



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
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Program Director: Michael Hunter, Ph.D.
School of Civil and Environmental Engineering
Georgia Institute of Technology
760 Spring Street, Atlanta, Georgia 30303
Email: 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
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Signature of Submitting Official:

May 15, 2015

Michael Hunter, Ph.D.

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

NCTSPM supports multi-disciplinary research. Some projects simultaneously address infrastructure and safety and others deal with safety and infrastructure and several projects address all 3 of our themes. Our researchers represent a variety of disciplines: civil engineering, urban planning, economics, public health, and public policy.

A full listing of NCTSPM-funded research projects can be found at the end of this report.

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

NCTSPM posts research updates to its website on a regular basis. A Project Information Form for each project is posted on the website, as well as related documents including pictures, posters, presentations and other relevant information. Information on NCTSPM's research is also posted to the Georgia Tech Transportation Alumni group on LinkedIn and on the Georgia Tech Civil Engineering website.

Researchers also are in frequent contact with practitioners to convey the results of their work and assist them with implementation. For example, FIU researchers coordinated directly with the FDOT Structures Research Center on experimental work and results regarding progress on the development and design of bridge deck systems and are exploring opportunities to perform a trial installation of their system.

Another researcher has been working with practitioners at the Miami-Dade Water and Sewer Department (MDWASD) to disseminate the results of her research project “Reducing Service Interruptions in Linear Infrastructure Systems (Transportation and Water/Sewer) by Synchronizing Schedules for Selected Maintenance Activities” and is now serving on the selection committee for an RFP they solicited for developing a strategic maintenance program.

A Georgia Tech researcher delivered a training session to transportation practitioners. "Managing Pavement Assets Cost-Effectively Using COPACES-CC" was delivered at the Georgia DOT training center, through GDOT’s Local Technical Assistance Program (LTAP). This training was for employees of local governments to learn how to use a tool to help local governments maximize the performance of their paved assets and save money. Georgia Tech also organized a research poster session held at the Georgia Department of Transportation including results from many NCTSPM match projects.

In 2014, NCTSPM produced a number of research reports and journal publications, and presented conference proceedings, invited presentations/lectures on research findings, workshops, seminars, and webinars held on various research projects. More than 30 refereed journal and professional publications were submitted/accepted in 2014, to a variety of journals. Our researchers delivered nearly 100 presentations including conference proceedings, invited presentations/lectures, workshops, seminars, and webinars held on research projects. See page 9 for a full listing.

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

NCTSPM actively promotes education and professional development.

A total of 45 transportation-related courses at FIU, UAB, UCF and GT were offered in 2014. The table below shows the number of students that were involved in research and educational efforts:

Number of UTC-supported graduate students	79
Number of UTC-supported graduate degrees awarded	16
Number of graduate students placed in transportation-related positions	21
Number of students provided with internships	7
Students participating in K-12 initiatives	126
Student awards and honors	18

As an example of NCTSPM activities, FIU developed and conducted a two-week summer transportation camp for 14 high school students in July 2014 featuring field trips, field data collection, group projects and presentations, and covering topics on driving simulation, traffic simulation, ITS, transportation planning, and public transportation. The camp was designed to introduce high school students to transportation engineering applications and transportation careers, in addition to helping students plan and prepare for college. The camp also provided students with opportunities for classroom instruction, hands-on lab experiences, trips into the field, and group presentations and projects, giving them the chance to learn about the process of controlling traffic, reducing congestion, and improving safety.



During the summer of 2014, UAB conducted the second annual Summer Enrichment program. 10 minority students participated in the program. Additionally, the middle school *Youth Champions Program* has provided education and learning activities related to transportation for approximately 52 middle school students.

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

The [NCTSPM website](#) remains the main point of contact and promotion of best practices.

In the reporting period, the website received more than 7,000 web views and nearly 3,000 first time visits.

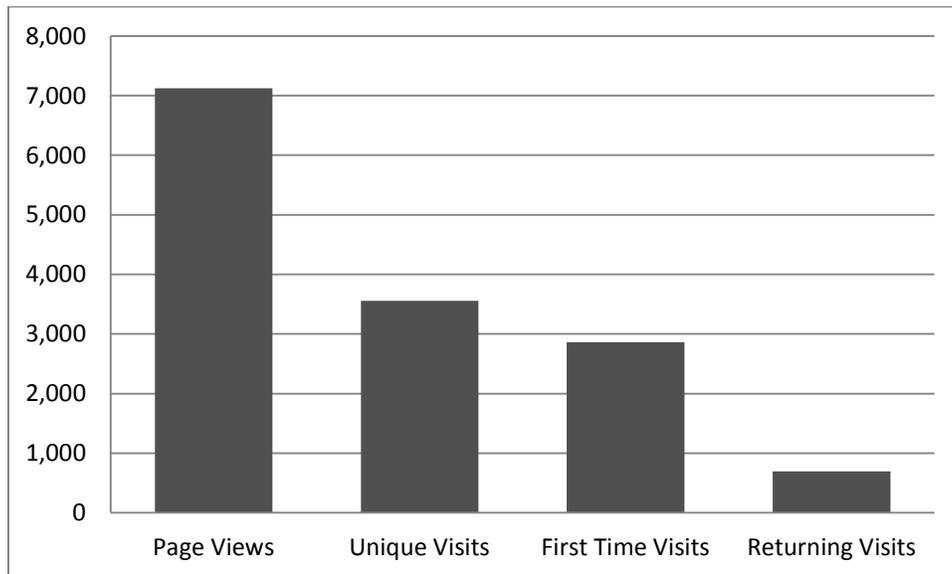
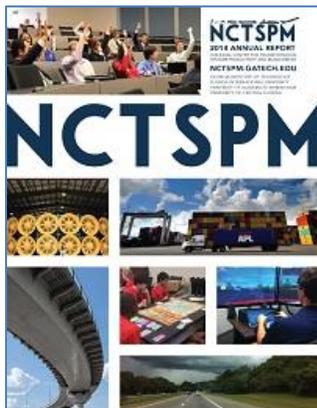


Figure 1. Web traffic during reporting period



Figure 2. Distribution of website visitors in reporting period

In addition to the website, NCSTPM also communicates its research efforts through publications such as the Annual Report and an e-newsletter.



The [2014 NCTSPM Annual Report](#) was produced in the fall of 2014. The report provides an overview of 2014 center activities, including research, education, and technology transfer. It was distributed to our university partners, the UTCs, state DOTs, the NCTSPM Board of Advisors, attendees at Georgia Tech’s TRB reception and the 2015 Southeast UTC Conference.

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

During the reporting period, each university took action to recruit women and minority students into the programs and provide them with opportunities for professional development. Activities included:

- During the summer of 2014, UAB conducted the second annual Summer Enrichment program. 10 minority students participated in the program.

- At UCF a female PhD student worked as a research assistant; a male Hispanic student received an MS degree through the support of the center; and an African American student started his graduate studies.
- FIU recruited three minority undergraduate students for NCTSPM internships at local transportation agencies. 13 minority high-school students participated in FIU's 2-week summer transportation camp.
- GT recruited 6 female students, and 5 minority students with NCTSPM support.

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

NCTSPM's central office at Georgia Tech hosted seven seminars during the reporting period, bringing in a variety of speakers, including Georgia State Senator Steve Gooch to speak on legislative considerations for current transportation issues in Georgia. In addition, Florida International University hosted three seminars, inviting speakers from academia as well as from private practice.

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

Many of our researchers are collaborating and presenting their work internationally.

Several PI's from FIU (Drs. Xia Jin, Amir Mirmiran, Atorod Azizinamini, David Shen, Yan Xiao, Fabian Cevallos Albert Gan), together with two FDOT transportation officials, developed and delivered a one-week workshop for a 20-person Chinese Delegation in October 2014. The workshop covered topics on traffic safety, ITS, transportation financing, wind engineering, bridge engineering, driving simulation, demand modeling, and public transportation. In addition, a student from France participated in research activities on reducing interactive service interruptions in linear infrastructure systems during summer 2014.

Dr. Nasim Uddin (UAB) is using the UTC funds to leverage an ongoing NSF collaboration on B-WIM with universities in Ireland and the UK. Dr. Viginia Sisiopiku (UAB) is currently exploring a potential research and scholarship collaboration with the Cyprus University of Technology.

Dr. Kari Watkins (GT) presented at ITS World Congress, moderating the session "The Internet Paradigm and ITS"; her students presented "Managing traffic using third-party data: Are TMC's ready?" and "Real-time transit passenger information: A case study in standards development", both based directly on the work they conducted through the PI's project. Dr. Watkins also presented in the session "What are the Effects of Open Data on Public Transportation."

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

In 2014, more than 120 students participated in NCTSPM research projects. This provides them with valuable training. Some gained field experience via data collection for research projects, while many others gained experience conducting data analysis.

Additionally, the summer programs and internship supported by NCTSPM also provide students with training and exposure to transportation careers. 126 students participated in the educational K-12 programs, and more than 20 students were placed in transportation-related positions. Students were educated on a variety of transportation topics through classroom instruction, hands-on lab experiences, field trips and group presentations.

How have the results been disseminated?

The [NCTSPM website](#) remains the main point of contact and promotion of best practices. During the reporting period, an updated Project Information was posted for each research project. Related documents, such as presentations, pictures and posters, have been also uploaded when available. Researchers have produced a number of technical papers and presentations to disseminate their work. Our researchers delivered nearly 100 presentations in the forms of conference proceedings, invited presentations/lectures, workshops, seminars, and webinars held on research projects. Many of these presentations are conducted at conferences. Our researchers are also prolific publishers. More than 30 refereed journal and professional publications were submitted/accepted in 2014, to a variety of publications.

Journals

- Accident Analysis & Prevention
- ASCE Journal of Composites for Construction
- IEEE Transactions on Intelligent Transportation Systems
- International Journal of Engineering Research and Development
- Journal of Civil Engineering and Architecture
- Journal of Engineering Structures
- Journal of Public Transportation
- Journal of Safety and Security
- Journal of Safety Science
- Journal of the Air and Waste Management Association
- Journal of Transport Geography
- Research in Transportation Business & Management
- Traffic Injury Prevention
- Transport Policy
- Transportation Research Record

Conferences

- 1st International Conference of Calcined Clays for Sustainability of Concrete
- 2nd T&DI Congress, Transportation and Development Institute (T&DI), American Society of Civil Engineers
- 2nd Transportation and Development Institute, ASCE
- 4th International Roundabout Conference
- 4th International Symposium on Life-Cycle Civil Engineering, IALCCE
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- Innovation in Mobility Public Policy Summit
- Intelligent Transportation Systems Professional Capacity Building Program's T3 Webinar
- ITS Georgia
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- Talking Technology and Transportation (T3) Webinar
- t-HUB Workshop
- University Transportation Center (UTC) Conference for the Southeastern Region
- World Environmental and Water Resources Congress

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

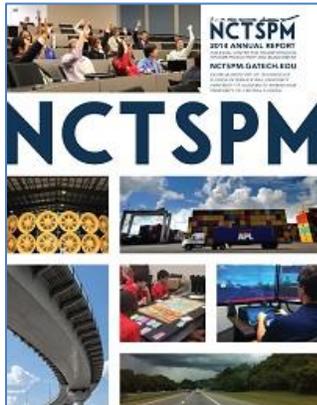
Research will continue on the active NCTSPM projects; the projects' project information forms provide detailed work plans. Final reports are expected for a number of projects.

There are a number of important initiatives planned for the first half of 2015 at UAB. The next round of the student internship program will be funded, providing undergraduate students paid internships at local transportation agencies. UAB is also organizing a technical session at the annual Alabama Highway Conference to present the results of NCTSPM research. Finally, UAB will continue planning for the regional UTC conference to be held in Birmingham in March 2015. Researchers from all universities will attend the TRB Annual Meeting and Southeast UTC Conference in Birmingham, AL.

Georgia Tech will host six seminars during the spring semester of 2015 under NCTSPM sponsorship.

Products

The center's website, <http://nctspm.gatech.edu> continues to be updated regularly with updates on research projects, educational initiatives, and news related to NCTSPM researchers.



In 2014, NCTSPM produced an [Annual Report](#), which provided an overview of 2014 center activities, including research, education, and technology transfer. It was distributed to our university partners, the UTCs, state DOTs, the NCTSPM Board of Advisors, attendees at Georgia Tech's TRB reception and the 2015 Southeast UTC Conference.

Our researchers have produced a number of technical papers and presentations to disseminate their work. Our researchers delivered nearly 100 presentations in the forms of conference proceedings, invited presentations/lectures, workshops, seminars, and webinars held on research projects. Many of these presentations are conducted at conferences. Our researchers are also prolific publishers. More than 30 refereed journal and professional publications were submitted/accepted in 2014, to a variety of publications.

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Conferences

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- Intelligent Transportation Systems
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 - Journal of Civil Engineering and Architecture
 - Journal of Engineering Structures
 - Journal of Public Transportation
 - Journal of Safety and Security
 - Journal of Safety Science
 - Journal of the Air and Waste Management Association
 - Journal of Transport Geography
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 - Transportation Research Record
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 - AlaSim Conference
 - American Planning Association National Conference
 - Annual Transportation Research Board Meeting
 - APTA Bus and Paratransit Conference
 - Florida Statewide Access Management Coordination National Webinar
 - GDOT/GTI Transportation Research Poster Session
 - Georgia/Carolinas PCI Meeting
 - IEEE International Conference on Image Processing
 - Innovation in Mobility Public Policy Summit
 - Intelligent Transportation Systems Professional Capacity Building Program's T3 Webinar
 - ITS Georgia
 - SPIE, Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security
 - Talking Technology and Transportation (T3) Webinar
 - t-HUB Workshop
 - University Transportation Center (UTC) Conference for the Southeastern Region
 - World Environmental and Water Resources Congress

Participants and Other Collaborating Organizations

NCTPSM 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 312 hours</i>
Contribution to Program/Project	<i>Responsible for oversight and governance of NCTSPM</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>Catherine Ross, Ph.D.</i>
Program/Project Role	<i>NCTSPM Deputy Director for Policy, Education and Workforce Development</i>
Number of hours worked during the reporting period	<i>Approximately 60 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 for Research and Technology Transfer</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 270 hours</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>Ms. Audrey F. Leous</i>
Program/Project Role	<i>Research Program Coordinator</i>
Number of hours worked during the reporting period	<i>Approximately 800 hrs.</i>
Contribution to Program/Project	<i>Provided administrative management and assistance to Center.</i>
Funding Support	<i>UTC</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. Marjorie Jorgenson</i>
Program/Project Role	<i>Transportation Faculty Assistant</i>
Number of hours worked during the reporting period	<i>Approximately 160 hrs.</i>
Contribution to Program/Project	<i>Provide assistance to Director and Research Coordinator for UTC management</i>
Funding Support	<i>GT</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>

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. These met with the NCTSPM Director and Deputy Director, via teleconference, in an initial kick-off meeting in order to establish governing parameters for the management and coordination of the center’s research and activities. They also coordinated submissions of proposals and cost sharing from their respective institutions and were members of the proposal selection committee. Subsequently, these individuals served to facilitate the subcontracting process within their institutions.

University of Alabama, Birmingham

Fouad H. Fouad, Professor and Chair, Department of Civil Construction and Environmental Engineering
 Email: 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 15 hours</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	<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>

Florida International University

Dr. Albert Gan, Email: 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>200 hours on (1) development, coordination, administration, and teaching of a two-week Summer Transportation Camp; (2) recruitment and administration of student internship program.</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

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>Completed approximately 100 hours in activities related to research, education, and administration activities.</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:

Tread Davis – Lawyer and Board Member, Atlanta Regional Commission (Chair)
James Balloun – Financial Investor and Former CEO (Past Chair)
Harry L. Anderson - Senior Vice President, Global Business and Technology Services, The Coca-Cola Company
Harold Barley – Executive Director, MetroPlan Orlando
Mark Bartlett – FHWA Division Administrator, Alabama
Jeffrey W. Brown – Alabama DOT Bureau Chief, Research and Development
Russell McMurry – GDOT Commissioner
Bill Johnson – Director, Port of Miami
Michelle Livingstone – Vice President for Supply Chain Distribution, The Home Depot
Todd Long – GDOT Deputy Commissioner
Wick Moorman – CEO, Norfolk Southern Railway
George Overstreet – Executive Board Member of the Alabama Trucking Association, Vice President of Operations
G. P. “Bud” Peterson – President, Georgia Tech, Ex Officio
Daniel L. Rodgers – President, Dunn Investment Company
Randy Stashick – Global Vice President of Engineering, UPS
Yvette Taylor – Regional Administrator, FTA
Dave Williams – Vice President of Infrastructure and Government Affairs, Metro Atlanta Chamber of Commerce

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
Southern Polytechnic State University

Impact

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

Our research is producing results that contribute to the body of knowledge regarding transportation safety, economic competitiveness, and state of good repair. Research results are disseminated through publications and presentations, with the potential to impact transportation practitioners well beyond the southeast region.

Our researchers also collaborate with state DOTs, regional planning commissions, and other transportation agencies, informing work that is being done at these agencies. For example, the research team investigating “Bringing Freight Components into Statewide and Regional Travel Demand Forecasting” are working with several regional planning commissions, which may improve their in-house modeling. Likewise, many of our researchers are collaborating with their state DOTs, which may enhance DOT work. For instance, researchers at FIU are working closely with FDOT to develop a tool to enable DOT district offices to easily utilize the Highway Safety Manual. Researchers are also conducting research to help their DOT’s evaluate and maintain the health of vital infrastructure, such as bridges, signage and pavement. These studies may help eliminate the types of structural failures that DOTs have experienced in the past. NCTSPM partner institutions are becoming recognized as leaders in the use of advanced materials for repair and retrofit of nation’s infrastructure.

What is the impact on other disciplines?

The interdisciplinary nature of NCTSPM’s work impacts disciplines beyond transportation engineering. Our work spans public policy, public health, and economics. For instance, several projects focus on freight movement; these studies not only inform the discipline of transportation engineering, but also the disciplines of supply chain management and regional economics. “Optimizing EMS Through The Use of Intelligent Transportation Systems (ITS) Technologies” impacts the discipline of health; “Reducing Service Interruptions in Linear Infrastructure Systems (Transportation and Water/Sewer) by Synchronizing Schedules for Selected Maintenance Activities” deals with environmental engineering. These researchers are publishing in non-transportation-centered publications and presenting at non-transportation-focused conferences. The UTC funding is a critical part of producing this multidisciplinary work.

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

NCTSPM places a heavy emphasis on workforce development. Each partner university engages in a variety of activities to support this work.

In 2014, 120 students were involved in our research projects, providing them with valuable experience in transportation research. More than 50 of these students received funding to conduct research in areas related to the NCTSPM goals, and 16 of those students received graduate degrees.

Other workforce development-related metrics include:

Number of UTC-supported graduate students	79
Number of UTC-supported graduate degrees awarded	16
Number of graduate students placed in transportation-related positions	21
Number of students provided with internships	7
Students participating in K-12 initiatives	126
Student awards and honors	18
Number and participation in transportation professional seminars and workshops	1169

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

Nothing new to report.

What is the impact on technology transfer?

Technology transfer is an important component to our program. Many of our research projects have a focus on being applied, so that transportation agencies can readily apply them to their own work.

The main vehicle for technology transfer is presentations delivered by our researchers. In 2014, our researchers delivered nearly 100 presentations in the forms of conference proceedings, invited presentations/lectures, workshops, seminars, and webinars held on research projects.

Many of these presentations are conducted at conferences. In 2014, our researchers presented at the following:

- 1st International Conference of Calcined Clays for Sustainability of Concrete
- 2nd T&DI Congress, Transportation and Development Institute (T&DI), American Society of Civil Engineers
- 2nd Transportation and Development Institute, ASCE
- 4th International Roundabout Conference
- 4th International Symposium on Life-Cycle Civil Engineering, IALCCE
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- Florida Statewide Access Management Coordination National Webinar
- GDOT/GTI Transportation Research Poster Session
- Georgia/C Carolinas PCI Meeting
- IEEE International Conference on Image Processing

- Innovation in Mobility Public Policy Summit
- Intelligent Transportation Systems Professional Capacity Building Program's T3 Webinar
- ITS Georgia
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- IEEE Transactions on Intelligent Transportation Systems
- International Journal of Engineering Research and Development
- Journal of Civil Engineering and Architecture
- Journal of Engineering Structures
- Journal of Public Transportation
- Journal of Safety and Security
- Journal of Safety Science
- Journal of the Air and Waste Management Association
- Journal of Transport Geography
- Research in Transportation Business & Management
- Traffic Injury Prevention
- Transport Policy
- Transportation Research Record

A Georgia Tech researcher delivered a training session to transportation practitioners. "Managing Pavement Assets Cost-Effectively Using COPACES-CC" was delivered at the Georgia DOT training center, through GDOT's Local Technical Assistance Program (LTAP). This training was for employees of local governments to learn how to use a tool to help local governments maximize the performance of their paved assets and save money. Georgia Tech also organized a research poster session held at the Georgia Department of Transportation including results from many NCTSPM match projects.

Another researcher has been working with practitioners at the Miami-Dade Water and Sewer Department (MDWASD) to disseminate the results of her research project "Reducing Service Interruptions in Linear Infrastructure Systems (Transportation and Water/Sewer) by Synchronizing Schedules for Selected Maintenance Activities" and is now serving on the selection committee for an RFP they solicited for developing a strategic maintenance program.

In the reporting period, UAB worked on planning the 2015 Regional UTC Conference for the Southeast Region, which they will host in Birmingham in March 2015. The conference planning has been a collaboration between UAB and Mississippi State University. NCTSPM faculty and graduate students will present their NCTSPM research and findings.

What is the impact on society beyond science and technology?

We expect several projects will have impacts beyond the science/engineering professions.

“Bringing Freight Components into Statewide and Regional Travel Demand Forecasting” has already demonstrated improvements over traditional freight models and we will continue to pursue implementation of the tour-based model in Birmingham. This could lead to better freight facilities for private carriers. Goods movement will also be impacted by the results of “Automated Data Collection for Origin/Destination Studies of Freight Movement,” as it has the potential to reduce the cost of transporting goods.

“Impact and Feasibility Study of Solutions for Doubling Heavy Vehicles” will, in the end, impact the trucking and commercial freight industries.

“Digital Advertising Billboards and Driver Distraction” may ultimately have impacts to both State DOT’s as well as the advertising industry.

Changes/Problems

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

The project “Automated Data Collection for Origin/Destination Studies of Freight Movement” experienced an unexpected increase in costs for installation of system due to impossibility of forecasting correct costs prior to project start. The project “A Comprehensive Investigation of Visibility Problems on Highways” experienced a delay due to the delay in obtaining the MiniSim driving simulator.

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 in 2013; continues to be updated regularly as new information becomes available

Directory of Key Personnel: Information available on the program website and updated as needed

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

FFATA Subaward 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.

Projects Selected for Funding by NCTSPM

Project Title	Lead Uniy	Principal Investigator
Integrating Safety in Developing a Variable Speed Limit System	UCF	Mohamed Abdel-Aty
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
Development of a Prototype Evidence-Based Database and Planning Tool: Applying Performance Management Principles in Asset Management Program Development	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 and Economic Competitiveness from the Megaregion Perspective	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
Evaluation of Signage Alternatives for Express Lane Facilities	FIU	Albert Gan
Innovative Modular High Performance Lightweight Decks for Accelerated Bridge Construction	FIU	Amir Mirmiran
Field Validation of a Drive-By Bridge Inspection System with Wireless BWIM + NDE Devices	GT	Yang Wang
Development of a Web-based Decision Making Tool for the Highway Safety Manual Implementation	FIU	Priyanka Alluri

A Data Driven Approach to State Transportation Investment Decisions: a Transportation Project Investment and Evaluation Resource (T-Pier)	GT	Timothy F. Welch
Freight impacts on Small Urban and Rural Areas	GT	Catherine Ross
HOV to HOT Conversion Impacts on Carpooling	GT	Yanzhi "Ann" Xu
Consumer Response to Road Pricing: Macro and Micro Modeling Tools for Socioeconomic Evaluation and Pricing of Managed Lanes	GT	Randall Guensler
Evaluation of the Cost Effectiveness of Illumination as a Safety Treatment at Rural Intersections	GT	Angshuman Guin
Assessment of High Early Strength Limestone Blended Cement for Next Generation Transportation Structures	GT	Kimberly Kurtis
Managing Transportation System Health: Setting Performance Targets and Policies in Non-Uniform Regions and Jurisdictions to Achieve Uniform Statewide and National Objectives	GT	Adjo Amekudzi
Extending HYRISK to Predict Scour Risk as a Function of Soil Erodibility Characteristics	GT	Laurie Garrow
Cooperative Vehicle-Highway Automation (CVHA) Technology: Simulation of Benefits and Operational Issues	GT	Michael Rodgers
Next Generation Crack Sealing Planning Tool for Pavement Preservation	GT	James Tsai
Estimating the Monetary Benefits of Reducing Delays on Heavily Trafficked Truck Freight Corridors in Georgia	GT	Frank Southworth
A Comprehensive Investigation of Visibility Problems on Highways: Developing Real Time Monitoring and Prediction System for Reduced Visibility and Understanding Traffic and Human Factors Implications	UCF	Mohamed Abdel-Aty
Evaluating the Impact of Real-time Transit Passenger Information on Ridership and Mode Share	GT	Kari Watkins
Bridge Rail Design Procedures	UAB	Dean Sicking
Evaluation of Anchor Bolt Clearance Discrepancies	UAB	Ian Hosch
Examining the Value of Travel Time Reliability for Freight Transportation to Support Freight Planning and Decision-Making	FIU	Xia Jin