

# National Center for Transportation Systems Productivity and Management

## Program Progress Performance Report for University Transportation Centers

U.S. Department of Transportation  
Research and Innovative Technology Administration  
Federal Grant Number: DTRT12 G UTC04

**Program Director:** Michael Hunter, Ph.D.  
Associate Professor of Civil and Environmental Engineering  
Georgia Institute of Technology  
760 Spring Street, Atlanta, Georgia 30303  
Email: [michael.hunter@ce.gatech.edu](mailto:michael.hunter@ce.gatech.edu)  
Phone: 404-385-1243

**Program:** National Center for Transportation Systems Productivity and Management  
Georgia Tech Research Corporation  
Phone: 404-385-5135  
DUNS # 09-739-4084 EIN # 58-0603146

**Submitted to:** U.S. Department of Transportation,  
Research and Innovative Technology Administration

**Submission Date:** March 2013

**Reporting Period Start Date:** July 1, 2012

**Reporting Period End Date:** December 31, 2012

**Report Frequency:** Semi-Annual, PPR #2

**Signature of Submitting Official:**



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Michael Rodgers, Ph.D., Deputy Director

March 6, 2013

Date

## Accomplishments

### What are the major goals of the program?

The National Center for Transportation Systems Productivity and Management (NCTSPM), a Tier I University Transportation Center, was founded to facilitate, coordinate and conduct research and educational programs toward the following goals:

- Conduct multi-disciplinary research on topics relevant to the relationship among transportation infrastructure (state-of-good-repair), economic competitiveness and safety
- Disseminate research results and other products of the Center to the transportation community
- Promote transportation education and professional development on topics relating to Center research topics
- Establish a central point of contact and promotion of best practices (e.g., through a web site or list serve) for materials relating to transportation systems performance and management
- Promote diversity in the workforce through active recruitment of women and minority students into degree programs
- Act as a national resource for the debates and discussions that focus on the evolving national transportation program and future directions
- Explore international cooperative activities with research entities in selected countries where similar research interests exist

### What was accomplished under these goals?

Accomplishments for the reported period are discussed below and organized by major center goal.

#### ***Conduct multi-disciplinary research on topics relevant to the relationship among transportation infrastructure (state-of-good-repair), economic competitiveness and safety***

In the reporting period, research was initiated at each of the partner institutions on a variety of topics related to state-of-good repair, economic competitiveness and safety. Research projects were selected and funds allocated through a competitive review process in the spring of 2012 and disbursed to the selected projects. In the summer and fall, the researchers developed research scopes and plans for their projects and conducted regular projects meetings with researchers from across multiple campuses. In the fall of 2012, contracts were signed with the state DOTs to secure matching funding for these projects.

In addition to their responsibilities for coordinating center activities, the NCTSPM staff has devoted significant efforts toward streamlining internal reporting to allow the center to more clearly articulate the impact resulting from the research occurring at each partner institution.

### ***Disseminate research results and other products of the Center to the transportation community***

Two graphic designers were retained to build out a new website for NCTSPM to provide a more attractive and user-friendly method for communicating NCTSPM's research efforts. The target launch date for this new site is early March 2013. As mentioned in PPPR#1, NCTSPM is developing a web-based tool to allow research participants to submit their research, which will provide the basis for additional content. Testing of this system will commence during the next reporting period.

In December, a corporate-style annual report was produced, announcing the research projects, educational sessions, and student internships, scholarships and fellowships which received funding in 2012. The 2012 report was distributed by email to our partners, and hard copies were distributed at the Georgia Tech reception at the TRB conference in January.

As the research projects were started in mid-2012, only limited research results have been produced to date. However, faculty and students are planning to disseminate their findings in conferences and journal publications. For example, researchers at the University of Alabama-Birmingham have submitted abstracts related to UTC research to three professional conferences and two journals.

### ***Promote transportation education and professional development on topics relating to Center research topics***

NCTSPM has begun to lay a solid groundwork for its education and professional development efforts. Each partner institution at NCTSPM provided internships for their students and pursued additional activities to advance transportation education and professional development. In addition, research and students from each partner institution were able to attend the TRB Annual Conference in January 2013 as a result of NCTSPM funding, providing them with the opportunity to expand their network and knowledge base.

In October, Georgia Tech hosted a lecture and discussion with Eno Foundation President and CEO Joshua Schank, on the passage of MAP-21. Georgia Tech is also in the process of planning local programs with the Georgia Center for Integrating Education in Science, Mathematics and Computing (CEISMC). Researchers at Georgia Tech have been helping to plan "Transportation Camp," a forum to exchange and encourage ideas about how users can improve their region's transit services. This event, to be held February 9 2013, is a collaboration between Georgia Tech, a coalition of local software developers, public transit advocates, and the organizations OpenPlans and Imagine Atlanta. It will bring together innovators in public administration, transportation planning and operations, information design, and software engineering. Future education and professional development opportunities at Tech are in the process of being planned; for instance, The Center for Education Integrating Science, Mathematics, and Computing (CEISMC) at Georgia Tech is under contract to conduct two courses this summer.

At the University of Central Florida, research findings are shared with students in the graduate studies curriculum and through seminars and invited lectures at other institutions. Mr. Alex Navarro, a Graduate Research Assistant, was hired to assist with K-12 and STEM initiatives in cooperation with the College of Engineering and Computer Science Diversity office. He is working with students at the elementary school level on transportation engineering through a program called "Project Create" and also working with middle and high school level students by using game called "Reservation road Planner." In the reporting period, Alex Navarro has dedicated approximately 160 hours to these educational initiatives. K-12 visitations to elementary schools promoted transportation education and attract bright youngsters to the profession. Also at UCF, Mr. Mike Dreznes, the Executive Vice President of International Road Federation, delivered a seminar under a joint sponsorship between the CECE Department and CATSS. Mr. Dreznes talk covered the topic of road safety and "Forgiving Highways". He is an international authority on design of guardrails and crash attenuators and IRF has sponsored in the past and continues to sponsor fellows to pursue graduate degrees at UCF. Additionally, as speaker in the "Safer Road by Design Across Six Continents" workshop organized by the International Road federation, Dr. Radwan lectured in days four and five of the ten-day event. Delegates attending the workshop came from eight countries including Zambia, Libya, Mexico, Zambia, Antigua, Sierra Leone, Nigeria, and the USA. Experts from a variety of countries presented best practices and state of the art technologies in Roadside Safety, Work Zone Safety, Vulnerable User Safety, Traffic Management and Road Safety Audits.

Florida International University has developed a new summer course co-taught by four adjunct instructors from the transportation industry.

***Establish a central point of contact and promotion of best practices (e.g., through a web site or list serve) for materials relating to transportation systems performance and management***

NCTSPM has been maintaining [www.utc.gatech.edu](http://www.utc.gatech.edu) as the main source of information about its projects. NCTSPM also hired two graphic designers to build out a new website, [www.nctspm.gatech.edu](http://www.nctspm.gatech.edu), an attractive, user-friendly site which will serve as the central point of contact for communicating NCTSPM's activities. This website will provide information about the research projects, educational offerings, technology transfer and professional development opportunities funded by the NCTSPM. The site is scheduled to launch in early March 2013.

The University of Central Florida's Center for Advanced Transportation Systems Simulation (CATSS) website <http://catss.ucf.edu/> has been utilized to promote and share success stories to the community. Florida International University likewise shares related materials, including publications, research projects, and researcher information, on the Lehman Center for Transportation Research's website <http://lctr.eng.fiu.edu>.

***Promote diversity in the workforce through active recruitment of women and minority students into degree programs***

Georgia Tech is working with Spelman College, a historically black women's college in Atlanta, to offer programs which encourage diversity in transportation education. Also, the courses that The Center for Education Integrating Science, Mathematics, and Computing (CEISMC) at Georgia Tech will offer Summer 2013 will seek to engage underrepresented populations in transportation related careers.

In August 2012, University of Central Florida hosted "Camp Connect," an excellent first step for women and minority recruiting to UCF. UCF plans to continue this work through the newly-hired Alex Navarro, who will visit elementary schools to promote STEM to women and minority students, and who himself is a minority student.

The University of Alabama-Birmingham has put in place plans for a summer program to bring freshman women and minority students to campus to participate in civil engineering and transportation seminars. The goal is to recruit more students to the engineering program. The program will begin in 2013.

Florida International University continues to foster a very diverse student population: about 50% of the students are female and over 80% are minority.

***Act as a national resource for the debates and discussions that focus on the evolving national transportation program and future directions***

All of the research being funded by NCTSPM will make a significant contribution to the body of knowledge regarding the evolving nature of transportation in this country. For instance, one research project is developing an evidence-based planning tool and database that will help agencies plan the development of their asset management programs using the best accumulated evidence. Another research projects is investigating ways that GPS-based truck movement data can contribute to freight demand forecasting. These kinds of project will be important resources for discussions on transportation on a national scale. Researchers working on these projects are leading experts on these issues and are not only contributing to the literature but also actively promoting their work to transportation professionals.

***Explore international cooperative activities with research entities in selected countries where similar research interests exist***

At the University of Central Florida, the Center for Advanced Transportation Systems Simulation (CATSS) has numerous Memorandum of Understanding (MOUs) with universities in the Asia Pacific region, such as Beijing Jiao tong University in China and Ajou University in Korea. These MOUs bring research scholars and bright students to the graduate programs at UCF. Dr. Essam Radwan at UCF was invited to speak at the plenary session of the 3rd Sino-German Symposium on Urban road traffic safety; the 7th symposium on road traffic accident research in China;

IFSTTAR in Paris (October); Hasselt University in Belgium (November); a Distinguished lecturer at NTUA in Greece (November), and a presentation at the ITS World Congress in Vienna (October).

At the University of Alabama-Birmingham, Dr. Uddin is using the UTC funds to leverage an ongoing NSF collaboration on B-WIM with universities in Ireland and the UK. Dr. Sisiopiku is currently exploring a potential research and scholarship collaboration with the Cyprus University of Technology.

## **What opportunities for training and professional development has the program provided?**

Three of the four participating institutions matched students with federal, state and local transportation agencies for summer internships during 2012 and NCTSPM provided funding for graduate students for all of the partner institutions to travel to the TRB Annual Meeting in Washington, D.C.

In October, Georgia Tech hosted a lecture and discussion with Eno Foundation President and CEO Joshua Schank, on the passage of MAP-21. Georgia Tech has also worked with GDOT and the State Road and Tollway Authority and Georgia Department of Transportation to plan the Transportation Research Board's Freeway Operations Committee's midyear meeting which will be held in June in Atlanta. Georgia Tech is also in the process of planning local programs with the Georgia Center for Integrating Education in Science, Mathematics and Computing (CEISMC). Researchers at Georgia Tech have also been helping to plan "Transportation Camp," a forum to exchange and encourage ideas about how users can improve their region's transit services.

At the University of Alabama-Birmingham, professional development short courses are being planned for 2013 and have been budgeted for under the UAB Institutional Grant.

At the University of Central Florida, research findings are shared with students in the graduate studies curriculum and through seminars and invited lectures at other institutions. A Graduate Research Assistant was hired to assist with K-12 and STEM initiatives in cooperation with the College of Engineering and Computer Science Diversity office.

Florida International University developed a new summer course co-taught by four adjunct instructors from the transportation industry.

## **How have the results been disseminated?**

Because most research projects are still in their infancy, results from most projects are not yet available in the open scientific literature and thus most reporting has been through seminars, symposium presentations and various outreach activities.

The 2012 NCTSPM Annual Report was released late in 2012. This document discussed the research projects that were selected, the seminars and educational offerings that were held, and the students who received scholarships, fellowships and internships. This report was distributed electronically to our partners and in hard copy at the GT reception at the TRB Annual Meeting. Additionally, the University of Central Florida has organized the first NCTSPM symposium, to be held February 2013, to provide

researchers and students from all four participating NCTSPM universities an opportunity to share and discuss their research.

## **What do you plan to do during the next reporting period to accomplish the goals?**

This next reporting period promises to be productive. The participating universities will work together to plan workforce development and educational programs, and funded research will continue. In February 2013, the University of Central Florida will be hosting the first UTC symposium. The symposium will attract researchers and students from all four participating NCTSPM universities and is designed to facilitate maximum interaction among all participants.

Georgia Tech is collaborating with software developers, public transit advocates and other partners to hold an interactive conference in February 2013 on the subject of open data and improving their region's transit services. It will bring together innovators in public administration, transportation planning and operations, information design, and software engineering. In June, NCTSPM and the Georgia Tech Civil & Environmental Engineering department (in partnership with the State Road and Tollway Authority and Georgia Department of Transportation), will host the Transportation Research Board's Freeway Operations Committee's midyear meeting in Atlanta. GT will also be planning an additional symposium, to be held in summer or early fall of 2013.

The new NCTSPM website is scheduled to launch in March 2013, and a web-based reporting function will also become available to sub-grantees.

The University of Central Florida plans to expand the visitations to elementary schools in the Orlando area to promote engineering in general and transportation engineering in particular. It also plans to explore summer internship for UCF students at MetroPlan Orlando and the Orlando Orange County Expressway Authority.

The University of Alabama-Birmingham has put in place plans for a summer program to bring freshman women and minority students to campus to participate in civil engineering and transportation seminars. The goal is to recruit more students to the engineering program. The program will begin in 2013. The second round of the student internship program will also be funded in the summer of 2013, providing undergraduate students paid internships at local transportation agencies. Funding will again be provided for UAB students to attend the 2014 TRB Annual Meeting in Washington, DC. UAB faculty is planning to develop 2 professional development short courses in 2013 which will be offered to transportation professionals. UAB is also organizing a technical session at the 2014 annual Alabama Highway Conference to present the results of NCTSPM research. Finally, UAB is planning to award scholarships to deserving women and minority engineering students who are interested in Transportation and themes related to NCTSPM goals.

In addition, two NCTSPM symposia are planned for 2013, and one in 2014, addressing the theme of the Center. The 2013 symposia are scheduled for February 27<sup>th</sup> and April 3<sup>rd</sup>. The February 27<sup>th</sup> symposium is titled “The Built Environment: Health and Livability of Cities.” The April 3<sup>rd</sup> symposium will focus on the “Sustainable Transportation Infrastructure.” Noted national and international speakers will present their research and experiences at these symposia. The 2014 symposium will be devoted to presenting the results of the specific projects funded by the Center.

## Products

- Annual Report

There are no other products, as research is still in the early stages for most projects. An NCTSPM symposium will be held spring of 2013 to present interim findings from many projects.

## Participants and Other Collaborating Organizations

### NCTSPM Participants at Georgia Institute of Technology

The following individuals from Georgia Tech have worked on the NCTSPM at the programmatic level.

Name	<i>Michael Hunter, Ph.D.</i>
Program/Project Role	<i>NCTSPM Director</i>
Number of hours worked during the reporting period	<i>Approximately 525 hrs.</i>
Contribution to Program/Project	<i>Responsible for oversight and governance of the National Center for Transportation Productivity and Management</i>
Funding Support	<i>UTC, GDOT</i>
Collaborated with individual in foreign country	<i>N/A</i>
Country(ies) of foreign collaborator	<i>N/A</i>
Travelled to foreign country	<i>N/A</i>
If traveled to foreign country(ies), duration of stay	<i>N/A</i>

Name	<i>Michael D. Meyer, Ph.D.</i>
Program/Project Role	<i>NCTSPM Center Director (Retired)</i>
Number of hours worked during the reporting period	<i>Approximately 20 hrs.</i>
Contribution to Program/Project	<i>Responsible for oversight and governance of the National Center for Transportation Productivity and Management until his retirement</i>
Funding Support	<i>UTC, GDOT</i>
Collaborated with individual in foreign	<i>N/A</i>

country	
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	Not Related to UTC
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Catherine Ross, Ph.D.</i>
Program/Project Role	<i>NCTSPM Deputy Director</i>
Number of hours worked during the reporting period	<i>Approximately 240 hrs.</i>
Contribution to Program/Project	<i>Responsible for administrative oversight and faculty coordination; liaison to NCTSPM researchers.</i>
Funding Support	<i>UTC, GDOT</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Michael O. Rodgers, Ph.D.</i>
Program/Project Role	<i>NCTSPM Deputy Director</i>
Number of hours worked during the reporting period	<i>Oversees subcontract reporting requirements and research products and is responsible for coordinating technology transfer activities of the center</i>
Contribution to Program/Project	<i>Approximately 250 hrs.</i>
Funding Support	<i>UTC, GDOT</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Randy Guensler, Ph.D.</i>
Program/Project Role	<i>Information Systems Management</i>
Number of hours worked during the reporting period	<i>Approximately 40 hrs.</i>
Contribution to Program/Project	<i>Oversees development and implementation of computer-based tools used in compiling information and reporting.</i>
Funding Support	<i>UTC, GT</i>

Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Mr. Kenneth Stewart</i>
Program/Project Role	<i>UTC Board Liaison</i>
Number of hours worked during the reporting period	<i>Approximately 65 hrs.</i>
Contribution to Program/Project	<i>Liaison between UTC management and Board of Advisors.</i>
Funding Support	<i>UTC, GT</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Ms. Amanda Hall</i>
Program/Project Role	<i>Executive Assistant to Dr. Ross (resigned 8/2012)</i>
Number of hours worked during the reporting period	<i>Approximately 20 hrs.</i>
Contribution to Program/Project	<i>Provided initial administrative management and assistance to Center.</i>
Funding Support	<i>UTC, CQGRD</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Ms. Kenya Wilson</i>
Program/Project Role	<i>UTC Administrative Coordinator (resigned 10/2012)</i>
Number of hours worked during the reporting period	<i>Approximately 320 hrs.</i>
Contribution to Program/Project	<i>Responsible for office management and administrative support of Center; provide research and assistance to Directors and UTC management; maintain website</i>

Funding Support	<i>UTC, CQGRD</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Ms. Audrey F. Leous</i>
Program/Project Role	<i>UTC Research Coordinator</i>
Number of hours worked during the reporting period	<i>Approximately 75 hrs.</i>
Contribution to Program/Project	<i>Responsible for administrative support of Center; coordinate with sub-grantees and contractors</i>
Funding Support	<i>UTC, CQGRD</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

Name	<i>Ms. Susan Sumners</i>
Program/Project Role	<i>Assistant to Civil Engineering department</i>
Number of hours worked during the reporting period	<i>Approximately 40 hrs.</i>
Contribution to Program/Project	<i>Provides administrative support to UTC</i>
Funding Support	<i>CEE, GDOT</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

## NCTSPM University Partner Representatives

These individuals have served as liaisons between NCTSPM and their institutions to organize joint efforts related to research, education, technology transfer, and workforce development. They communicate regularly with the NCTSPM Director via email and teleconference and will continue to be the Director's primary contact at each university.

## University of Alabama, Birmingham

Fouad H. Fouad, Professor and Chair, Department of Civil Construction and Environmental Engineering  
Email: [ffouad@uab.edu](mailto:ffouad@uab.edu)

Name	<i>Fouad H. Fouad, Ph.D.</i>
Program/Project Role	<i>NCTSPM Partner Representative/University of Alabama, Birmingham</i>
Number of hours worked during the reporting period	<i>Approximately 361 hrs.</i>
Contribution to Program/Project	<i>Liaison between UTC and the University of Alabama, Birmingham</i>
Funding Support	<i>UTC, ADOT, UAB</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

## Florida International University

Dr. Albert Gan, Email: [gana@fiu.edu](mailto:gana@fiu.edu)

Name	<i>Albert Gan, Ph.D.</i>
Program/Project Role	<i>NCTSPM Partner Representative/Florida International University</i>
Number of hours worked during the reporting period	<i>Approximately 30 hrs.</i>
Contribution to Program/Project	<i>Liaison between UTC and Florida International University</i>
Funding Support	<i>UTC, FDOT, FIU</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

## University of Central Florida

Dr. Essam Radwan, Executive Director, Center for Advanced Transportation Systems Simulation  
Email: [Ahmed.Radwan@ucf.edu](mailto:Ahmed.Radwan@ucf.edu)

Name	<i>Essam Radwan, Ph.D.</i>
Program/Project Role	<i>NCTSPM Partner Representative/University of Central Florida</i>
Number of hours worked during the reporting period	<i>Approximately 176 hrs.</i>
Contribution to Program/Project	<i>Liaison between UTC and the University of Central Florida</i>
Funding Support	<i>UTC, FDOT, UCF</i>
Collaborated with individual in foreign country	N/A
Country(ies) of foreign collaborator	N/A
Travelled to foreign country	N/A
If traveled to foreign country(ies), duration of stay	N/A

## Advisory Board and Other Collaborators

### The following are members of the NCTSPM Advisory Board:

James Balloun	Financial Investor and Former CEO
Harold Barley	Executive Director, MetroPlan Orlando
Mark Bartlett	FHWA Division Administrator, Alabama
Jeffrey W. Brown	Alabama DOT Bureau Chief, Research and Development
Tom Cousins	Developer
Tread Davis ( <i>Chair</i> )	Lawyer & Board Member, Atlanta Regional Commission
Daniel L. Rodgers	President, Dunn Investment Company
Shirley Franklin	Former Mayor of Atlanta
Michelle Livingston	VP for Supply Chain Distribution, The Home Depot
Todd Long	GDOT Director of Planning
Bill Millar	Past President APTA
Wick Moorman	CEO, Norfolk Southern Railway
Dr. Bud Peterson	President, Georgia Tech, <i>Ex Officio</i>
George Overstreet	Executive Board of the Alabama Trucking Association, VP Operations
Randy Stashick	Global Vice President of Engineering for UPS
Bill Johnson	Port of Miami
Vidya Mysore	Florida DOT
Yvette Taylor	Regional Administrator, FTA

### Other Partnering Organizations:

Georgia Department of Transportation (GDOT)  
Florida Department of Transportation (FDOT)

Alabama Department of Transportation (ADOT)

**Other Collaborators:**

Morehead State University  
Saint Louis University  
Georgia State University  
Georgia Southern University  
Spelman College  
Southern Polytechnic State University

## Impact

### What is the impact on the development of the principal discipline(s) of the program?

NCTSPM has spurred interuniversity collaboration between transportation researchers, provided transportation students with valuable opportunities to learn and practice the profession, and strengthened transportation curriculum for future and current transportation students.

The participating universities have continued to collaborate since the establishment of NCTSPM. The NCTSPM executive committee, representing each of the partner institutions, is regularly in contact, enabling knowledge sharing and relationship-building. Several research projects selected through the competitive process are being conducted jointly by researchers at various institutions. These types of collaboration strengthen the professional network.

Additionally, the partner institutions have developed offerings which directly impact the development of the principal disciplines of the program. The University of Central Florida has planned a symposium that will bring together researchers and students from all universities within this consortium. Florida International University has developed a summer industry course taught by four adjunct professors; providing students with an opportunity to learn from multiple practicing professional engineers. NCTSPM will continue to develop offerings to further impact the development of the transportation profession.

### What is the impact on other disciplines?

The broad scope of the NCTSPM provides an entrée into transportation for researchers who are housed in departments that are not traditionally focused on transportation. This cross-fertilization serves to strengthen both fields. Moreover, there will be impacts to other disciplines and sectors, such as EMS service providers and regional freight planning, through the funded research projects and technology transfer. It has raised awareness of transportation in other fields.

## **What is the impact on the development of transportation workforce development?**

NCTSPM has enabled many students to study, conduct research and hold internships while in school, providing them with an invaluable educational experience. The student internship program has provided an important opportunity for students to be introduced into the workforce, introducing employers to potential future employees and in some cases helping students to secure post-graduation employment. The partner institutions have seen their graduates land employment in engineering consulting firms and government agencies including the Florida Turnpike Enterprise, Florida Department of Transportation, and the Orlando Orange County Expressway Authority, and the Georgia Department of Transportation. Moreover, the efforts of recruiting K-12 students to engineering in general and to transportation in particular has been a satisfying and exciting initiative under this UTC program. These kinds of activities provide important workforce training.

## **What is the impact on physical, institutional and information resources at the university or other partner institutions?**

NCTSPM has been an important catalyst at each university, adding to the credibility and prestige of their respective transportation programs. It has increased the visibility of Civil Engineering and City & Regional Planning across the state university systems, generating recognition for these programs. More specifically, NCTSPM helped the University of Alabama-Birmingham attract a major national figure from the University of Nebraska-Lincoln: Dean Sicking, an internationally-known authority on highway safety research. UAB also recently (in 2012) completed a media room to allow communication with the consortium partners and to facilitate delivery of seminars and workshops of the Center. This room will be heavily used in support of the Center's technical and educational programs. Additionally, research collaborators on the different campuses will be able to discuss their joint research via the videoconference capabilities.

## **What is the impact on technology transfer?**

Each partner institution's state DOT has provided matching funding for technology transfer. NCTSPM has generated interest in diffusion of technology to the mainstream, while also cutting down on the time it takes to carry it out to implementation. Moreover, two symposia are planned for 2013 and one in 2014 to present research findings to the broader transportation profession. Also, researchers have begun to submit abstracts related to NCTSPM projects to professional journals and symposia. These efforts to share technological knowledge and training to researchers across the consortium and practitioners throughout the region will continue in 2013.

## What is the impact on society beyond science and technology?

A major strength of NCTSPM is its focus on economic competitiveness and quality of life. Its broad scope is owed to its multidisciplinary team, which includes not just Civil Engineering but also City & Regional Planning, Economics, and Public Policy. By drawing from research in a variety of disciplines, research at NCTSPM is put into a broader societal context.

Many of the research projects will have impacts beyond science/engineering professions. The project on Optimizing EMS services will hopefully lead to the incorporation of more ITS technologies into EMS response, leading to faster response and transport times and better patient outcomes. The project related to freight planning will have major impacts to the urban and regional planning agencies, providing them with a tool to estimate freight movement that they have long been lacking. The project related to assessing the impacts of doubling heavy vehicle loads will, in the end, impact the trucking and commercial freight industries. Likewise, the project related to safety impacts of electronic billboards may ultimately have impacts to the advertising industry.

## Changes/Problems

**Changes in approach and reasons for change:** *Nothing to Report*

**Actual or anticipated problems or delays and actions or plans to resolve them:** *In the fall of 2012, Kenya Wilson and Amanda Hall resigned from Georgia Tech. Audrey Leous was hired in December as the research coordinator. Additionally, there was a delay in getting funding accounts set up at the member universities. As a result, many of the projects were delayed by several months. Research teams are working to follow original schedules as closely as possible; however it has been necessary to modify schedules for several projects.*

**Changes that have a significant impact on expenditures:** *Nothing to report*

**Significant changes in use or care of human subjects, vertebrate animals and/or biohazards:** *Nothing to Report*

**Change of primary performance site location from that originally proposed:** *Nothing to Report*

## Special Reporting Requirements

### Specific Requirements

**Website:** Created and operational. Redesign will be live early March.

**Directory of Key Personnel:** Information available on the program website.

**Financial and Annual Share Reports:** The SF425 requirements will be met by separate report.

**FFATA Sub award and Executive Compensation Report:** Will be met by separate submission

**Research Project Descriptions:** Available on program website. The projects selected and funded by the center are provided below.

## Ongoing Research Projects

<b>Project Title</b>	<b>University</b>	<b>PI</b>
Integrating Safety in Developing a Variable Speed Limit System	UCF	Mohamed Abdel-Aty
Mobile Technology Usage amongst the Transit-Riding Populace	GT	Kari Watkins
Reducing Service Interruptions in Linear Infrastructure Systems (Transportation and Water/Sewer) by Synchronizing Schedules for Selected Maintenance Activities	FIU	Berrin Tansel
Performance Measurements of Transportation Systems based on Fine-Grained Data Collected by AVI and AVL Systems	FIU	Mohammed Hadi
Full-Scale Wall of Wind Testing of Variable Message Signs (VMS) Structures to Develop Drag Coefficients for AASHTO Supports Specifications	FIU	Arindam Chowdhury
Information Services in Social Networked Transportation	GT	Hans Klein
Traffic Management Centers: Challenges, Best Practices, and Future Plans	FIU	Xia Jin
Digital Advertising Billboards and Driver Distraction	UAB	Virginia Sisiopiku
Impact and Feasibility Study of Solutions for Doubling Heavy Vehicles	UAB	Nasim Uddin
Optimizing EMS Through The Use of Intelligent Transportation Systems (ITS) Technologies	UAB	Andrew Sullivan
Efficient Utilization of the Existing Its System and the Viability of a Proactive Traffic Management System for the Orlando-Orange County Expressway Authority System	UCF	Mohamed Abdel-Aty
Evidence-Based Design Applications in Transportation Asset Management	GT	Adjo Amekudzi
Bringing Freight Components into Statewide and Regional Travel Demand Forecasting	GT	David Lee
Development of Risk Management Strategies for State DOTs to Effectively Deal with Volatile Prices of Transportation Construction Materials	GT	Baabak Ashuri
Freight movement, port facilities, and economic competitiveness	GT	Catherine Ross
Economic Development and Workforce Impacts of State DOT Expenditures	GT	Danny Boston
Factors Influencing Visual Search in Complex Driving Environments	GT	Mike Hunter
Next-Generation Wireless Bridge Weigh-in-Motion (WIM) System Incorporated with Nondestructive Evaluation (NDE) Capability for Transportation Infrastructure Safety	GT	Yang Wang
Micro-Dynamics of Business Location and Growth and its Effects on the Transportation Network and Congestion in Georgia and the Southeast Region	GT	Frank Southworth
Automated Data Collection for Origin/Destination Studies of Freight Movement	UCF	Amr A. Oloufa
Enhanced Role of Activity Center Transportation Organizations in Regional Mobility	GT	Angshuman Guin
Georgia SPLOST Database and Clearinghouse for Transportation Finance	GT	Catherine Ross
GRTA/GDOT Real-Time Tracking and Choice Data	GT	Randall Guensler

## NCTSPM Student Summer Internship Programs

During summer 2012 there are twenty-five graduate students from four institutions participating in summer internships with transportation, transit and planning agencies across the southeast. Outcomes from these internships will be featured in upcoming NCTSPM newsletters and annual reports. The participants (where available) and their assignments are given below:

### Georgia Institute of Technology

Andrew Babb, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Margaret Carragher, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Matthew Crane, Civil Engineering, Georgia Department of Transportation  
Alexanda Frackleton, Civil Engineering, City of Atlanta  
Darren Harris, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Arnold Huguet, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Amy Ingles, Civil Engineering, Atlanta Regional Commission (MPO)  
Brian Maddox, Civil Engineering, Federal Transit Authority  
Jamie Montague, Civil Engineering, Georgia Regional Transportation Authority  
Alex Poznanski, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Denise Smith, Civil Engineering, Atlanta Regional Commission (MPO)  
Amanda Wall, Civil Engineering, Metropolitan Atlanta Rapid Transit Authority  
Richard Wilson, Civil Engineering, Georgia State Road and Toll Authority

### University of Georgia

Anna Shoji, Geography, Metropolitan Atlanta Rapid Transit Authority

### Florida International University

Eileen Cabrera, Transportation Engineering, Florida Dept. of Transportation (District 4)  
Anita Pourji, Transportation Engineering, Miami-Dade County Dept. of Public Works  
Elizabeth Muir, Transportation Engineering, Florida Dept. of Transportation (District 6)

### University of Alabama at Birmingham

- *Alabama Department of Transportation (3<sup>rd</sup> Division Office)*  
Students will assist with plan reviews, cost estimating, and field inspection of ALDOT construction projects.
- *The Regional Planning Commission of Greater Birmingham*  
Students will assist in the development of regional transportation planning models, collect and analyze transportation and demographic data, and assist in the preparation of the Transportation Improvement Program.
- *The Birmingham-Jefferson County Transportation Authority*  
Students will assist the Birmingham transit authority with ridership data collection and analysis, route assessments, and maintenance records.