Force, APTA

• Thole, Cheryl: Secretary, Co-Chair, Environmental Justice in Transportation, TRB

• Volinski, Joel: Member, Research & Technology Committee, APTA; Member, Human Resources Committee, APTA; Member, Legislative Committee, APTA; Transit Ambassador Emeritus, TCRP; Member, Research Proposal Screening Committee, TCRP; Member, Committee on Paratransit, TRB; Friend, Commuter Rail Committee, TRB; Friend, Transit Fare and Marketing Committee, TRB; Friend, Transit Bus Systems Committee, TRB; President, Leadership Alumni Association, APTA; Treasurer, Council of University Transportation Centers Executive Committee

• Winters, Phil: Secretary, Board of Directors, TDMI; Secretary, Transportation Planning Council, ITE; Member Emeritus, TDM Committee, TRB; Sustainability Transportation Subcommittee, USF

Publications and Presentations

NCTR researchers published several papers and made numerous presentations in FY 2012 to share the results of their research.

Publications


• Goodwill, Jay: “Florida’s Multiple Approaches to Addressing Rural Mobility,” Carolina Publishing; (with Reep, Pine) “Improving Bus Transit Safety through Rewards & Discipline,” TCRP Synthesis 97/SF-16

• Hillsman, Ed: (with Sando, Cevallos) “Carbon Footprints for Public Transportation Agencies in Florida,” TRB Compendium; (with Labrador, Tran) “GO! Sync: A Framework to Synchronize Crowd-Sourced Mapping Contributions from Online Communities & Transit Agency Bus Stop Inventories,” 18th ITS World Congress Compendium


• Lin, Pei-Sung: (with Kourtellis, Lee) “Evaluation of Camera-Based Systems to Reduce Bus Side Collisions: Driver Survey,” ITS World Congress Compendium; (with Kourtellis, Lee,
Hsu) “Evaluation of Rear-View Video Systems to Reduce Truck Backing Crashes,” ITE Compendium of Technical Papers

Voilinski, Joel: “Implementation and Outcomes of Fare-Free Transit Systems,” TCRP Synthesis Report 101, Transportation Research Board of the National Academies

Presentations


• Catalá, Martin: “Information Technology Solutions in Aviation: Complexities of Data Sharing Across the Government,” 91st Annual TRB Meeting


• Gregg, Rob: (with Goodwill), “ADA Complementary Paratransit – Where Do We Stand Today?” 37th Florida Public Transportation Association Conference; (with Hibbert, Quigley, Stutts) “FTA Planning and Policy Session,” FDOT/FPTA/CUTR Professional Development Workshop

• Hendricks, Sara: “Meeting the Challenge of the Large Suburban Campus,” NCTR/ACT/Best Workplaces; “Climate Change Planning Implications to TDM,” “Volunteer Driving Programs for Seniors,” ACT 2011 International Conference

• Hillsman, Ed: (with Barbeau) “Emerging Information Tools to Support Worksite Trip Reduction,” ACT 2011 International Conference; (with Sando, Cevallos) “Carbon Footprints for Public Transportation Agencies in Florida,” 91st Annual TRB Meeting; (with Wright) “Show Me the Money, Show Me the Results,” Florida Commuter Choice Summit


• Van Nostrand, Caleb: (with Pinjari, Sivaraman), “Household Level Annual, Long-Distance, Vacation Travel Demand Model: Multiple Discrete-Continuous Choice Framework,” 91st Annual TRB Meeting


Training
During FY 2012, CUTR/NCTR researchers, often in cooperation with FDOT, were active in either providing or facilitating the following training sessions.

**CUTR**
- Effectively Managing Transit Emergencies
- National Transit Database Training
- NTI Advanced Mobility Device Securement

**FDOT/FPTA/CUTR Professional Development Workshop**
- BRT in Florida
- Coaching and Mentoring
- Dealing with Difficult Employees
- Florida Operations Network
- Florida Transit Planning
- FTA Planning and Policy Session
- Grant Writing Techniques
- Managing Transit Emergencies with an Incident Command System
- Marketing by Mode
- Monitoring Your Contractors Compliance to Drug & Alcohol Testing
- National Transit Institute: Securing Community Mobility
- New Data to Support Transit
- Procurement 101
- Public Transit Operations Bus Operator Reward & Discipline Program
- Regional Transit Projects & Mobility Management
- Regulatory Updates in Substance Abuse Management & Program
- Research & Disability Etiquette for Transit Operators Training
- Sustainability Design and LEED Certified Projects
- Transportation Disadvantaged: Medicaid Reform
- Understanding Yourself and Others: One Key to Effective Leadership

**Florida Rural Transit Assistance Program**
- Easter Seals Project Action: Introduction to Travel Training
- National RTAP Procurement Program
- National Transit Institute: Managing Community Mobility
- National Transit Institute: Paratransit Management & Operations
- One-Day Instructor's Course in Paratransit Operations
- Safety Training & Rural Transit (START) Workshop

**Florida Transit Operator Training Program**
- Conflict Avoidance: The Art of Maintaining Control
- Fatigue Awareness for Transit Agencies
- Instructor Course in Excellence
- Instructor's Course in Paratransit Operator Training
- Instructor's Course in Bus Operating Training

**Statewide Transit Training & Technical Assistance Program**
- Bus System Safety
- FTA Drug & Alcohol Program, Compliance Audit Prep
• NTI’s Quality Assurance – Quality Control
• Substance Abuse Management & Program Compliance
• Transit Bus System Safety

**Commuter Choice Webinars/Online Training**
• Car Sharing
• Commuter Choice Support Strategies
• Commuter Tax Benefits
• Establishing Program Goals & Objectives
• Incorporating TDM in Land Development
• Institutional Arrangements Session
• Intro to Parking Management Session
• Intro to Telework
• Measuring Results & Performance
• Overcoming Barriers
• Quantifying the Business Benefits of TDM
• Social Media
• TDM Planning Tools – On The Map
• TDM Planning Tools – TRIMMS
• Transit Service Options
• Trends Affecting Transportation
• Trip Planners

**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. In 2011, the journal was accepted for inclusion in the Web of Science (Social Sciences Citation Index and Journal Citation Reports). Inclusion in this service will help determine the level of impact the journal is having through citations in professional journals throughout the world.

**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**
Net conferences provide a cost-effective method for reaching large groups of transportation professionals in real time, requiring only a telephone, computer, and Internet connections. Collectively, NCTR’s programs such as the National TDM and Telework Clearinghouse, the Best Workplaces for Commuters™ program, and the Transit GIS Clearinghouse combined to offer 21 netconferences in FY 2012. NCTR researchers and industry experts made presentations on CUTR’s bi-weekly webcast series, with 15 of those webcasts featuring an aspect of public transportation.
To provide added value and expand the reach of transit-related netconferences, NCTR secured approval to offer one credit under the certification maintenance program for members of the American Planning Association with AICP credentials.

All NCTR netconferences are available for on-demand viewing after the live presentation from the NCTR website at www.nctr.usf.edu, and CUTR webcast recordings are available at www.cutr.usf.edu. Netconferences and webcasts made in FY 2012 include the following:

- An Assessment of Public Transportation Markets Using NHTS Data Integrating Bikesharing with Public Transportation (3/14/2012)
- Creating Partnerships Through Online Trip Planning and More with National RTAP's GTFS Builder Web App (2/29/2012)
- Flooded Bus Barns and Buckled Rails: Public Transportation and Climate Change Adaptation (9/22/2011)
- Going to School on TDM: What Universities Are Doing for Sustainability (3/27/2012)
- How to Develop a Transit Development Plan (TDP) and Why? (2/23/2012)
- Implementation and Outcomes of Fare-Free Public Transit (12/15/2011)
- Investigation of the Feasibility of Toll and Transit Agency Equity Sharing (11/17/2011)
- Mapping the Structure of Work in Public Transportation (2/9/2012)
- OpenTripPlanner (OTP) and its Deployment at TriMet (5/31/2012)
- Planning for Changing Travel Behavior (8/25/2011)
- Safe Routes to School (10/20/2011)
- Social Equity and Bikesharing (5/3/2012)
- The State of Telework in the U.S. (10/13/2012)
- Tracking Costs of Alternatively-Fueled Buses in Florida (3/8/2012)
- Enhancing Livability in Your Community – Recent Developments in Cost-Effective Multimodal Trip Planners (07/28/2011)
- Transit, Technology, and Public Participation (4/5/2012)
- Travel Behavior Trends in Florida: An Analysis of the National Household Travel Survey Data (6/28/2012)
- Volunteer Transportation: A Generosity-Based Solution to Our Mobility Challenges (12/1/2011)

**NCTR Website** ([www.nctr.usf.edu](http://www.nctr.usf.edu))

NCTR’s website attracted more than 42,000 unique visitors in FY 2012, an increase of 76 percent over the previous fiscal year, all new visitors. The top 15 Web pages visited, listed below, show the public transportation industry’s interest in a diversity of projects and products from NCTR:

1. *Journal of Public Transportation* (full issues, individual articles and submission requirements)
2. National TDM and Telework Clearinghouse (including ridematching systems and commuter tax benefits)
3. “Enabling Cost-Effective Multimodal Trip Planners through Open Transit Data” (report)
4. Information about NCTR-hosted listservs (listservs)
5. Integrating Bikesharing and Transit (webinar)
6. “Analysis of Contracting for Fixed Route Bus Service” (report)
7. Social Equity and Bikesharing (webinar)
8. “Expanding GTFS to Support Operations and Planning” (report)
10. “An Assessment of Public Transportation Markets Using NHTS Data” (report)
11. “Programs That Match Seniors With Volunteer Drivers” (report)
15. Quantifying the Net Social Benefits of Vehicle Trip Reductions: Guidance for Customizing the TRIMMS® Model (report and spreadsheet model)

NCTR continues to be extremely well-positioned on the major search engines. For the key phrase “transit research,” NCTR is ranked #1 on Google, #2 on Bing, and #2 on Yahoo!

**Social Media and Peer-to-Peer Exchanges**

NCTR continues to support its Twitter (@NCTRUSF) account with about 200 followers. Many of the NCTR clearinghouses and programs also actively use Facebook, Twitter, and LinkedIn.

Perhaps the most popular format of communication are the 11 public transportation-oriented listservs, with double-digit percentage increases for nearly all. NCTR has more than 6,200 active subscriptions to its most active public transportation-related listservs, an overall net increase of 800 subscriptions (15%) in FY 2012.

<table>
<thead>
<tr>
<th>Listserv</th>
<th>Type</th>
<th>Subscribers 6/30/12</th>
<th>FY 2012 Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Workplaces for Commuters</td>
<td>Discussion</td>
<td>118</td>
<td>11%</td>
</tr>
<tr>
<td>Bus Fleet Maintenance (BFM-General)</td>
<td>Discussion</td>
<td>368</td>
<td>16%</td>
</tr>
<tr>
<td>Bus Rapid Transit (BRT)</td>
<td>Discussion</td>
<td>549</td>
<td>23%</td>
</tr>
<tr>
<td>Journal of Public Transportation (JPT)</td>
<td>Announcement</td>
<td>511</td>
<td>9%</td>
</tr>
<tr>
<td>Location Aware</td>
<td>Announcement</td>
<td>44</td>
<td>214%</td>
</tr>
<tr>
<td>NCTR</td>
<td>Announcement</td>
<td>1,360</td>
<td>16%</td>
</tr>
<tr>
<td>Parking Management (Parking)</td>
<td>Discussion</td>
<td>315</td>
<td>16%</td>
</tr>
<tr>
<td>Rural Transit Assistance Program</td>
<td>Discussion</td>
<td>132</td>
<td>16%</td>
</tr>
<tr>
<td>Sustainable Transport Indicators (STI)</td>
<td>Discussion</td>
<td>347</td>
<td>50%</td>
</tr>
<tr>
<td>Telework</td>
<td>Discussion</td>
<td>371</td>
<td>3%</td>
</tr>
<tr>
<td>TDM (Transp-tdm)</td>
<td>Discussion</td>
<td>2,100</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>6,215</strong></td>
<td><strong>15%</strong></td>
</tr>
</tbody>
</table>

To subscribe to any of the above listservs, go to [http://lists.cutr.usf.edu/read/all_forums](http://lists.cutr.usf.edu/read/all_forums). All NCTR abstracts, announcements, and listserv postings also are published as RSS feeds, which 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.
Clearinghouses

The **Transit GIS Clearinghouse** is an outcome of the biannual NCTR-sponsored GIS in Transit Conference. The Clearinghouse’s purpose is to share innovative GIS solutions and how they can improve public transportation, and its website seeks to maintain a repository of data and information that keeps professionals abreast of the latest developments, innovations, and research from a holistic point of view. The clearinghouse website is at [http://transitgis.org/](http://transitgis.org/).

The **NCTR National TDM and Telework Clearinghouse** focuses on transportation demand management (TDM). TDM is any action meant to influence the intensity and temporal and spatial distributions of vehicle demand to reduce traffic congestion, increase mobility options, and reduce emissions. Much of what the Clearinghouse does includes the conferences and listservs noted above. NCTR also applies a customer relationship management (CRM) solution to provide intelligent self-service options for people to search frequently-asked questions drawn from 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 conferences.

**Best Workplaces for Commuters** is an NCTR-supported initiative, part of the National TDM and Telework Clearinghouse, designed 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 networking opportunities with peers and experts in the field. Its website can be found at [http://www.bestworkplaces.org](http://www.bestworkplaces.org).

Approximately 300 workplaces of various types, locations, and sizes are members including Apple, Bank of America, The Boeing Company, Centers for Disease Control, Chevron, Cisco Systems, Consumers Union, Discovery Communications, Fairfax County (VA) Government, Girl Scouts of Nassau County, Google, Grand Hyatt New York, IBM, Innova Fairfax Hospital, Lockheed Martin, Mayo Clinic, Microsoft, National Geographic Society, Pfizer, Inc., Stanford University, Tampa Bay Area Regional Transportation Authority, Tindle-Oliver & Associates, U.S. Bancorp, Verizon California, University of Pennsylvania, University of South Florida, Virginia Tech, and Stanford University.

**Patents Awarded**

In the past fiscal year, NCTR researchers and students, in partnership with USF’s Department of Computer Science and Engineering, have been awarded the following 6 patents. Another 11 patents are pending approval.
Wireless Emergency-Reporting System
(United States Patent 8,045,954, issued October 25, 2011)
Inventors: Sean J. Barbeau, Philip L. Winters, Rafael Perez, Miguel Labrador, Nevine Georggi
A bi-directional, location-based multimedia messaging system that enables cell phone users to capture an emergency event as it happens via their camera phone and immediately send video/photos to a dispatcher who sees the media along with the location from which it originated in a map-display. The dispatcher can then send reply messages with photos/videos back to the cell phone users based on their geographic position.

Optimizing Performance of Location-Aware Applications Using State Machines
(United States Patent 8,036,679, issued October 11, 2011)
Inventors: Sean J. Barbeau, Philip L. Winters, Rafael Perez, Miguel Labrador, Nevine Georggi
Software that dynamically adjusts the GPS sampling rate on mobile devices to enable highly-detailed tracking (e.g., a GPS fix every four seconds) while conserving battery life by increasing the sampling rate when the device stops moving. Uses a state machine to manage the uncertainty associated with differentiating actual movement from GPS drift.

Travel Assistant Device
Inventors: Phil Winters, Sean Barbeau, Rafael Perez, Miguel Labrador, Nevine Georggi
A travel assistant device (TAD) to help individuals use transit systems, particularly those with special needs (i.e., physical or mental disabilities), by means of cues delivered through the device. TAD uses a global positioning system (GPS) enabled cell phone to locate the rider, and the positional data are transmitted to a GIS and to one or more interested parties to track the location of the rider. Cues are delivered to the rider to enable him/her to safely and effectively use the transit system without the immediate presence of a guide or parent. TAD has been licensed to DAJUTA, Ltd. http://www.freepatentsonline.com/8138907.pdf

Dynamic Ride Matching System
(United States Patent 8,140,256, issued March 20, 2012)
Inventors: Sasha Dos-Santos, Sean J. Barbeau, Philip L. Winters, Rafael Perez, Miguel Labrador
System with a GIS-based algorithm to match riders for carpools that are traveling on similar routes. Addresses many of the limitations associated with traditional ridematching applications and is unique in its ability to accept trips with schedules that cannot be expressed in terms of a simple recurrence patterns (e.g., Monday through Friday). Use of a shortest path solver enables the ridematching method to perform a search along the path of a user’s trip in addition to the customary radial search around the endpoints. The shortest path solver is also used to calculate the driving distance between the user and a match.

On-Demand Emergency Notification System Using GPS-Equipped Devices
(United States Patent 8,145,183, issued March 27, 2012)
Inventors: Sean J. Barbeau, Philip L. Winters, Rafael Perez, Miguel Labrador, Nevine Georggi, Sasha Dos-Santos
Mobile app and GIS server-side system to automatically determine the cell phone user’s current evacuation zone and real-time evacuation information for that zone.
**Method of Providing a Destination Alert to a Transit System Rider**
(United States Patent 8,169,342, issued May 1, 2012)

*Inventors: Sean J. Barbeau, Philip L. Winters, Rafael Perez, Miguel Labrador, Nevine Georggi, Dmytro Bilov*

Detection method used to alert a rider of a transit system that his/her upcoming bus stop or station is approaching. The method detects upcoming transit stops and alerts the rider to prepare to depart the transit vehicle. Another alert to request a stop at the appropriate time may also be given.


**Conclusion**

At the completion of its 13th year, CUTR’s National Center for Transit Research continues to produce a large volume of high-quality research of practical value to public transportation agencies throughout the country. The results of the research are being effectively distributed through a variety of means, including new electronic techniques that allow fast and flexible access to the information produced by NCTR. The program is helping to cultivate the next generation of transportation professionals by providing opportunities for students who assist in the research being conducted. The vast majority of them are joining public- and private-sector transportation agencies upon graduation. NCTR also contributes to a national interdisciplinary transportation certificate program that will attract students and current practitioners to upgrade their skills and credentials.

NCTR has always enjoyed a strong relationship with the Florida Department of Transportation and is leveraging UTC program funds through partnerships and contracts with transportation authorities and the Federal Transit Administration. The research faculty and students of NCTR look forward to contributing to the rising success of public transportation agencies throughout the nation.

**Financial Summary**

The following charts present the funding sources for FY 2012, the 13th year of the NCTR program, and FY 2012 expenditures based on the key areas of the NCTR Program.

$925,700 (50%)

NCTR Funding Sources
FY 2012

NCTR Expenditures
FY 2012