collaboration is everything
STRIDE’s institution of the regional UTC conference, to which are invited not only STRIDE consortium members but all UTCs and state DOTs within the region, has fostered increased community and coordination vital to state and university research programs for leveraging their collective expertise and research efforts. STRIDE’s spirit of collaboration and excellence has made its partnership with FDOT effortless and successful. Its research in the areas of safety, managed lanes, and reliability, and more recent and upcoming work on advanced corridor management and autonomous vehicles, is providing and promises to provide great benefit of state, regional, and national interest.

—Darryll Dockstader, Manager, FDOT Research Center

Cover picture: John Kirby, NCDOT; William Barstis, MDOT; J. Darryll Dockstader, FDOT; Jeffery Brown, ALDOT; Georgine Geary, GDOT; Fouad H. Fouad, Univ. of Alabama at Birmingham, at the 2nd Annual UTC Conference for the Southeastern Region held in Atlanta, Ga.
Dear Colleagues,

Collaboration is indeed everything and key to the success of the STRIDE Center and to the mission of the USDOT/RITA University Transportation Centers as a whole. When a group of eight universities in the Southeastern region of the U.S. come together to resolve transportation-related issues, when researchers from these universities team up across state lines to work on research, educational, workforce development and technology transfer projects, that’s when collectivity wins and success ensues. Peppered throughout this annual report, you’ll find quotes from researchers associated with STRIDE who have welcomed this approach.

In the two years since the STRIDE Center’s inception, 29 projects have been selected and 73 percent of those are collaborative, bringing together researchers from multiple institutions within the STRIDE consortium. The projects range from using virtual reality to teach children how to safely cross the street, to investigating the relationship between unsafe driving events and driver body posture, to using crowdsourcing as a way to improve bike route networks, to integrating emissions modeling into CORSIM, a microscopic traffic simulation software maintained at the University of Florida. Read about these projects and more starting on page 12.

Our policy on collaboration continues right into STRIDE’s educational activities with teams of researchers working on creating new courses. These range from public transportation education, to bike and pedestrian planning course modules, to teaching basic principles that introduce rating systems for designing sustainable neighborhoods. These educational initiatives are highlighted beginning on page 24.

Henry Ford said “If everyone is moving forward together, then success takes care of itself.” Here at STRIDE we firmly believe this, and we once again look forward to another productive and collaborative year in 2014. Our doors are open. We invite you to join us in this mission.

Lily Elefteriadou, Ph.D.  
Professor & UFTI/STRIDE Director
Milestones & Performance

Milestones

• STRIDE Student of the Year, Erica Schmidt selected, Fall 2013
• First STRIDE Student Research Poster Showcase and Competition at TRB, January 2013
• Second call for proposals issued, February 2013
• Webinar and Computer Lab Workshop on Managed Lanes Operations and Simulation using CORSIM, April 2013
• First UTC Conference in Orlando, Fla., hosted by STRIDE, April 2013
• Symposium on “Transportation Safety: From Research to Practice”, April 2013
• Second year of STRIDE Interns, May 2013
• Spring 2013 STRIDE e-Newsletter released, May 2013
• 2012 STRIDE Annual Report published, September 2013
• WTS Transportation Symposium hosted at UF by WTS Florida Gator Student Chapter on “Communication between Women and Men in the Workplace,” November 2013
• Fall 2013 STRIDE e-Newsletter released, January 2014

By the Numbers

88
Number of pre-proposals received

11
Number of projects competitively selected for funding

8
Projects considered to be applied/advanced research

$962,961
Amount awarded in applied/advanced research projects

$1,485,909
Cost share projects

12
Total cost share projects

83
Leadership positions in regional, national and international organizations

88
Number of undergraduate and graduate students participating in transportation research projects funded by this grant

61
undergraduate

91
graduate

24
M.S.

45
Ph.D

2133
K-12 participants

13
M.S.

10
Ph.D

56
Agencies participating in center activities

37
K-12 events organized

25.5% undergraduate

42.5% graduate

Transportation-related graduate and undergraduate courses offered by faculty and graduate students associated with STRIDE

*a Some courses split between UTCs to prevent double-counting
These are the STRIDE expenditures and associated cost share funds for Year 2. The UTC expenditures accounted for 49% and cost share funds accounted for 51%, which came from consortium member state DOTs and universities.

This graph represents STRIDE awarded funds for Year 2. Funding for research accounted for 75% while education and workforce development were each 6%. General administrative functions accounted for 14% of the budget.
Staff

**STRIDE Center Staff**

**Lily Elefteriadou, Ph.D.**  
UFTI/STRIDE Director & Professor  
University of Florida

**Ines Aviles-Spadoni, M.S.**  
STRIDE Coordinator of Research Programs/Services  
University of Florida

**Richard Long**  
STRIDE DOT Outreach Coordinator  
University of Florida

**Nina Barker**  
T2 Interim Director  
Florida Transportation Technology Transfer (T2) Center  
University of Florida

**Leslie Washburn, P.E.**  
K-12 Workforce Development Coordinator  
University of Florida

**Morgan Witter, B.A.**  
Administrative Assistant  
University of Florida

**STRIDE Internal Steering Committee – University Partner Representatives**

**Al Giffin**  
Director, Auburn Transportation Research Center  
Auburn University

**Mohammed Hadi, Ph.D.**  
Associate Professor  
Florida International University

**Randall Guensler, Ph.D.**  
Professor  
Georgia Institute of Technology

**Burak Eksioglu, Ph.D.**  
Associate Professor  
Mississippi State University

**Downey Brill, Ph.D.**  
Professor  
North Carolina State University

**Virginia Sisiopiku, Ph.D.**  
Associate Professor  
University of Alabama at Birmingham

**Ruth Steiner, Ph.D.**  
Professor  
University of Florida

**Daniel Rodriguez, Ph.D.**  
Professor  
University of North Carolina at Chapel Hill

**STRIDE External Advisory Board Members**

**Ronnie Baldwin**  
Chief Engineer  
Alabama Department of Transportation

**Randy Battey**  
Asst. Chief Engineer (Operations)  
Mississippi Department of Transportation

**Darryl Dockstader**  
Manager, Research Center  
Florida Department of Transportation

**Georgene M. Geary**  
State Research Engineer  
Georgia Department of Transportation

**Howard Glassman**  
Executive Director  
Florida MPO Advisory Council

**Ehren D. Meister**  
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**Burak Eksioglu, Ph.D.**  
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University of Florida

**Kris Milster**  
ITS/Traffic Operations Specialist  
Federal Highway Administration  
Florida Division Office

**Yvette Taylor**  
Regional Administrator  
Federal Transit Administration

**Anita Vandervalk**  
Principal  
Cambridge Systematics, Inc.

**Support Staff/ The Engineering School of Sustainable Infrastructure & Environment/College of Engineering at UF**

**Sharon Henry, B.S.**  
Grants Assistant  
Civil & Coastal Engineering

**Timothy Talley**  
IT Expert, Computer Support  
Civil & Coastal Engineering

**Ragen Tillery**  
Grants Specialist  
College of Engineering

**Nikki Martin, M.S.**  
Grants Specialist  
College of Engineering
When a group of eight universities in the Southeastern U.S. come together to resolve transportation-related issues affecting a region, when they team up to work on research, educational, workforce development and technology transfer projects, that’s called collaboration and collectivity wins benefiting the greater good. That approach was conceptualized from the very beginning by UFTI/STRIDE Director Lily Elefteriadou, Ph.D., and the Center’s Internal Steering Committee (ISC) members, comprised of top-notch faculty members from Auburn University, Florida International University, Georgia Institute of Technology, Mississippi State University, North Carolina State University, the University of Alabama at Birmingham, the University of Florida, and the University of North Carolina at Chapel Hill. The STRIDE Center currently has 29 active projects, and out of those, 21 or 73 percent are collaborative in nature. That’s more than half of all projects that have two or more universities and researchers pulling their intellect and capabilities to produce high-quality science. Many of the principal investigators polled have expressed their satisfaction in working across state lines. Most feel this opportunity has provided them with the ability to share data, resources, facilities, and equipment, and that it has allowed graduate students involved in projects to meet students and faculty at STRIDE partner institutions.

The STRIDE Center provides tremendous opportunities for research collaborations. As a faculty associated with the Center, I established new collaborative research partnerships with five universities (FIU, Georgia Tech, NCSU, UNC, and UF) over the past 2 years. Such partnerships broadened my research undertakings and helped me to establish a foundation for long lasting multidisciplinary research collaborations between my institution and STRIDE partners. In addition, my graduate student advisees benefited greatly from conducting collaborative research with colleagues and peers from other universities. — Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham

One of the ways STRIDE encourages collaborative research is by explicitly allocating a score for each proposal during the review cycle. This has, indeed, forced me to talk to other researchers at partner institutions when I work on a STRIDE proposal. — Burak Eksioglu, Ph.D., Mississippi State University

The STRIDE Center has provided many opportunities for collaboration among its member institutions on research and education projects. Most of the projects awarded through STRIDE involve two or more universities. — Rod Turochy, Ph.D., Auburn University

The STRIDE Center’s policy of funding research projects that involve heavy collaboration from two or more institutions is beneficial because it rewards working with others who have different experiences and skills. It challenges researchers to understand the assumptions in their research and inspires scientists to produce world class research, while at the same time creating stronger relationships across disciplines and national and international borders. —Ruth Steiner, Ph.D., University of Florida
One of the most enjoyable and rewarding aspect of being part of STRIDE is having the opportunity to work with colleagues and students from other member universities on research projects and other activities. Although I knew many of them for years and we participated together in TRB committees through the years, it was not until we worked together on STRIDE activities that I felt we are part of a team, exchanging ideas and knowledge, and advancing our research and students in the process.

— Mohammed Hadi, Ph.D., Florida International University

Some of the most significant successes of STRIDE have resulted from our early emphasis on making sure we developed collaborative efforts across our institutions that draw on our collective capabilities and experiences. As a result we at NCUS, for example, have had the opportunity to do things we otherwise could not have done by working with numerous colleagues at the other universities. Example results of these successful collaborations include new approaches to: 1) integrate emissions modeling with traffic micro-simulation to enhance our ability to model and manage air quality, 2) provide near-real time traffic interventions for non-recurring events; and 3) provide opportunities for young women to learn about transportation engineering.

— Downey Brill, Ph.D., North Carolina State University

A really unique feature of STRIDE has been its ability to foster interdisciplinary collaboration across universities. I have been able to establish excellent working collaborations with several programs at different universities. They would not have happened without STRIDE.

— Daniel Rodriguez, Ph.D., University of North Carolina at Chapel Hill

By collaborating with outside public, private, and educational agencies, we have been able to take on more complex, multi-dimensional projects and better understand how our work connects with the community around us. These types of collaboration efforts also allow graduate and undergraduate students to make new professional connections, develop a sense of the field of transportation outside of academia, and become involved in projects that may not have been feasible without outside resources and support.

— Randall Guensler, Ph.D., Georgia Institute of Technology

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PROJECTS WITH CONSIDERABLE COLLABORATION

Teaching Schoolchildren Pedestrian Safety: A Pragmatic Trial Using Virtual Reality
(STRIDE 2013-004)
David Schwebel, Ph.D., UAB; Daniel Rodriguez, Ph.D., UNC Chapel Hill; Virginia Sisiopiku, Ph.D., UAB

Over 4100 American pedestrians are killed annually, and over 215,000 injured. Globally, rates are much higher. Children have particularly high rates for pedestrian injury, largely because they lack the cognitive sophistication of adults. Crossing a street requires complex perceptual and cognitive capacity that develops through early and middle childhood but might be accelerated through training. Current efforts to reduce child pedestrian injury risk are multi-faceted. Traffic engineering, driver behavior, and adult supervision are critical targets. Also critical, and the present focus, are interventions targeting children themselves. Individualized training of children at roadside locations by adults is effective. It offers children repeated practice at the cognitive-perceptual task of street-crossing, along with feedback about the success of crossings. Such programs are laborious and expensive, however, especially for cash-strapped schools and community centers. An alternative is use of virtual reality to train children to cross streets. Virtual reality offers the advantages of repeated practice without risk of injury, minimal adult supervision, and immediate feedback about crossing safety. Virtual reality training can be tailored to children’s ability levels so that children encounter increasingly complex pedestrian environments as their skills improve. The team’s previous research with a virtual reality prototype found 7- and 8-year-old children gained pedestrian safety skills through six 30-minute virtual reality training sessions (Schwebel, McClure, & Severson, in press). The research project has two primary objectives: First, the researchers are developing a new virtual environment that is portable, durable, and user-friendly. It will be constructed for delivery to schools or community centers, installation for use over a few weeks, and then transport to a new center. The objective is to create an affordable system that can be integrated into a third-grade curriculum for a short health-focused unit. Second, the researchers are conducting a pragmatic trial to evaluate the effectiveness of using the virtual environment in school environments. Children are currently being recruited from Hemphill Elementary School in Birmingham for pre-intervention testing. The system will be placed in their school for three weeks, with the expectation that teachers permit each third-grader to use the virtual environment on six occasions (twice weekly), gaining valuable practice and feedback on their street-crossing safety. Walking time, gender, and race will be pre-programmed to facilitate tailored training, and complexity of the street environment will increase with learning. Following the school-based training, post-intervention testing will evaluate children’s learning.

STRIDE is acutely aware of the need for interdisciplinary collaborative research to conduct high-quality science. Transportation safety is inherently interdisciplinary, as injuries are caused by a range of environmental, behavioral, and contextual factors. I am a psychologist. Our STRIDE-funded project has benefitted tremendously from my collaboration from Dr. Sisiopiku, a civil engineer, and Dr. Rodriguez, a city and regional planner. Only with collaboration across disciplines will we as a society solve the most challenging problems in transportation safety.

– David Schwebel, Ph.D., University of Alabama at Birmingham
Emissions Modeling and Integration into Traffic Micro-simulation  
(STRIDE 2012-014)  
Scott Washburn, Ph.D., UF; Nagui Rouphail, Ph.D., NCSU; H. Christopher Frey, Ph.D., NCSU

The USDOT has established strategic goals regarding livability and environmental sustainability in order to minimize the significant effect of transportation systems on the environment. These goals have motivated the need for accurate measurements or estimates of micro-scale (i.e., second or sub-second) vehicle Energy Use and Emissions (EU&E). The availability of such data is especially important considering the growing need to assess the environmental effectiveness of traffic and Intelligent Transportation System (ITS) management strategies such as ramp metering, managed lanes, traveler information systems, speed harmonization, and even connected vehicle systems. Since highway transportation accounts for large portions of the national annual emissions, transportation planners and engineers must pay special attention to these strategies to ensure that improvements in transportation operations also result in acceptable air quality conditions. CORSIM is a microscopic traffic simulation software program used by many traffic analysts in the U.S. CORSIM models traffic at the individual vehicle level, and at a 1-second time resolution. The software is currently maintained by the McTrans Center at the University of Florida. While the traffic modeling aspects of the program have kept pace with the state-of-the-art, the emissions modeling aspect of the program has not been updated in over 20 years. In order to validate the VSP model once it is implemented in CORSIM, the researchers will compare CORSIM emissions estimates for an arterial roadway section in Gainesville and a freeway section in Orlando using the University of Florida Transportation Research Center vehicle that is equipped with a Portable Emissions Monitoring System (PEMS), which measures the emissions of CO₂, CO, HC, and NOₓ as well as collecting GPS position data and vehicle engine state parameters.

STRIDE’s policy to fund collaborative projects, whether on research or tech transfer problems has proven to be a big success. Not only has that policy enabled complementary skills sets to be brought to bear across campuses to tackle complex problems in the Southeast region, it has also created new networks of faculty, students and research staff that are now comfortable working within larger and more diverse teams. This is an excellent way to prepare our graduate students and post-docs for careers in academia or in the private and public sectors. In our project case, we have been able to add much value by integrating HCM freeway analysis methods developed at NC State University, with expertise on Active Traffic Management at Florida International University to build a framework for dynamic traffic interventions that will help TMC operators to select and assess optimal ATM strategies in their day to day operations.

– Nagui Rouphail, Ph.D., North Carolina State University
Empirically-Based Performance Assessment and Simulation of Pedestrian Behavior at Unsignalized Crossings
(STRIDE 2012-016)
Bastian Schroeder, Ph.D., NCSU; Lily Elefteriadou, Ph.D., UF; Virginia Sisiopiku, Ph.D., UAB

The goal of this project is to develop microscopic algorithms describing pedestrian and driver behavior at unsignalized crossings. These algorithms will be developed from field data collected at mid-block pedestrian crossings. The research plan emphasizes the consideration of special pedestrian populations more prevalent in the southeast, including students and elderly pedestrians. The research product will result in an improved understanding of pedestrian-vehicle interaction at these crossing locations, which is expected to have a significant impact on engineering. This project will implement select algorithms in the CORSIM microsimulation model, and will further develop educational modules for dissemination of the research results to students and professionals in the southeast and nationwide. Specific outcomes for this research will include: (a) a standalone model of pedestrian yield and gap acceptance behavior at unsignalized crossings, (b) a driver yielding behavioral model and (c) prototype algorithms to be incorporated and tested in the CORSIM traffic microsimulation model. Key deliverables include the prototype algorithms implemented in CORSIM, a final report summarizing the research and findings, and educational modules on the research results that can be incorporated into university curricula, or serve as material for standalone professional development courses.

One of the great things about STRIDE is the opportunity to collaborate with faculty and students with the partnering universities. Through the collaboration, we are able to combine data from three states, which makes our research much more broadly applicable than if we were limited to North Carolina. For our students, the joint project offers the unique ability to interact with students and professors from other schools through online and in-person meetings. I feel that especially the routine virtual and online collaboration and exchange is critically important to prepare them for a career in an increasingly global work environment.

— Bastian Schroeder, Ph.D., North Carolina State University

Quantifying the Costs of School Transportation
(STRIDE 2012-022)
Noreen McDonald, Ph.D., UNC Chapel Hill; Ruth Steiner, Ph.D., UF; Jeff Tsai, M.S., NCSU

Big yellow buses are an integral part of the American school experience. But have you ever stopped to think about how much it actually costs to get children to school? Researchers from two STRIDE universities, the University of Florida and the University of North Carolina at Chapel Hill, joined together to analyze the total costs of school transportation in Florida and North Carolina. While the first thing that might come to mind is the expense of each trip, including the purchasing and fueling school buses and paying for drivers, many other factors influence the cost of school transportation especially when all modes of travel are considered. How much does the state reimburse communities for school bus transportation? What is the average distance that students travel to school? What is the cost of congestion to the community related to parents driving children to school? What are the health costs associated with children not getting enough physical activity? How many school-aged children are involved in crashes and what are the costs of those injuries to the community?

In the past year, the research team examined 19 recently constructed elementary schools in Florida and North Carolina. For each school, the team estimated the cost of public infrastructure, which includes sidewalks, crosswalks, bike racks, school buses, parking lots, and drop-off and pick-up lanes. Non-infrastructure costs were also quantified; operations and maintenance, parents’ value of time, injuries or fatalities associated with different travel modes, air and noise pollution, and congestion all have a cost. These calculations allowed the research team to compare both total and per-student transport costs of each mode for each school. The project is now heading into its next step, which is to develop a decision support tool that can be used in school siting and infrastructure investment decisions. The tool will allow school planners, especially those in the southeastern states, to better evaluate the tradeoff between the cost of a particular school site and the cost of transportation to that site. The results should provide the information for decision makers to understand the tradeoff between the inexpensive land at the periphery of a community compared to the on-going transportation costs for busing children longer distances to school.

One of my favorite parts of STRIDE-funded projects is the emphasis on collaboration. Ruth Steiner and I share an interest in children’s travel and the role of transportation planners in changing behavior. Through two STRIDE-funded studies, we’ve been able to look deeply at the costs of getting children to school. Our partnership has allowed us to tackle the issue in depth using North Carolina and Florida as case studies going well beyond the work either of us could do individually. As a result, there’s now a series of articles, conference presentations, and outreach materials on this previously under-studied topic.

— Noreen McDonald, Ph.D., University of North Carolina at Chapel Hill
Investigating the Effect of Drivers’ Body Motion on Traffic Safety
(STRIDE 2013-051)
Angelos Barmpoutis, Ph.D., UF; Alexandra Kondyli, Ph.D., UF; Virginia Sisiopiku, Ph.D., UAB

This research project aims to investigate the relationship between potentially unsafe driving events and actual driver body posture and movements when performing a driving maneuver (e.g., lane changing, merging) under different traffic and geometric configurations and when engaging with a secondary task. The findings of this research can provide significant insights regarding which body movements may hide unsafe situations while performing a driving maneuver that requires the attention of the surrounding environment. A second objective is to identify typical behaviors of specific driver groups (e.g., younger vs. older drivers, aggressive vs. conservative drivers, men vs. women), in naturalistic settings. Such information can be used for enhancing current driver training methods for targeted driver groups such as novice or elderly drivers. The third objective of the study is to develop a conceptual framework for constructing an in-vehicle driver assistance system that takes into account the driver’s body posture and movements rather than considering solely the vehicle position.

Using Crowdsourcing to Prioritize Bicycle Route Network Improvements
(STRIDE 2013-083)
Jeffrey J. LaMondia, Ph.D., Auburn University & Kari Watkins, Ph.D., GaTech

One of the main reasons citizens do not bicycle in communities is due to the lack of perceived sufficient and safe bicycle network infrastructure (e.g. bicycle lanes, sharrows, shared lanes, etc.). Therefore, defining where the bicycle route network should be located and what types of facilities should be developed in each location is of utmost importance. As such, this research seeks to develop performance measures for prioritizing bicycle route network link improvements. These performance measures can be used to characterize and rank every link within the bicycle network to determine the links that would benefit the most users should they be improved or built. An important aspect of this project will be to develop practical measures that engineers and planners at any level would be able to implement. To assist with this effort, city engineers from Auburn, Ala., and Atlanta, Ga. have agreed to review and provide feedback on the performance measures generated in this project. This work will consider both urban (Atlanta) and suburban (Auburn) areas to ensure that these performance measures are transferable between locations.
A Naturalistic Driving Study across the Lifespan  
(STRIDE 2012-095)  
Despina Stavrinos, Ph.D., & Lesley Ross, Ph.D., University of Alabama at Birmingham

Driving is both key to maintaining independence and mobility in the United States, as well as one of the leading causes of death for individuals across the lifespan through motor vehicle crashes (MVC). This study investigates the complexities surrounding driving in two high risk age groups with the use of naturalistic driving technologies. This will be accomplished through the project’s overarching goal to examine unbiased real-world driving mobility (amount traveled throughout environment), driving safety (crashes/risky driving behavior), and driving behavior (how/when travel occurred) in at-risk drivers across the lifespan, namely younger (16-19) and older (65+) adults. New technology will allow for detailed collection of naturalistic real-world driving outcomes through the use of small GPS and GIS (Global Information Systems; Porter et al., 2002) as well as DriveCam Event recorders (www.drivecam.com). Such systems not only allow for detailed data collection regarding the trip (e.g., speed, traffic, weather, time of day), but also include an inconspicuous wideangled camera for confirmation of the driver, as well as critically important traffic environment related variables and actual unsafe driving behaviors. Funds made available through STRIDE will be used to enroll 12 younger and 12 older drivers (N=24) through current recruitment databases and advertisements within the community. Each participant will undergo a detailed baseline assessment of demographic, cognitive, sensory, and physical/health functioning. Then, we will install each participant’s vehicle with (1) an event-triggered video recording system (DriveCam Event recorder) providing information about high g-force events (i.e., MVCs, near MVCs, and critical incidents as well as distracted driving occurrences) and (2) a GPS and GIS (Global Information Systems) device providing detailed data regarding the trip, speed, traffic, weather, time of day, and traffic surrounding the driver. Two weeks of detailed naturalistic driving data will be collected. Finally, participants will return for a post-test assessment (including detailed self-report driving questionnaires) and removal of the devices. This process will be repeated concurrently with use of proposed matching funds through state government partners, thus doubling the participants. The researchers expect to find a low correlation between commonly used self-reported measures of driving and newer, objective measures (GPS/GIS and in vehicle monitoring devices). As one of the first studies to objectively measure distracted driving in older adults, frequency of distracted driving in this high risk group will be available. Group differences are expected in frequency of engagement in distracted driving, with teens engaging more frequently. However, similarities between the two groups are expected in risk associated with distracted driving. Risk factors will be examined and are anticipated to be different across the groups.

Collaboration was key to the success of this first-of-its-kind naturalistic driving study. Dr. Lesley Ross (Co-Principal Investigator) and I appreciated having the expertise of co-investigators in Engineering and Occupational Therapy, as well as the involvement of dozens of graduate and graduate students from various subdisciplines.  
— Despina Stavrinos, Ph.D., University of Alabama at Birmingham
There is a need in small and rural communities in Florida to improve safety in Lane-Departure Crashes, Intersection Crashes and Traffic Records. However, in order to address these needs there are challenges to contend with, which include lack of engagement, capabilities, and funding of local governments to conduct and execute safety studies. Also lacking is the ability to access crash data as well as the skill to be able to relate the statistical data with high crash segments and intersections and formulate acceptable solutions to mitigate the identified crash spots.

Nevertheless, an opportunity exists to engage the Local Technical Assistance Program (LTAP) / Tribal Technical Assistance Program (TTAP) Centers because they can provide safety project development capacity for small agencies with limited resources. LTAP/TTAP centers have traditionally played an important role to provide training and technical assistance to local transportation agencies in the United States. Also, many University Transportation Centers (UTCs) include technology transfer components that can be integrated with the LTAP/TTAP and DOT efforts to provide data, methods, tools, and project development assistance to agencies with limited resources.

The purpose of this research was to explore how to build safety project development capacity for agencies with limited capabilities and staff in coordination with LTAP/TTAP and UTCs. To accomplish this goal, the research focused on three main directions. First, an assessment was performed of existing models and best practices of other DOTs and LTAP/TTAP Centers in their efforts to develop programs to assist local communities to address safety challenges on local roads. Second, crash data was analyzed to assess the degree of traffic safety concern on local roads, and a survey of local agencies was conducted to better understand the existing expertise and capacities to inventory and manage crash databases. Third, a case study approach was used on a selected county in Florida (Union County) to conduct a safety study in order to understand in more detail the challenges at the local level and to create a guide to assist local agencies in developing safety projects that can reduce crashes and compete for funding.

Using the lessons learned from the Union County experience, the study developed the process and templates for use in conducting road safety studies for local agencies and for preparing the documentation required to support the application for Federal Highway Safety Improvement Plan (HSIP) funding. This work is organized in the form of a manual and is provided as a separate document. This manual includes a funding guide, a process for developing safety projects, a template for developing field studies and B/C analysis, and a tutorial on how to perform crash data analysis using Signal Four Analytics, a statewide crash data system funded by the State of Florida and available free of charge to Florida public agencies that have a stake in traffic safety improvements.
Research Projects

Year 1 (2012)

A Regional Land Use Transportation Decision Support Tool for Mississippi (STRIDE 2012-003)
PI: Brian Morton, Ph.D., University of North Carolina at Chapel Hill
Co-PIs: John Poros, Ph.D., Mississippi State University; Joe Huegy, AICP, North Carolina State University

Engineering: It’s for Girls, Too! (STRIDE 2012-009)
PI: James Martin, P.E., North Carolina State University
Co-PI: Lily Elefteriadou, Ph.D., University of Florida

Emissions Modeling and Integration into Traffic Micro-simulation (STRIDE 2012-014)
PI: Scott Washburn, Ph.D., University of Florida
Co-PIs: Nagui Rouphail, Ph.D., North Carolina State University; H. Christopher Frey, Ph.D., North Carolina State University

Empirically-Based Performance Assessment and Simulation of Pedestrian Behavior at Unsignalized Crossings (STRIDE 2012-016)
PI: Bastian Schroeder, Ph.D., North Carolina State University
Co-PIs: Lily Elefteriadou, Ph.D., University of Florida; Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham

Quantifying the Costs of School Transportation (STRIDE 2012-022)
PI: Noreen McDonald, Ph.D., University of North Carolina at Chapel Hill
Co-PIs: Ruth Steiner, Ph.D., University of Florida; Jeff Tsai, M.S., North Carolina State University

Towards a Holistic Understanding of Quality of Life: An Analysis of Activity-Travel Patterns on Non-Mid-week Days (STRIDE 2012-024)
PI: Siva Srinivasan, Ph.D., University of Florida
Co-PI: Xia Jin, Ph.D., Florida International University

Development of Pedestrian and Bicycle Transportation Course Modules (STRIDE 2012-028)
PI: Daniel Rodriguez, Ph.D., University of North Carolina at Chapel Hill
Co-PI: Rod Turochy, Ph.D., Auburn University

Developing a New Course for Public Transportation Education (STRIDE 2012-029)
PI: Kari Edison Watkins, Ph.D., Georgia Institute of Technology
Co-PI: Jeffrey LaMondia, Ph.D., Auburn University

Consequence Based Route Selection for Hazardous Material Cargo: GIS-Based Time Progression of Environmental Impact Radius of Accidental Spills (STRIDE 2012-036)
PI: Berrin Tansel, Ph.D., Florida International University
Co-PIs: Adjo Amekudzi, Ph.D., Georgia Institute of Technology; Nasim Uddin, Ph.D., University of Alabama at Birmingham

Investigation of ATDM Strategies to Reduce the Probability of Breakdown (STRIDE 2012-042)
PI: Mohammed Hadi, Ph.D., Florida International University
Co-PI: Lily Elefteriadou, Ph.D., University of Florida

Development of Graduate Level Course on Sustainable Asphalt Pavements (STRIDE 2012-049)
PI: James Richard Willis, Ph.D., Auburn University

Development of Educational and Professional Training Modules on Green/Sustainability Design and Rating Systems for Neighborhood Development and Transportation (STRIDE 2012-051)
PI: Robert W. Peters, Ph.D., University of Alabama at Birmingham
Co-PI: Adjo Amekudzi, Ph.D., Georgia Institute of Technology

Automated Sidewalk Quality and Safety Assessment System (STRIDE 2012-067)
PI: Randall Guensler, Ph.D., Georgia Institute of Technology

Signalized Intersection Simulation Program for Education (STRIDE 2012-076)
PI: Scott Washburn, Ph.D., University of Florida

Analyzing the Impact of Carbon Regulatory Mechanisms on Supply Chain Management (STRIDE 2012-078)
PI: Sandra Eksioglu, Ph.D., Mississippi State University
Co-PI: Joseph Geunes, Ph.D., University of Florida

Engaging Engineering Students with Transportation Safety: An Educational Module (STRIDE 2012-085)
PI: Lesley Strawderman, Ph.D., Mississippi State University

Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes (STRIDE 2012-089)
PI: Jorge Laval, Ph.D., Georgia Institute of Technology
Co-PIs: Yafeng Yin, Ph.D., University of Florida; Yingyan Lou, Ph.D., University of Alabama at Birmingham

A Naturalistic Driving Study across the Lifespan (STRIDE 2012-095)
Co-PIs: Despina Stavrinos, Ph.D., and Lesley Ross, Ph.D., University of Alabama at Birmingham
Year 2 (2013)

Teaching Schoolchildren Pedestrian Safety: A Pragmatic Trial Using Virtual Reality
(STRIDE 2013-004)
PI: David Schwebel, Ph.D., University of Alabama at Birmingham
Co-PIs: Daniel Rodriguez, Ph.D., University of North Carolina at Chapel Hill; Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham

Dynamic Traffic Control Interventions for Enhanced Mobility and Economic Competitiveness
(STRIDE 2013-009)
PI: Nagui Rouphail, Ph.D., North Carolina State University
Co-PI: Mohamed Hadi, Ph.D., Florida International University

Applying Livability Performance Measures to Transportation Plans and Projects
(STRIDE 2013-018)
PI: Leigh Blackmon Lane, Ph.D., North Carolina State University

Signal Timing Optimization with Consideration of Environmental and Safety Impacts
(STRIDE 2013-022)
PI: Mohamed Hadi, Ph.D., Florida International University
Co-PI: Lily Elefteriadou, Ph.D., University of Florida

Engineers Change the World: A Hands-on Workshop for 13- to 18-Year-Old Girls
(STRIDE 2013-028)
PI: James Martin, P.E., North Carolina State University
Co-PI: Nina Barker, University of Florida

GIS-Based Instructional Tool for Crash Prediction Methods
(STRIDE 2013-030)
PI: Ilir Bejleri, Ph.D., University of Florida
Co-PI: Siva Srinivasan, Ph.D., University of Florida

School Transportation: Development of an Education Module
(STRIDE 2013-032)
PI: Noreen McDonald, Ph.D., University of North Carolina at Chapel Hill
Co-PI: Ruth Steiner, Ph.D., University of Florida

On-Board-Diagnostics (OBD) Data Integration into Traffic Microsimulation for Vehicle-Specific Fuel Use and Emissions Modeling and In-Vehicle App Testing
(STRIDE 2013-034)
PI: Scott Washburn, Ph.D., University of Florida
Co-PIs: Christopher Frey, Ph.D., North Carolina State University; Nagui Rouphail, Ph.D., North Carolina State University

Distracted Driving – It is not always a choice.
(STRIDE 2013-062)
PI: Mike Hunter, Ph.D., Georgia Institute of Technology
Co-PI: Gregory M. Corso, Ph.D., Morehead State University

Using Crowdsourcing to Prioritize Bicycle Route Network Improvements
(STRIDE 2013-083)
PI: Jeffrey J. LaMondia, Ph.D., Auburn University
Co-PI: Kari Watkins, Ph.D., Georgia Institute of Technology

Investigating the Effect of Drivers’ Body Motion on Traffic Safety
(STRIDE 2013-051)
PI: Angelos Barmoutsis, Ph.D., University of Florida
Co-PIs: Alexandra Kondyli, Ph.D., University of Florida; Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham
STRIDE Cost Share Projects

North Carolina State University

Delay and User Cost Estimation for Work Zones on Urban Arterials
Naguib Rouphia, Ph.D., Professor; Bastian Schroeder, Ph.D.; Billy Williams, Ph.D.
Associate Professor
NCDOT #5-55160

Technical Assistance to NCDPI in the Implementation of the Transportation Information Management System
Jeffrey Tsai, Director, School Transportation Group, ITRE
NCDOT #5-54522

Pedestrian and Bicycle Accommodations on Superstreets
Naguib Rouphia, Ph.D., Professor, Christopher Cunningham, P.E.; Sarah O’Brien, Bicycle & Pedestrian Program Manager
NCDOT #5-53780

Defining NC Transportation Disadvantaged Populations
Leigh Blackmon-Lane, Ph.D., Senior Research Associate
NCDOT #5-55181

Land Use Forecasting Models for Small Areas in North Carolina
Joseph Huegy, AICP, Director, Travel Behavior Modeling Group, ITRE
NCDOT #5-53883

Mobility and Reliability Performance Measurements
Billy Williams, Ph.D., Associate Professor, Naguib Rouphia, Ph.D., Professor
NCDOT #5-52410

Economic Performance Measures
Leigh Blackmon-Lane, Ph.D., Senior Research Associate
NCDOT #5-56468

SmartLink Baseline for Measurement of Benefits
Billy Williams, Ph.D., Associate Professor; Naguib Rouphia, Ph.D., Professor; George List, Ph.D., Professor
NCDOT #5-55872

Technical Assistance to NCDPI in the Implementation of the Transportation Information Management System
Thomas Cook, Co-Director, Public Transportation Group, ITRE
NCDOT #5-56308

Trip Making Patterns of NC’s University Students
Joseph Huegy, AICP, Director, Travel Behavior Modeling Group, ITRE
NCDOT #5-55400

Development of Near Real Time Performance Measurements for Closed Loop Signal Systems
Naguib Rouphia, Ph.D., Professor; Billy Williams, Ph.D., Associate Professor
NCDOT #5-53795

Florida International University

Decision Support Systems for Transportation Systems Management and Operations (TSM&O)
Mohammed Hadi, Ph.D., Associate Professor; Yan Xiao, Ph.D., Research Associate

Georgia Institute of Technology

Analysis of Dynamic Pricing and Ramp Metering
Jorge Laval, Ph.D., Associate Professor
GDOT #12-17

Automated Sidewalk Quality & Safety Assessment System
Randall Guensler, Ph.D., Professor
GDOT #12-26

University of Florida

Local Technical Assistance Program for Transportation Agencies 2012
Nina Barker, UFTI/T2
FDOT # CBDK-76-977-14

Planning for Incorporating Ancillary Demands in the Next Generation FSUTMS
Sivaramakrishnan Srinivasan, Ph.D., Associate Professor
FDOT # BDK-77-931-16
Modeling, Implementation, and Validation of Arterial Travel Time Reliability
Lily Elefteriadou, Ph.D., Professor
FDOT # BDK-77-977-20

Project Development Capacity for Small Communities in Coordination with the LTAP Center
Ilir Bejleri, Ph.D., Associate Professor
FDOT # BDK-77-977-21

Project Development Capacity for Small Communities in Coordination with the LTAP Center
Siva Srinivasan, Ph.D., Associate Professor
FDOT # BDK-77-977-21

Roundabouts and Access Management
Ruth Steiner, Ph.D., Professor
FDOT # BDK-77-977-22

Roundabouts and Access Management
Scott Washburn, Ph.D., Associate Professor
FDOT # BDK-77-977-22

Lifting High-Occupancy-Vehicle Lane Eligibility and Shoulder Use Restrictions for Traffic Incident Management
Yafeng Yin, Ph.D., Associate Professor
FDOT # BDK-77-977-23

Deployment Strategies of Managed Lanes on Arterials
Yafeng Yin, Ph.D., Associate Professor
FDOT # BDV-32-977-01

Deployment Strategies of Managed Lanes on Arterials
Siriphong “Toi” Lawphongpanich, Ph.D., Associate Professor
FDOT # BDV-32-977-01

Estimation of Capacities on Florida Freeways
Lily Elefteriadou, Ph.D., Professor
FDOT # BDV-32-977-03

Crash Prediction Method for Freeway Facilities with High Occupancy Vehicle (HOV) and High Occupancy Toll (HOT) Lanes
Sivaramakrishnan Srinivasan, Ph.D., Associate Professor
FDOT # BDV-32-977-04

Comparison of Methods for Measuring Travel Time at Florida Freeways and Arterials
Lily Elefteriadou, Ph.D., Professor
FDOT # BDV-32-977-02
Five undergraduate students were chosen to participate in the STRIDE Transportation Research Internship Program (TRIP) in the summer of 2013. Three students interned at the University of Florida, a fourth at North Carolina State University, and the fifth student at Florida International University. During TRIP, interns participate in research projects under the direction of faculty and graduate students. The experience is valuable for students interested in pursuing graduate studies or working as a transportation engineer. Undergraduate students from the STRIDE consortium as well as from other universities across the U.S. are eligible to participate in TRIP and can choose to intern at any university within the consortium. This is a paid internship that runs from May to August of each year. More information is found at http://www.stride.ce.ufl.edu/internship-opportunities.

Cory Dorman  
Project: Crash Prediction Method for Freeway Facilities with Managed Lanes  
Advisor: Siva Srinivasan, Ph.D., UF

Andrew Fell  
Project: Guidelines and Evaluations for HOV and Bus Lanes on Arterials  
Advisor: Yafeng Yin, Ph.D., UF

Sarah Huestis  
Project: Managed Lanes on Arterials: Introduction and HOT Lanes  
Advisor: Toi Lawphongpanich, Ph.D., UF

Britton Hammit  
Project: Retaining Wall Asset Management  
Advisor: Daniel Findley, Ph.D., NCSU

Amauris Ramirez  
Project: Setting Up Analysis Models for Travel Time Reliability Estimation  
Advisor: Mohammed Hadi, Ph.D., FIU

Setting up analysis models for travel time reliability estimation

Presented by: Amauris Ramirez
Advisors: Dr. Hadi and Dr. Xiao
Multiple STRIDE professors were willing to test out our course materials and provide feedback, allowing us to make the materials more usable for those with limited experience in the transit portion of our industry.

— Kari Watkins, Ph.D., Georgia Institute of Technology

It is very encouraging to see the increasing interest in education and training around pedestrian and bicycle issues. There is an immense need to better understand how to plan for, and operate facilities that serve current and potential users. As complete streets policies become commonplace, there will be even higher demand for understanding pedestrian and bicycle activity. Our modules are a step in serving this need.

— Daniel Rodriguez, Ph.D., University of North Carolina at Chapel Hill

Our STRIDE technology transfer project is helping several jurisdictions throughout the southeast both small and large to develop performance measures to guide their vision for how transportation investment can deliver solutions that support sustainable, livable communities.

— Leigh Blackmon-Lane, Ph.D., North Carolina State University

Collaboration in the field of sustainability is critical for educating DOTs, engineers and students, as well as advancing the state of the practice. The field of pavement engineering involves learning what it really means to be sustainable, and it will require everyone coming together to teach the next generation of engineers how to think in terms of sustainability. That's why we spoke with various DOTs and brought in experts from across the country, such as Dr. Steve Muench from the University of Washington, to help educate students in our sustainable pavements course.

— Richard J. Willis, Ph.D., Auburn University
Educational Products

A Transportation Safety Module for Undergraduate Students
Lesley Strawderman, Ph.D., associate professor at Mississippi State University, developed, tested, refined, and disseminated an educational module aimed at teaching undergraduate students about transportation safety. Undergraduate students have limited exposure to transportation safety in their classes, and this tool will help improve a student’s understanding, appreciation, and interest in transportation safety. A paper on this topic was presented in September 2013 at the Annual Meeting of the Human Factors and Ergonomics Society (HFES) and published in the Proceedings of the HFES International Annual Meeting, San Diego, Calif. The course module is available at: http://ergo.research.ise.msstate.edu/stride-classroom-module/

Developing a New Course for Public Transportation Education
Undergraduate and graduate transportation and planning courses can now incorporate components that address the planning, design, and operations aspects of public transportation with new transportation course modules developed by Kari Watkins, Ph.D., of the Georgia Institute of Technology and Jeff LaMondia of Auburn University. The researchers developed a set of public transportation course modules for three courses: a) Introduction to Transportation (an undergraduate senior course); b) Transportation Planning (a core graduate course); and c) a stand-alone Transit Planning and Operations course (a specialized graduate course). The modules were designed by researching applicable literature, reaching out and collaborating with educators and practitioners, and mapping out the core concepts needed for transportation practice. To download the course modules, visit: http://www.stride.ce.ufl.edu/public-transportation-course-modules

Graduate Level Bicycle and Pedestrian Planning Course Module Now Available
Researchers from the University of North Carolina at Chapel Hill and Auburn University created three interdisciplinary modules for use in undergraduate introductory courses related to transportation, planning and policy. The modules are: Pedestrian and Bicycle Data and Performance Analysis; Design of Pedestrian and Bicycle Facilities; and Planning for Pedestrians and Bicycles. The modules are now available for download on the Pedestrian and Bicycle Information Center (PBIC) website at http://www.pedbikeinfo.org/training/courses.cfm. The modules have been developed to fulfill 3-credit hours and provide material for one week in a typical semester-long introductory transportation engineering class.

Development of Graduate Level Course on Sustainable Asphalt Pavements
Richard Willis, Ph.D., lead researcher in the National Center for Asphalt Technology at Auburn University, created a graduate-level course titled Design and Assessment of Sustainable Pavements, which was rolled out in January 2013. The course introduces graduate students to the concept of sustainability and teaches them the importance of making decisions based on triple-bottom-line concepts: economic benefits, environmental stewardship, and social well-being. Students will learn to use standard and innovative test procedures to measure the ability of both asphalt and concrete pavements to reduce the community carbon footprint, contribute to noise reduction, improve driver safety, and conserving natural resources through recycling. The course also has been taught to public sector transportation professionals in Georgia, Alabama, Florida, and Mississippi. The course modules and presentations are available at http://www.stride.ce.ufl.edu/sustainable-pavements-course-modules

Graduate Level Bicycle and Pedestrian Planning Course Module Now Available
Researchers from the University of North Carolina at Chapel Hill and Auburn University created three interdisciplinary modules for use in undergraduate introductory courses related to transportation, planning and policy. The modules are: Pedestrian and Bicycle Data and Performance Analysis; Design of Pedestrian and Bicycle Facilities; and Planning for Pedestrians and Bicycles. The modules are now available for download on the Pedestrian and Bicycle Information Center (PBIC) website at http://www.pedbikeinfo.org/training/courses.cfm. The modules have been developed to fulfill 3-credit hours and provide material for one week in a typical semester-long introductory transportation engineering class.
This project focuses on the development of classroom training materials that introduce sustainability design and rating systems for neighborhood development and transportation and is a collaborative effort between the University of Alabama at Birmingham (Drs. Peters and Sisiopiku) and Georgia Institute of Technology (Dr. Amekudzi). Plans involve teaching the new semester long course during fall semester 2014 as well as utilizing selected modules for professional development/continuing education credits. The objective is to educate the future workforce about the basic principles for green/sustainable design and evaluation methods in an effort to raise awareness on sustainable design options and associated benefits.

For our project, I have had the privilege, honor, and joy to work with two renown researchers in the transportation engineering field – Dr. Adjo Amekudzi from Georgia Tech and Dr. Virginia Sisiopiku from UAB. The collaboration with Georgia Tech has helped to develop and enhance our research capabilities on sustainability rating systems. Dr. Amekudzi has brought a wealth of knowledge and experience to the project, aiding and assisting the overall scoping and development of the education modules for the project. Several project outcomes have developed from this collaboration, including joint publication/presentations at conferences. I have thoroughly enjoyed our multidisciplinary interactions together on this project.

— Robert W. Peters, Ph.D., University of Alabama at Birmingham

The signalized intersection simulation program is targeted for undergraduate civil engineering students. This program is designed to alleviate students from the complications and time-intensive aspects of network coding, so they can focus entirely on learning the fundamentals of signal timing and analysis.

— Scott Washburn, Ph.D., University of Florida
Erica Schmidt
Student of the Year 2013

Erica Schmidt is a graduate student at the University of Alabama at Birmingham. She is specializing in medical/clinical phycology and is working on a STRIDE-funded project titled *A Naturalistic Driving Study Across the Lifespan*. The study looks at investigating the complexities surrounding driving in younger (16-19) and older adults (65+), two high-risk age groups, with the use of naturalistic driving technologies. This will be accomplished through the project’s overarching goal to examine unbiased real-world driving mobility (amount traveled throughout environment), driving safety (crashes/risky driving behavior), and driving behavior (how/when travel occurred). As a member of the research team, she developed a cognitive, physical and sensory assessment test that will be implemented in the driving study. Erica finds it fascinating how cognitive functions influence driving and transportation options and plans to continue working in this area throughout her career.

CONGRATS!

Erica Schmidt (at left) with Dr. Lily Elefteriadou, UFTI/STRIDE professor and director.
Tabitha Combs, Doctoral Student, UNC Chapel Hill
2nd Place, STRIDE Student Research Poster Showcase, UF/STRIDE Reception, TRB, 2013

Ehsan Doustmohammadi, Doctoral Student, UAB
GAFP Scholarship, UAB Graduate School, 2013

Alice Grossman, Doctoral Student, GaTech
Dorothy Evans Fellowship, Vassar College, 2013-2014
American Association of University Women Selected Professionals Fellowship, Alternate, 2013-2014
Association of Pedestrian and Bicycle Professionals, Annual Meeting, Best Poster Award, 2013
Golden Shoe Award, Georgia Tech’s Comprehensive Sidewalk Inventory and Research, PEDS Atlanta, 2013
Dwight D. Eisenhower Transportation Fellowship Program, 2013
Eisenhower Graduate Fellowship, Washington, D.C., May 2013

Gwen Kash, Master’s Student, UNC Chapel Hill
Dwight D. Eisenhower Transportation Fellowship Program, 2012-2013
2nd Place, National Conference on Rural Public and Intercity Bus Transportation Graduate Student Research Contest, 2013

Sara Khoeini, Doctoral Student, GaTech
Georgia Tech Nominee for National Center for Sustainable Transportation Student of the Year, Atlanta, Ga., October 2013
WTS Helene M. Overly Memorial Scholarship, WTS Annual Scholarship Luncheon, Atlanta, Ga., October 2013

Clark Letter, Doctoral Student, UF
1st Place, Student Poster Showcase for Incorporating Probability of Breakdown into Fuzzy Logic Ramp Metering, January 2013, TRB
1st Place, ITE District 10 Florida Section of ITE Student Poster Competition 2013, Poster Title: Incorporating Probability of Breakdown into Fuzzy Logic Ramp Metering

Zhuofei Li, Doctoral Student, UF
Outstanding International Student Award, 2013

Jinyan Lu, Doctoral Student, FIU
Best Student Paper Award, District 10 ITE
Bill McGrath Transportation Studies Scholarship Award, FSITE

Miguel Lugo, Doctoral Student, UF
NSF South East Alliance for Graduate Education and the Professorate Funding Award, 2013, UF
9th Post graduate Forum of Beihang University Beijing, P.R.C.
USDOT Certificate for Completion of the 2013 Summer Transportation Internship Program for Diverse Groups, 2013
Florida Section ITE William R. McGrath Transportation Studies Scholarship Award, 2013

Sekcin Ozkul, Doctoral Student, UF
IRF Fellowship, 2013-2014
2nd Place, ITE District 10 Florida Section of ITE Student Poster Competition 2013, Poster Title: Heavy Vehicle Effects on Florida Freeways and Multilane Highways

Erica L. Schmidt, Master’s Student, UAB
3rd Place, Student Poster Showcase for Development of Comprehensive Physical, Sensory and Cognitive Assessment Battery for Driving Safety and Behavior, UTC Conference for the Southeastern Region, Orlando, Fla., 2013
3rd Place, Student Poster Competition, UTC Conference for the Southeastern Region, April 2013
STRIDE Student of the Year 2013

Jay Shannon, Doctoral Student, MSU
1st Place, STRIDE Student Research Poster Showcase, UF/STRIDE Reception, TRB, 2013

Danielle Soriano, B.S., UF 2013
Sharon D. Banks Memorial Undergraduate Scholarship received from WTS South Florida Professional Chapter, 2013
Undergraduate Student Outstanding Service/Leadership Award, UF Civil and Coastal Engineering, 2013
Student Chapter President, WTS Advancing Women in Transportation, 2012-2013

Evangelos Palinginis, GaTech
Eisenhower Graduate Fellowship, 2013
Dwight D. Eisenhower Transportation Fellowship Program, Washington, D.C., May 2013
2013 Arnaoutis Foundation Fellowship, London, UK, June 2013

Prabha “Popa” Pratyaksa, Doctoral Student, GaTech
2nd Place, Student Poster Showcase for Safety Performance Evaluation of Converging Chevron Pavement Markings

Donald Watson, Doctoral Student, UF
Eisenhower Graduate Fellowship, 2013
HDR Engineering, Inc. Scholarship, 2013
Institute of Transportation Engineers Scholarship, 2013

Ruoying Xu, Master’s Student, UF
Eisenhower Graduate Fellowship, 2013

Lei Zhang, Doctoral Student, UF
IRF Fellowship, 2013-2014
Cheng Zhong, Doctoral Student, UAB GAFP Scholarship, UAB Graduate School, 2013
Other Faculty & Student Awards

FIU ITE Student Chapter
Outstanding Organization in the Engineering Community, Council of Student Organizations (CSO) of FIU

Alexandra Frackelton & Alice Grossman, GaTech
Association of Pedestrian and Bicycle Professionals, Ken Cross Scholarship for Student Research Date Announced: September 11, 2013
To be used: 2014, for the Pro Walk/Pro Bike Conference in Pittsburgh, Pennsylvania

Randal Guensler, Ph.D., Professor, GaTech
Research Innovation Award, Georgia Institute of Technology, School of Civil Engineering, Atlanta, Ga., Spring 2013

Randall Guensler, Alexandra Frackelton, & Alice Grossman, GaTech
The Sidewalk Quality Analysis Project, Golden Shoe Award, PEDS, Atlanta, Ga., October 2013

Mohammed Hadi, Ph.D., Associate Professor, FIU
Certificate of Appreciation for organizing TRB HCQS and TFT Joint Summer Meeting, TRB, January 2013

Sara Khoeini & Adnan Sheikh, GaTech
2013 Freeway & Managed Lane Operations Meeting and Conference Best Student Paper Award, Mid-Year TRB Meeting, Atlanta, Ga., June 2013

Alexandra Kondyli, Ph.D., UF; Angelos Barmpoutis, Ph.D., UF; & Virginia Sisiopiku, Ph.D., UAB
Merit Award, International Conference on Connected Vehicles (ICCVE), Las Vegas, NV, December 2013; STRIDE Project: Investigating the Effect of Drivers’ Body Motion on Traffic Safety

Kati Salamati, Bastian Schroeder, Duane R. Geruschat, & Nagui Rouphail
Best Paper Award, TRB Roundabouts Committee, Event-Based Modeling of Driver Yielding Behavior to Pedestrians and Two-Lane Roundabout Approaches

Ruth Steiner, Ph.D., Professor, UF
Promotion to Full Professor

Berrin Tansel, Ph.D., Professor, FIU
Dean’s Award for Mentorship, FIU, Dec 2013
Fellow, Environment and Water Resources Institute (F. EWRI) ASCE, EWRI, 2013

Kari Watkins, Ph.D., Assistant Professor, GaTech
Top 40 under 40, Mass Transit Magazine, Sept 2013

Alexandra Kondyli, Ph.D., UF and Angelos Barmpoutis, UF, holding the Merit Award for their work on Investigating the Effect of Drivers’ Body Motion on Traffic Safety.
STRIDE Alumni: Where are they now?

Allison Bullock, MCRP
Planner
Alta Planning

Amy Cavaretta, MAURP
Transportation Analyst
Cambridge Systematics, Inc.

Tabitha Combs, Ph.D.
Postdoctoral Research Associate
The Institute for the Environment
University of North Carolina at Chapel Hill

Nagendra Dhakar, Ph.D.
Transportation Analyst
Resource Systems Group, Inc.

Alexandra Frackelton, M.S.
Engineering Trainee
Portland Bureau of Transportation/Signals, Street Lighting & ITS Division

Jose R Hasbun, M.S.
Construction Project Manager
Parker Engineering & Mechanical

Jack Hulsberg, M.S.
Analyst, Transportation Planning/Traffic Operations
Kimley-Horn and Associates, Inc.

Amy Ingles
Community Planner
U.S. Department of Transportation, Volpe Center

Ashish Kulshrestha, Ph.D.
Transportation Modeler
Parsons Brinckerhoff

Jing Li, Ph.D.
Postdoctoral Researcher
University of Alabama at Birmingham

Yingyan Lou, Ph.D.
Assistant Professor
Arizona State University

Dimitra Michalaka, Ph.D.
Assistant Professor
Department of Civil &Environmental Engineering
The Citadel

Gokce Palak, Ph.D.
Visiting Assistant Professor of Quantitative Methods
Shenandoah University

Anna Grace Poole, B.S.
Teacher
Teach for America

Laura Sandt, MRP
Associate Director
UNC Pedestrian and Bicycle Information Center

Carly Sieff, MCRP
Transportation Planner
Fehr & Peers

Danielle Soriano, B.S.
Transportation Analyst
Kimley-Horn and Associates, Inc.

Sarah Stannard, B.S.
Intern in Infectious Diseases
University of Alabama at Birmingham

Emmanuel Robinson, B.S.
Resident Instructor
Glenwood Mental Health
Technology Transfer

The STRIDE project has allowed us to go into small, rural communities and start a dialogue about their future. The ability to see how the form of urban development affects the quality of life of the people in those communities is what is most valuable to them about the project.

– John Poros, Ph.D., Director, Carl Small Town Center, Mississippi State University

The CORSIM Webinar gave participants a detailed introduction to managed lanes, covered the operations’ components of managed lanes and high-occupancy/toll (HOT) lanes, and prepared them for a hands-on workshop on simulating managed lanes such as HOV, HOT, and truck-only lanes using CORSIM. During the workshop, participants had the chance to actually use CORSIM to simulate different types of managed lanes and managed lane scenarios, understand the program output files, and compare the simulation results. I believe attendees gained valuable knowledge on managed lanes operations and their simulation using CORSIM.

– Dimitra Michalaka, Ph.D., Research Associate, University of Florida (Currently an assistant professor at The Citadel, South Carolina)

We envisioned the symposium as a showcase of the multi-disciplinary research on transportation safety and to explore its real-world applications in the short- and long-term. This symposium follows in a series of annual events organized by the Transportation Research Center at the University of Florida on various themes.

– Siva Srinivasan, Ph.D., Associate Professor, University of Florida

The Orlando conference was a great venue for bringing together the agency and academic partners in STRIDE. As an agency participant, it provided me with a holistic view of STRIDE’s progress and plenty of interaction with the researchers themselves. I look forward to future venues like this within the UTC program.

– David Jared, P.E., Chief, Research & Development Branch, Georgia DOT/Office of Research

The grant from the STRIDE Center makes it possible for researchers in three different disciplines at three universities to work together to develop decision support tools that will help small and rural communities in Mississippi make the most of growth in manufacturing and efforts to increase heritage-based tourism.

– Brian Morton, Ph.D., Senior Research Associate, University of North Carolina at Chapel Hill

The grant from the STRIDE Center makes it possible for researchers in three different disciplines at three universities to work together to develop decision support tools that will help small and rural communities in Mississippi make the most of growth in manufacturing and efforts to increase heritage-based tourism.

– Brian Morton, Ph.D., Senior Research Associate, University of North Carolina at Chapel Hill
Technology Transfer Activities

A Regional Land Use Transportation Decision Support Tool for Mississippi
Brian Morton, Ph.D., UNC Chapel Hill; John Poros, Ph.D., MSU; Joe Huegy, AICP, NCSU

The Regional Land-Use Transportation Decision Support Tool generates parcel level growth scenarios designed with CommunityViz and assessed with a land use-travel demand model built with the TRANUS modeling platform. The latter explicitly represents the study area’s economy and real estate markets; spatially allocates population and employment to census blocks; and projects trip distribution, trip generation, mode choice, and trip assignment.

The scenarios that have been designed thus far represent the status quo and, alternatively, favor new housing developed at a minimum density of seven dwelling units per acre and within walking and biking distance to the town centers. The new developments are connected to the just opened 43-mile Tanglefoot Trail, a Class 1 bike/hike trail.

These scenarios have been shared with two communities. Community representatives have been interested to see that they have room for growth within their city limits and have been receptive to higher density, mixed use development.

By creating a spectrum of development scenarios in CommunityViz and testing the transportation implications of those growth scenarios with the TRANUS-based model, local elected officials as well as citizens will better understand the choice between the status quo and a more bike and pedestrian friendly future.

2013 UTC Conference for the Southeastern Region

More than 180 people attended the University Transportation Center (UTC) Conference for the Southeastern Region in Orlando, Fla., on April 4-5, 2013, which showcased UTC projects and helped enhance collaboration amongst academic, private, and public sectors in the Southeast. STRIDE at UF organized and hosted the conference, the first such event in the region, which aimed to bring together faculty, students, practitioners, and public agencies in the Southeast, to disseminate information about on-going activities at all partner universities, and to further enhance collaboration among the academic community as well as the private and public sector agencies in the region.

Dr. Daniel Rodriguez of UNC Chapel Hill congratulating Prabha (Popa) Pratyaksa for winning 2nd Place in the Student Poster Competition.
Transportation Safety Symposium

This event, held on April 3, 2013, in Orlando, Fla., featured presentations based on a variety of projects related to transportation safety undertaken by researchers affiliated with the University of Florida. The topics covered included data, predictive methods, driving simulation, GIS-based analyses, computational methods, older driver needs, safe routes to school, evacuation modeling, and outreach to small agencies. The symposium followed in a series of technology transfer events organized by the UF Transportation Research Center in collaboration with STRIDE to disseminate research findings from projects funded in part by the Center for Multimodal Solutions for Congestion Mitigation (CMS), a USDOT, grant-funded, Tier-1 University Transportation Center.

CORSIM Workshop & Webinar

A webinar and workshop on using CORSIM to evaluate the impact of various pricing strategies and the management of toll lanes was held at the UF campus on April 29-30, 2013. A total of 42 people participated from consulting firms and state agencies in Florida, Georgia, Virginia, and Washington. The course was taught by Dimitra Michalaka, Ph.D., a former transportation student at UF. CORSIM, a microscopic traffic simulation software program maintained at UF, was recently enhanced to simulate the operations of high occupancy/toll lanes, thanks to a grant by the Center for Multimodal Solutions for Congestion Mitigation (CMS), a USDOT, grant-funded, Tier-1 University Transportation Center at UF.

STRIDE Student Poster Showcase & Competition

The Transportation Research Center at the University of Florida hosted a reception during the 92nd Annual Meeting of the Transportation Research Board along with STRIDE-affiliated faculty, students, and staff. The well-attended reception was held at the Marriott Wardman Park Hotel in Washington, D.C, and included a STRIDE Student Research Poster Competition. Twenty-nine posters from students representing the partner institutions were selected for presentation. The winners of the student poster competition were Jay Shannon, 1st Place, Mississippi State University; Tabitha Combs, 2nd Place, University of North Carolina at Chapel Hill; and Xuanwu Chen, 3rd Place, Florida International University. Congratulations to these students!
The WTS Florida Gator Student Chapter at the University of Florida hosted their annual signature event, the WTS Transportation Symposium, on November 12, 2013, at the UF campus. The topic of this year’s symposium was “Communication between Women and Men in the Workplace”. Panelists consisted of the following: Dan Plonk, a former University of Florida football offensive lineman, and graduate of the UF College of Mechanical and Aerospace Engineering, currently director of transportation planning at Norfolk Southern. Norfolk Southern is a Fortune 300 company that is one of the nation’s premier transportation companies specializing in freight rail; Dr. Angela Lindner, the Associate Dean for undergraduate student affairs at the University of Florida, who provided coveted insight regarding communication between men and women, from her point of view in the university academic community; Jamie Breme of Fluor, an engineering, procurement, construction, maintenance (EPCM), and project management company, who shared her experiences with the students regarding communication between males and females, as well as some of her personal experiences at the company. The fourth panelist was Jessica Grant, of the Florida Department of Transportation, who shared her experiences in the transportation field, since her recent graduation from the University of Florida.
K-12 Workforce Development

Family Engineering Night (FEN) is an informal engineering education program designed for children ages 7 to 12 and their parents or other adult caregivers. MSU, UAB, FIU, and UF are participating in this STRIDE project, and their efforts are summarized below:

On March 30, 2013, UAB held a Family Engineering-type event in collaboration with the Society of Women Engineers with 34 children from the 4th and 5th grades from the surrounding school districts learning about engineering disciplines and took part in experiments related to engineering through fun hands-on activities. UAB students and faculty also talked about careers in general engineering and transportation engineering, in particular to interested parents. The program was well received and a similar program is planned for 2014.

UF ITE, ASCE, and WTS student chapters hosted an evening event in February for 76 Lawton Chiles Elementary school students. The student chapters teamed up again to host a booth at the PK Yonge Research School’s yearly carnival in October where 85 children participated in the hands-on activities.

FIU provided hands-on activities during their Engineering Gala in February’s Engineer Week celebration so that attendees could learn about engineering fields in fun and interactive ways.

During the fall semester, Mississippi State University students conducted a Service Learning Project to develop exciting new transportation activities to add to the existing FEN events. MSU also implemented the Family Engineering Program at eight schools in the southern part of the state reaching 689 students and their parents. In follow-up surveys, parents responded that they were so happy to have learned more about their child’s interests and potential. The parents also shared that they learned a great deal about the fields of engineering and planning with their child for the future.


PRESENTATIONS


Akanser, A., Castrillon, F., Elango, V., and Guensler, R. “Estimation of Sidewalk Grade and Roughness using Accelerometers on Wheelchairs,” Georgia Department of Transportation and Georgia Transportation Institute, Transportation Research Poster Session, Atlanta, Ga., September 2013.


Frickelton, A., Grossman, A., Palinginis, E.,


Hale, D.K., “Automated Self-Calibration and HCM-Based Genetic Algorithm Optimization,” ITE National SimCap Meeting, Boston,


Salamati, K., Schroeder, B., Geruschat, D., and Rouphail, N. “Event-Based Modeling of Driver Yielding Behavior to Pedestrians at Two-Lane Roundabout Approaches,” STRIDE Student Poster Competition at the 92nd Annual Meeting of the
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