

Program Progress Performance Report for University Transportation Centers

U.S. Department of Transportation
Research and Innovative Technology Administration
Federal Grant No. 69A3551747104

Project Title: Southeastern Transportation, Research, Innovation,
Development & Education Center (STRIDE)

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Project Grant Period: 1/19/2017 to 9/30/2022

Reporting Period End Date: 9/30/2018

Reporting Term, Quarterly: PPPR #3 (4/1/2018 to 9/30/2018)



Signature of Submitting Official: _____
Lily Elefteriadou, Ph.D.

1. ACCOMPLISHMENTS (What was done? What was learned?)

a. *What are the major goals of the program?*

- To develop novel strategies for reducing congestion in the southeast and nationally by considering new technologies in vehicles, telecommunications, shared autonomy in transportation, driver/traveler behavior and financial constraints. To do this, we will focus on five research thrusts: Technology, Management, Data, Design and Users.
- To implement the research products developed from these strategies and to make them available to the practitioner community. The STRIDE Center will continue to work closely with state DOTs in the region and other entities via the Center's technology transfer, education and workforce development activities to disseminate the results of our work and facilitate implementation.

b. *What was accomplished under these goals?*

- Year 1 projects are currently in progress. A list of the Year 1 projects is provided at <https://stride.ce.ufl.edu/2017/03/2017-projects/#1524238433188-3e2b98ca-855f>. The website includes the abstract and the UTC Project Information Sheet for each project.
- Year 2 projects have been selected and awarded, and are currently in progress. A total of 18 projects were selected during this grant cycle. Most of these began in August 2018 with two planned to begin in January 2019. The complete list is posted at <https://stride.ce.ufl.edu/2017/03/2017-projects/#1524511915655-0b01a496-94d4>. Year 1 and 2 projects have been entered into the Research in Progress database. The STRIDE website includes the abstract and the UTC Project Information Sheets for each project.
- We continue to closely monitor the progress of the Year 1 and 2 projects via quarterly reports.
- In addition to the quarterly reports, we are planning to hold phone calls with each of the project PIs to discuss project progress and develop technology transfer plans. During these calls we will determine whether there are any obstacles to the completion of the project, and assist with possible solutions. We will also discuss technology transfer plans and how the research team plans to engage stakeholders and make their product(s) available to transportation professionals. We also plan to determine whether the project lends itself for use in K-12 workforce development activities.
- The STRIDE Center's Technology Transfer Plan was approved.
- We hired a K-12/Technology Transfer Coordinator (Ms. Ondine Wells) who has been tasked with developing, shaping and leading K-12 and other transportation workforce initiatives for the STRIDE Center, as well as coordinating technology transfer activities.
- We have organized several K-12 activities earlier in 2017 (July 2017 to February 2017 and into March 2018 and May 2018) that have continued through this performance period and these are summarized at <https://stride.ce.ufl.edu/2018/04/stride-partners-engage-in-k-12-events-across-the-southeast/>.
- STRIDE (and the University of Florida Transportation Institute) hosted Dr. Elise Miller Hooks on April 12, 2018. This seminar was webcast via the H.W. College of Engineering at UF and a recording made available at <https://ufedge.video.ufl.edu/Mediasite/Play/b2dd168c571d4151af9ac2ab7b49fcf1d>. The title of Dr. Miller-Hook's seminar was "Multi-Hazard Resilience Quantification in Transportation Systems and the Societal Functions They Support."

- STRIDE co-sponsored the UF Institute of Transportation Engineers (ITE) Student Leadership Summit held on February 9, 2018. This event was organized by the students in collaboration with ITE International and the ITE Florida Section. A total of 130 people attended this event held on the University of Florida campus. The audience consisted of students from universities in Florida, and several other agencies including Volusia County, Alachua County, Manatee County, Eno Center for Transportation, the University of North Florida, the University of South Florida, and ITE.
- STRIDE co-sponsored the WTS Symposium on Smart Cities. Approximately 50 people attended this event, which was held at the University of Florida campus, and was attended by students, faculty and members of the community including the City of Gainesville, the Florida Department of Transportation (FDOT), and several consultants.
- STRIDE sponsored a Workshop on Data Visualization and Analytics for Transportation Decision Making in December 2017. Fifteen people attended this workshop, mostly from FDOT.
- The STRIDE Center participated in the planning committee and co-sponsored the 6th Annual UTC Conference for the Southeastern Region, which was held at Clemson University. Several STRIDE projects were presented either as an oral or poster presentation and students affiliated with the Center received recognition for their posters and presentations. This conference was held October 24-25, 2018, which is outside this performance period. Detailed information will be provided in the next PPPR.
- The STRIDE Center has partially established its External Advisory Board (EAB). Members of the EAB include representatives from the research offices at state Departments of Transportation. So far, the STRIDE EAB has representation from NC DOT, AL DOT and FDOT, and anticipating confirmation from GDOT, and SC DOT. The STRIDE Center will add other members as necessary. The first meeting of the STRIDE EAB will be held during TRB 2019.
- The UFTI (University of Florida Transportation Institute - the home institute of STRIDE) has been working with FDOT and the City of Gainesville to develop a real-world testbed for advanced transportation technologies (I-STREET: <https://www.transportation.institute.ufl.edu/research-2/istreet-about-us/>) on the UF campus and the surrounding area. This testbed will develop and implement advanced transportation technologies (e.g., connected and autonomous vehicles, smart devices, and sensors) to enhance mobility and safety. STRIDE partners and industry are invited to participate in this endeavor, to create a model nationally and internationally for operationalizing advanced technologies. Several projects are underway under this initiative: the Gainesville Autonomous Transit Shuttle (expected to begin operations in the Spring 2019), the I-75 FRAME project, and the Gainesville SPaT Trapezium project. Several other projects are research-focused and serve as matching projects for STRIDE.

c. How have the results been disseminated?

- We have been disseminating the results of our previous UTC grant through social media, email communications, presentations, and journal articles. As projects are being completed under this grant, the STRIDE Center will continue to use Constant Contact, which is an email marketing platform, to disseminate information related to final

research reports, technology transfer events, various activities, announcements, seminars and conferences.

- Completed research reports will also be posted on the STRIDE website (<https://stride.ce.ufl.edu/2017/03/2017-projects/>) and on our Facebook and Twitter pages.
- STRIDE also uses Facebook and Twitter platforms to disseminate information related to final reports.
- A Facebook and Twitter campaign will be launched to showcase the newly selected Year 2 STRIDE projects. STRIDE will spotlight the lead PI of each project and student(s) working on each project. To see the spotlights posted on FB visit: <https://www.facebook.com/STRIDEUTC/>. To see the spotlights posted on Twitter, visit: <https://twitter.com/STRIDE UTC>.
- The STRIDE Center co-sponsored a Transportation Engineering Workshop on May 22-23, 2018 at Auburn University. A total of 40 people attended this event, which provided an opportunity for transportation engineering faculty to learn of best practices in engineering education.

d. What do you plan to do during the next reporting period to accomplish the goals and objectives?

- We will continue to monitor all Year 1 and Year 2 projects and we will issue a request for proposals for Year 3. Some Year 1 projects are expected to be completed in the next 3 to 6 months. These will go out for peer review and comments to external reviewers. The comments will be made available (anonymously to the PI) for incorporation into the final report. Final reports will be posted on the STRIDE website, disseminated through the Center's social media account (FB and Twitter), and send out as an individual email advertising the final report. Stakeholders actively participating in the project, along with the STRIDE EAB will be asked to forward the final report to other interested individuals.
- We will begin a social media campaign to highlight Year 2 STRIDE projects. We have done this with our Year 1 projects. We ask PIs to provide, in their own words, an "elevator speech" regarding their project and its practical implications. We also highlight a student or two who are working on the specific project to tell us what their work entailed, what their role in the project has been, and what they anticipate doing when they graduate.
- We plan to issue a request for proposals for Year 3 projects in the next couple of months.
- With the hiring of the K-12 Coordinator, Ms. Ondine Wells, we anticipate that a variety of new events will take place at the University of Florida and across the consortium.
- STRIDE will help co-organize the 7th Annual UTC Conference for the Southeast, which will be hosted either at North Carolina State University or at Florida Atlantic University. The STRIDE Center serves on the planning committee and will be one of the co-sponsors of this event.
- STRIDE will continue to host transportation seminars for students, faculty and staff
- We plan to continue hosting distinguished speakers and making their presentations available as a webcast.

- The STRIDE Center’s Technology Transfer Plan, which was approved during this time period, will be set in motion. We will begin monitoring all STRIDE research activities and ensure they align with our Plan.
- The STRIDE Center’s EAB is nearly complete and will meet during TRB 2019.

2. PARTICIPANTS & COLLABORATING ORGANIZATIONS *(Who has been involved?)*

Below are the organizations that the STRIDE Center and its consortium members already have a relationship with. Most state DOTs provide cost-share, while other entities provide a variety of contributions (in-kind, facilities, collaborative research, personnel exchanges). This table has been updated since PPPR #2. Updates appear in green.

Organization Name	Location of Organization	Contribution Type
Georgia Regional Transportation Authority (GRTA)	Atlanta, GA	In-kind
Metropolitan Atlanta Rapid Transit Authority (MARTA)	Atlanta, GA	In-kind
Oak Hammock	Gainesville, FL	In-kind
County of Volusia	Florida	Participation in ITE Summit
Alachua County Public Works	Florida	Participation in ITE Summit
Manatee County	Florida	Participation in ITE Summit
ENO Center for Transportation	Washington, D.C.	Participation in ITE Summit
ITE (Florida Section)	Florida	Participation in ITE Summit
Benedict College	Columbia, SC	Participation in 5 th UTC Conf.
Florida Atlantic University	Boca Raton, FL	Participation in 5 th UTC Conf.
Georgia Southern University	Statesboro, GA	Participation in 5 th UTC Conf.
Louisiana State University	Baton Rouge, LA	Participation in 5 th UTC Conf.
TranSET	Region 6 UTC	Participation in 5 th UTC Conf.
University of Alabama - Huntsville	Huntsville, AL	Participation in 5 th UTC Conf.
University of Louisiana -Lafayette	Lafayette, LA	Participation in 5 th UTC Conf.
University of Memphis	Memphis, TN	Participation in 5 th UTC Conf.
University of North Florida	Jacksonville, FL	Participation in 5 th UTC Conf.
University of South Carolina	Columbia, SC	Participation in 5 th UTC Conf.
Virginia Tech	Blacksburg, VA	Participation in 5 th UTC Conf.
AECOM	Los Angeles, CA (headquarters)	Participation in ITE Summit
Alachua County Public Works	Florida	Participation in ITE Summit
Albeck Gerken, Inc.	Tampa, FL	Participation in ITE Summit
Alfred Benesch & Company	Jacksonville, FL	Participation in ITE Summit
Applied Information, Inc.	Suwanee, GA	Participation in ITE Summit
Arcadis	Baton Rouge, LA	Participation in ITE Summit

Atkins	Tampa, FL	Participation in ITE Summit
Ayres Associates	Jacksonville, FL	Participation in ITE Summit
BlueMAC Analytics	Portland, OR	Participation in ITE Summit
CHW	Alachua, FL	Participation in ITE Summit
City of Gainesville	Gainesville, FL	Participation in ITE Summit
Florida A&M University	Tallahassee, FL	Participation in ITE Summit
Florida Polytechnic University	Lakeland, FL	Participation in ITE Summit
George F. Young Transportation Consultants	Gainesville, FL	Participation in ITE Summit
HNTB Corporation	Tallahassee, FL	Participation in ITE Summit
ITE International	Washington, D.C.	Participation in ITE Summit
Iteris	Santa Ana, CA	Participation in ITE Summit
Kimley-Horn	Orlando, FL	Participation in ITE Summit
LTG, Inc	Ormond, FL	Participation in ITE Summit
NDS-National Data & Surveying Services	Plantation, FL	Participation in ITE Summit
OPTYM	Gainesville, FL	Participation in ITE Summit
RS&H	Jacksonville, FL	Participation in ITE Summit
Temple Inc.	Ormond, FL	Participation in ITE Summit
Traffic Technology Services	Beaverton, FL	Participation in ITE Summit
TrafficCast	Riviera Beach, FL	Participation in ITE Summit
Trafficware Group, Inc.	Sarasota, FL	Participation in ITE Summit
VeryLargeOneManFirm.com	Ray City, GA	Participation in ITE Summit
VHB	Tampa, FL	Participation in ITE Summit
via planning, inc.	Fort Lauderdale, FL	Participation in ITE Summit
Vision Engineering and Planning	Orlando, FL	Participation in ITE Summit
WSP	Orlando, FL	Participation in ITE Summit
WTS (South Florida Chapter)	Miami, FL	Participation in ITE Summit
Jacksonville MPO	Jacksonville, Fla.	Various
LYNX Transit Agency	Orlando, Fla.	Various
Orlando-Orange County Expressway Authority	Orlando, Fla.	Various
Florida Highway Patrol	Florida	Various
Kittelson & Associates	Various locations in the U.S.	Various
Cambridge Systematics	Various locations in the U.S.	Various
FDOT Districts 2, 4, 5, & 6	Lake City, Ft. Lauderdale, Deland and Miami	Various
Atlanta Regional Commission		Various
Cobb County	Georgia	Various
City of Atlanta	Georgia	Various
Community Improvement Districts (Buckhead, Cobb, Perimeter)	Georgia	Various

Atlanta Chamber of Commerce	Atlanta, Ga.	Various
Oak Ridge National Labs	Tennessee	Various
U.S Army Corp of Engineering	Vicksburg, Miss.	Various
Regional Planning Commission of Greater Birmingham	Birmingham, Ala.	Various
City of Birmingham	Birmingham, Ala.	Various
IBM (Smarter Cities Challenge)		Grant i-STREET
The Triangle Regional Model Service Bureau	North Carolina	Various
Durham-Chapel Hill Carrboro MPO	North Carolina	Various
Jacobs Engineering	Boynton Beach, Fla.	UTC Conference Sponsorship
Enforcement Engineering, Inc.	Jacksonville, Fla.	UTC Conference Sponsorship
Clemson University	Clemson, South Carolina	UTC Conference Sponsorship
North Carolina A&T State University	Greensboro, North Carolina	UTC Conference Sponsorship
ABC-UTC Florida International University	Miami, Fla.	UTC Conference Sponsorship
Transportation Research Board	Washington, D.C.	UTC Conference Sponsorship
UNC Highway Safety Research Center	Chapel Hill, North Carolina	UTC Conference Sponsorship
Freight Mobility Research Institute/Florida Atlantic University	Boca Raton, Fla.	UTC Conference Sponsorship
Florida State University/Florida A&M	Tallahassee, Fla.	UTC Conference Sponsorship
University of South Florida/Center for Urban Transportation Research	Tampa, Fla.	UTC Conference Sponsorship
Southeastern Transportation Center/University of Tennessee	Knoxville, Tenn.	UTC Conference Sponsorship

3. OUTPUTS (What new research, technology or process has the program produced?)

a) Publications, conference papers, and presentations

- Asgari, H., & Jin, X. (2017). An Evaluation of Part-Day Telecommute Impacts on Work Trip Departure Times. *Travel Behavior and Society*.
<https://doi.org/10.1016/j.tbs.2017.04.002>.

- Asgari, H., & Jin, X. (2017). The Impacts of Telecommuting on Non-Mandatory Activity Participation: the Role of Endogeneity. *Transportation Research Record: Journal of the Transportation Research Board*, 2666.<http://dx.doi.org/10.3141/2666-06>.
- Classen, S., Jeghers, M., Medhizadah, S., Winter, S. M., King, L, Struckmeyer, L., Pre-conference workshop: Autonomous vehicles and medically at-risk-drivers through the lifespan: Role, function and future directives for the driver rehabilitation specialist. The Association for Driver Rehabilitation Specialists 2017 Conference, Richmond, Virginia, Aug 10-14, 2018.
- Classen, S. General session: Autonomous vehicles and medically at-risk-drivers through the lifespan: Role, function and future directives for the driver rehabilitation specialist. The Association for Driver Rehabilitation Specialists 2017 Conference, Richmond, Virginia, Aug 10-14, 2018.
- De Andrade, G., L. Elefteriadou, "Relationship between Crash Rate and Mobility on Expressways", submitted for publication, *ASCE Journal of Transportation Engineering*, September 2018.
- De Andrade, G., L. Elefteriadou, M. Hadi, V. Khanapure, "Method for Assessing the Effect of Input Parameters on Multi-Objective Optimization of Signal Control", submitted for publication, *ASCE Journal of Transportation Engineering*, September 2018.
- Fartash, H., M. Hadi, and R. Ponnaluri, "Methodology to Identify On-Ramps for Metering with Consideration of System-Wide Recurrent and Non-Recurrent Congestion," Accepted for Publication *Transportation Research Record, Journal of the Transportation Research Board*, Washington D.C., 2018.
- Gasulla, M.M., L. Elefteriadou, "Single Lane Roundabout Manager under Fully Automated Vehicle Environment", submitted for publication, and accepted for presentation at the Transportation Research Board Annual Meeting, October 2018 (Paper number 19-03304).
- Hadi, M., T. Wang, and Y. Xiao. Technology Evaluation for Detecting Lane Changing Movement Final Report Prepared by Lehman Center for Transportation Research Department of Civil and Environmental Engineering, Florida International University for Florida Department of Transportation District Six, May 2018.
- Hadi, M., T. Wang, and Y. Xiao. SW 8th Street Adaptive Signal Control Phase 2. Final Report, Prepared for Florida Department of Transportation District 6, January, 2018.
- Hadi, M., T. Wang, and Y. Xiao. SR 924/NW 119th Street Adaptive Signal Control Evaluation Plan and High Resolution Controller Data, Prepared for Florida Department of Transportation District 6, April, 2018.
- Hadi, M.A., Y. Xiao, T. Wang, H. Fartash, M.T. Tariq, and N. Sharmin, Guidelines for the Evaluation of Ramp Signaling Deployments in a Real-Time Operations Environment, Final Report produced for FDOT Research Center contract FDOT Project BDV29-977-25, January 2018.
- Hadi, M.A., Proportions on the Accuracy and Reliability of Travel Time Estimation, *IEEE Transactions on Intelligent Transportation Systems*, DOI: 10.1109/TITS.2018.2797917, February 2018.

- Hossan, M. S., Asgari, H., & Jin, X. (2017). Incorporating Trip Misreporting Behavior in Trip Generation Model with GPS- Assisted and Diary-Based Survey. Transportation.
- Iqbal, M.S., Khazraeian, S. and M. Hadi, "A Methodology to Assess the Quality of Travel Time Estimation and Incident Detection Based on Connected Vehicle Data", Accepted for publication at Transportation Research Record: Journal of the Transportation Research Board, 2018.
- Jin, X. (2018). Incorporating Attitudinal Aspects in Roadway Pricing Analysis. Transport Policy, 62, 38–47.
- Jin, X. (2018). An Investigation of Tour Generation Models Combining Two Waves of Household Travel.
- Surveys through Pooled Models. Transportation Planning and Technology, 41, 229–243.
- Jin, X. (2018). A Stated Preference Survey Approach to Understanding Mobility Choices in Light of Shared Mobility Services and Automated Vehicle Technologies in the US. Transportation Research Record.
- Jin, X. (2018). Examining the Willingness to Switch to Mobility as a Service Based on Expected Travel Time and Cost Savings. Travel Behavior and Society.
- Jin, X. (2018). Incorporating Habitual Behavior into Mode Choice Modeling in Light of Emerging Mobility Services. Transportation Research Part C: Emerging Technologies.
- Karmakar, Roupail, and Williams. Validation and Calibration of Freeway Reliability Methodology in the Highway Capacity Manual: Method and Case Studies.
- Khazraeian, S. and M. Hadi, "Monte Carlo Simulation-Based Benefit-Cost Analysis Combined with Analytical Hierarchical Process to Support ITS Investment with Consideration of Connected Vehicle Technology," Accepted for publication at Transportation Research Record: Journal of the Transportation Research Board, 2018.
- Li, Z., M. Pourmehrab, L. Elefteriadou, S. Ranka, "Intersection Control Optimization for Automated Vehicles Using Genetic Algorithm", Accepted for publication, ASCE Journal of Transportation Engineering, June 2018.
- List, Roupail, Russ Smith, and Williams - "Reliability Assessment Tool - Development and Prototype Testing - TRR In press.
- M. Pourmehrab, L. Elefteriadou, and S. Ranka, Smart Intersection Control Algorithms for Automated Vehicles, Tenth International Conference on Contemporary Computing (IC3 2017), 2017, November 2017.
- Nabaruna Karmakar, Aghdashi, Roupail, and Williams - "Validation and Calibration of Freeway Reliability Methodology in the Highway Capacity Manual: Method and Case Studies" - TRR In Press.
- Omidvar, A., M. Pourmehrab, P. Emami, R. Kiriazes, J. Esposito, C. Letter, L. Elefteriadou, C. Crane, S. Ranka, "Deployment and Testing of Optimized Autonomous and Connected Vehicle Trajectories at a Closed-Course Signalized Intersection", accepted for publication, Journal of the Transportation Research Board, February 2018.

- P. Emami, L. Elefteriadou, and S. Ranka, Tracking Vehicles Equipped with Dedicated Short-Range Communication at Traffic Intersections, Seventh ACM International Symposium on Design and Analysis of Intelligent Vehicular Networks and Applications (DIVANet'17), 2017.
- Ramadan, O.E., and Sisiopiku V.P. (2018). "Modeling Highway Performance under Various Short-Term Work Zone Configurations". Accepted for publication in ASCE Journal of Transportation Engineering, Part A: Systems, Vol. 144, No 9. DOI: 10.1061/JTEPBS.0000176.
- Sisiopiku, V. (2018). "Travel Patterns and Preferences of Urban University Students". Athens Journal of Technology & Engineering, Vol. 5(1), March 2018, pp. 19-31.
- Sisiopiku, V. P., & Ramadan, O. E. (2018). Understanding Women's Needs as Determinants of Mode Choice: A Case Study of The University of Alabama at Birmingham. TRB 97th Annual Meeting Compendium of Papers, Paper № 18-02860.
- Sisiopiku, V. and Rostami-Hosuri, S. (2017). "Congestion Quantification using the National Performance Management Research Data Set", Data: Special Issue on Transportation Data, 2(4), 39; doi: 10.3390/data2040039.
- Shams, K., Jin, X., Asgari, H., & Hossan, M. S. (2017). Value of Reliability for Road Freight Transportation: Evidence from a Stated Preference Survey in Florida. Transportation Research Record: Journal of the Transportation Research Board, 2610. <http://dx.doi.org/10.3141/2610-05>.
- Wang, F., "Two-phase method for optimizing dynamic ride-sharing with transfers in a short-notice evacuation", submitted to 2019 TRB for review.
- Wang, F., "Game Approach to Vulnerability Analysis of Evacuation Highway Networks", under revision review by J. of Transp. Engineering.
- Wang, F., "Macroscopic Fundamental Diagram Based Discrete Transportation Network Design", submitted to 2019 TRB for review.
- Warchol, Roupail, Vaughan, and Kearns "Queue-Based Guidance for Signalization Consideration at Two and Three Legged Intersections" - TRB accepted for presentation.

b) **Website(s) or other Internet site(s)**

- The STRIDE Center's website: (<https://stride.ce.ufl.edu/>)
- Facebook (<https://www.facebook.com/southeasterntransportationcenter>)
- Twitter page (<https://twitter.com/STRIDE.UTC>)

c) **Technologies or techniques** – Nothing to report yet.

d) **Inventions, patent applications and/or licenses** - Nothing to report yet

e) **Other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments, or equipment** – Nothing to report yet.

4. Outcomes (What outcomes has the program produced? How are the research outputs described in section 3 above being used to create outcomes?)

We anticipate that our high level of engagement with practitioners will enhance our research products and will provide tangible solutions for transportation problems. The involvement of undergraduate and graduate students enhances the understanding and awareness of transportation issues and prepares the workforce of the future. Our extensive publicity campaigns through social media, email, and conferences help disseminate the findings and products developed by STRIDE.

5. Impact (What is the impact of the program? How has it contributed to transportation education, research and technology transfer?)

- a) Impact on the Effectiveness of the transportation system? Nothing to report yet.
- b) What is the impact on the adoption of new practices, or instances where research outcomes have led to the initiation of a start-up company? Nothing to report yet.
- c) What is the impact on the body of scientific knowledge? Several papers have been published that are related to STRIDE and projects used as cost share (see Section #3 Outputs, publications), which make a contribution to the body of knowledge in transportation.
- d) What is the impact on transportation workforce development? Several graduate and undergraduate students are funded by STRIDE projects across the consortium. At the University of Florida, STRIDE has funded two summer interns during this period, of which one started graduate studies this fall semester.

6. Changes/Problems

- **Changes in approach and reasons for change** – Nothing to report
- **Actual or anticipated problems or delays and action or plans to resolve them** - Nothing to report
- **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

7. Special Reporting Requirements

- Nothing to report

STRIDE Year 1 List of Projects:

Congestion Management in the Era of Decentralized Traveler Information

Lead PI: Dr. Mike Hunter, Georgia Institute of Technology

Team: Dr. Mohammed Hadi, Florida International University; Dr. A. Guin, Georgia Institute of Technology; Dr. Billy Williams, North Carolina State University; Dr. Feng Wang, Jackson State University

Technology Influence on Travel Demand & Behavior

Lead PI: Dr. Virginia Sisiopiku, University of Alabama at Birmingham

Team: Dr. Noreen McDonald, University of North Carolina at Chapel Hill; Dr. Ruth Steiner, University of Florida; Dr. Mohammed Hadi, Florida International University

Performance Measurement & Management Using Connected & Automated Vehicle Data

Lead PI: Dr. Mohammed Hadi, Florida International University; Dr. Nagui Rouphail, North Carolina State University; Dr. Virginia Sisiopiku, University of Alabama at Birmingham; Dr. Siva Srinivasan, University of Florida; Dr. Sanjay Ranka, University of Florida

Traffic Management with Autonomous and Connected Vehicles

Lead PI: Dr. Lily Elefteriadou, University of Florida

Team: Dr. Mike Hunter, Georgia Institute of Technology; Dr. C. White, Georgia Institute of Technology; Dr. Sanjay Ranka, University of Florida; Dr. Carl Crane, University of Florida

Predicting Congestion: The Challenge of Shifting Travel Behavior on Estimating Trip Generation

Lead PI: Dr. Ruth Steiner, University of Florida

Team: Dr. Noreen McDonald, University of North Carolina at Chapel Hill

Integrated Implementation of Innovative Designs

Lead PI: Dr. Nagui Rouphail, North Carolina State University

Team: Dr. Chris Cunningham, North Carolina State University; Dr. Steven Click, Tennessee Technological University; Dr. Mike Hunter, Georgia Institute of Technology; and Dr. Jeff Davis, The Citadel

Transit in the Era of Shared Mobility

Lead PI: Dr. Kari Watkins, Georgia Institute of Technology

Team: Dr. Billy Williams, North Carolina State University; Dr. Ruth Steiner, University of Florida; Dr. Noreen McDonald, University of North Carolina at Chapel Hill

Work Zone Planning, Design, & Operations

Lead PI: Dr. Rod Turochy, Auburn University

Team: Dr. Virginia Sisiopiku, University of Alabama at Birmingham; Dr. Billy Williams, North Carolina State University; Dr. James Tsai, Georgia Institute of Technology

Strategies for Mitigating Congestion in Small Urban & Rural Areas

Lead PI: Dr. Steven Click, Tennessee Technological University

Team: Dr. Siva Srinivasan, University of Florida; Dr. Mike Hunter, Georgia Institute of Technology

Freeway Management for Optimal Reliability

Lead PI: Dr. Yafeng Yin, University of Michigan

Team: Dr. Nagui Rouphail, North Carolina State University; Dr. Jorge Laval, Georgia Institute of Technology; Dr. Rod Turochy, Auburn

STRIDE Year 2 List of Projects:

Changing Access to Public Transportation & the Potential for Increased Travel

Lead PI: Dr. Kari Watkins, Georgia Institute of Technology

Team: Dr. Noreen McDonald, University of North Carolina at Chapel Hill; Dr. Eleni Bardaka, North Carolina State University; Dr. Ruth Steiner, University of Florida; Dr. Ilir Bejleri, University of Florida

Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data

Lead PI: Dr. Huaguo Hugo Zhou, Auburn University

Co-PI: Dr. Rod Turochy, Auburn University

Urban Freight & Planning

Lead PI: Dr. Noreen McDonald, University of North Carolina at Chapel Hill

Co-PI: Dr. Ruth Steiner, University of Florida

UF & UAB's Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology

Lead PI: Dr. Sherrilene Classen, University of Florida

Team: Dr. Carl Crane, University of Florida; Dr. Virginia Sisiopiku, University of Alabama at Birmingham

Establishing a Dual Generational Modality Dataset: Comparing the Riding-Sharing Adoption Trends & Perspectives of Consumers of From Two Generational Cohorts, Millennials & Gen X'ers

Lead PI: Dr. Abhinav Alakshendra, University of Florida

Team: Dr. Ruth Steiner, University of Florida; Dr. Allie Thomas, University of North Carolina at Chapel Hill

Integrated Implementation of Innovative Intersection Designs Part 2

Lead PI: Dr. Nagui Rouphail, North Carolina State University

Team: Chris Cunningham, North Carolina State University; Shannon Warchol, North Carolina State University

Discovering Potential Market for the Integration of Public Transportation & Emerging Shared-Mobility Services

Lead PI: Dr. Lili Du, University of Florida

Co-PI: Dr. Xia Jin, Florida International University

Quantitatively Evaluate Work Zone Driver Behavior Using 2D Imaging, 3D LiDAR, & Artificial Intelligence in Support of Congestion Mitigation Model Calibration & Validation

Lead PI: Dr. Yichang (James) Tsai, Georgia Institute of Technology

Co-PI: Dr. Rod Turochy, Auburn University

Fly-By Image Processing for Real Time Congestion Mitigation

Lead PI: Dr. Nasim Uddin, University of Alabama at Birmingham

Co-PI: Dr. Billy M. Williams, P.E., North Carolina State University

Mitigating Network Congestion by Integrating Transportation Network Companies & Urban Transit

Lead PI: Dr. Virginia Sisiopiku, University of Alabama at Birmingham

Team: Dr. Ossama E. Ramadan, P.E., University of Alabama at Birmingham

Dr. Mohammed Hadi, P.E., Florida International University; Dr. Yan Xiao, P.E., Florida International University

Real-Time Data-Based Decision Support System for Arterial Traffic Management

Lead PI: Dr. Mohammed Hadi, P.E., Florida International University

Team: Dr. Clark Letter, University of Florida

Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses

Lead PI: Dr. Behzad Aghdashi, Institute for Transportation Research and Education, North Carolina State University

Team: Dr. Lily Elefteriadou, University of Florida; Dr. Nagui Roupail, North Carolina State University

Understanding Relationships between the Built Environment, Physical Activity, Public Health, Urban Mobility, and Traffic Congestion: Graduate Curriculum Development

Lead PI: Dr. Dimitra Michalaka, The Citadel

Team: Dr. William J. Davis, The Citadel; Dr. Daniel Bornstein, The Citadel; Dr. Kweku Brown, The Citadel; Dr. John Vena, Medical University of South Carolina

Comparing and Combining Existing and Emerging Data Collection and Modeling Strategies in Support of Signal Control Optimization and Management

Lead PI: Dr. Mohammed Hadi, P.E., Florida International University

Team: Dr. Virginia Sisiopiku, University of Alabama at Birmingham; Dr. Yan Xiao, P.E., Florida International University; Dr. Ossama Ramadan, P.E., University of Alabama at Birmingham

Data Fusion for Signalized Arterial Performance Measurement

Lead PI: Thomas Chase; Institute for Transportation Research and Education, North Carolina State University

Co-PI: Dr. Nagui Roupail, North Carolina State University

Macroscopic Fundamental Diagram Approach to Traffic Flow with Autonomous/Connected Vehicles

Lead PI: Dr. Robert W. Whalin, P.E., Jackson State University

Team: Guojing Hu, Jackson State University

Development of Guidance for Scheduling of Freeway Work Zones to Minimize Congestion Impacts

Lead PI: Dr. Rod Turochy, P.E., Auburn University

Team: Dr. Virginia Sisiopiku, University of Alabama at Birmingham; Dr. Ossama Ramadan, P.E., University of Alabama at Birmingham

Cost Share Projects To-Date

Before and After Implementation Studies of Advance Signal Technologies in Florida

PI: Dr. Lily Elefteriadou, University of Florida

FDOT # BDV32-977-05

Evaluation of Arterial Corridor Improvements and Traffic Management Plans in Florida

PI: Dr. Lily Elefteriadou, University of Florida

FDOT # BDV31-977-44

Development and Testing of Optimized Autonomous and Connected Vehicle Trajectories at Signalized Intersections

PI: Dr. Lily Elefteriadou, University of Florida; Dr. Carl Crane, University of Florida; Dr. Sanjay Ranka, University of Florida

FDOT # BDV31-977-45

Transportation Safety Center

PI: Maria Cahill, AICP; UFTI/T2 Center; Dr. Siva Srinivasan, University of Florida; Dr. Ilir Bejleri, University of Florida

FDOT # BDV33-945-002

Improvements to the FDOT Travel Time Reliability Model for Freeway Analysis

PI: Dr. Lily Elefteriadou, University of Florida

FDOT # BDV32-934-01

Local Technical Assistance Program for Transportation Agencies 2016-2017

PI: Maria Cahill, AICP, UFTI/T2 Center

FDOT # BDV33-977-04

Safe Routes to School Technical Assistance 2017

PI: Dr. Ruth Steiner, University of Florida; Bill Sampson, P.E., UFTI/T2

FDOT # BDV33-945-04

Local Technical Assistance Program for Transportation Agencies 2017-2018

PI: Matthew Muller, UFTI/T2 Center

FDOT # BDV33-977-05

University of Florida (UF) Testbed Initiative- Alternative Transportation Safety Systems

Dr. Clark Letter, University of Florida; Dr. Nithin Agarwal, University of Florida

FDOT # BDV31-977-99

Assessment of Connected Vehicle Data Support of SunGuide® Traffic Management Center

PI: Dr. Mohammed Hadi, Florida International University

FDOT # BDV29 TWO 977-21

Guidelines for the Evaluation of Ramp Signaling Deployments in a Real-Time Operations Environment

PI: Dr. Mohammed Hadi, Florida International University

FDOT # BDV29 TWO 977-25

Data and Modeling Support of Off-Line and Real-Time Decisions Associated with Integrated Corridor Management

PI: Dr. Mohammed Hadi, Florida International University
Sponsor: FDOT

Estimation of System Performance and Technology Impacts to Support Future Year Planning

PI: Mohammed Hadi, Florida International University
FDOT # BDY29 977 -37

Connected Vehicle Vehicle-to-Infrastructure Support of Active Traffic Management

PI: Dr. Mohammed Hadi, Florida International University
FDOT # BDV29 977-41

Transportation Research, Workforce Development, and Technology Transfer Initiatives for Reducing Congestion in Alabama and the Southeast U.S.

PI: Dr. Virginia Sisiopiku, University of Alabama at Birmingham
Sponsor: Alabama Department of Transportation
ALDOT # 930-973

FREEVAL-NC Development, Training and Support (2017-46)

PI: Dr. Behzad Aghdashi, North Carolina State University
Sponsor: North Carolina Department of Transportation

Reliability Data and Analysis Tools Implementation Assistance Program Proof of Concept Pilot Study (SHRP2 L38)

PI: Dr. Billy Williams, North Carolina State University
Sponsor: North Carolina Department of Transportation

Peak Spreading Tool Implementation (2018-07)

PI: Sarah Searcy, Research Associate, North Carolina State University
Sponsor: North Carolina Department of Transportation

Warrant Development for Signalization of Superstreet Intersections with Two or Three Approaches (2017-11)

PI: Shannon Warchol, Research Associate, North Carolina State University
Sponsor: North Carolina Department of Transportation

Reasonable Alternatives for Grade-Separated Intersections (2018-20)

PI: Shannon Warchol, North Carolina State University
Sponsor: North Carolina Department of Transportation