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ACCOMPLISHMENTS

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 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 continues to work closely with state DOTs in the region and other stakeholders via the Center's technology transfer, education and workforce development activities to disseminate the results of our work and facilitate implementation.

What was accomplished under these goals?

- STRIDE participated in the May 2019 UTC Spotlight Conference and showcased a poster on *Strategies for Alleviating Congestion*. Dr. Lily Elefteriadou, director of the STRIDE Center, was the conference chair. As conference chair, Dr. Elefteriadou addressed the audience at the Russell Senate Office Building where she spoke about how UTCs solve the puzzle of a complex transportation system. To see a video of the talk, [click here](#).
- A webinar related to STRIDE Project G - *Transit in the Era of Shared Mobility* (Project G) - led by Dr. Kari Watkins of GaTech, was held on June 12, 2019, via Zoom. The webinar, titled *Compacting Transit Agency Peer Groups using Cluster Analysis*, was focused on the clustering of metropolitan regions by mode family, separating mixed and dedicated right-of-way to categorize ridership trends. A video of the webinar is provided at <https://www.youtube.com/watch?v=yKbexi-cpZ0&feature=youtu.be>.
- The STRIDE Center's External Advisory Board (EAB) and Internal Steering Committee (ISC) members met on July 15, 2019, during the Autonomous Vehicles Summit in Orlando, Florida. Several principal investigators presented their projects and EAB members provided feedback on technology transfer activities and stakeholders to reach out to.
- STRIDE hosted a student poster session on July 16, 2019, during the Autonomous Vehicles Summit, in Orlando, Florida. The poster session showcased work from students affiliated with UTCs in the Southeastern region. A total of 23 posters were displayed during the summit. The poster session was announced at <https://www.automatedvehiclessymposium.org/program/call-posters>. A list of the posters associated with the STRIDE can be found [here](#).
- Dr. Richard Croley, Assistant Director and Licensing Officer at UF Innovate, was invited to speak to STRIDE-affiliated faculty at the University of Florida on the process of licensing and commercialization. His presentation took place on August 23, 2019.
- A webinar related to STRIDE Project G - *Transit in the Era of Shared Mobility* – was presented by co-PI Dr. Noreen McDonald on September 8, 2019. The webinar was titled: *Innovation in Access to Healthcare: Understanding Transport Barriers*. The webinar focused on shedding light on those who face transportation barriers for healthcare, the disruption of traditional models of healthcare transportation through policy and technology innovation, and emerging options for health and transport agencies. A video of the talk is provided at https://www.youtube.com/watch?v=4Rm4CAJ_7JQ&feature=youtu.be.
- The STRIDE Center is one of the sponsors of the 7th Annual UTC Conference for the Southeastern Region. STRIDE initiated this conference series and is actively engaged with organizing this year's conference. A call for abstracts and proposals for workshops was distributed in October 2019. The conference will be held in March 2020 and the host is Florida Atlantic University (UF is a partner of the FAU consortium). The STRIDE Center organized and held the first conference in the series in fall 2013. Since then, several UTCs in the region have hosted this conference. The conference is open and invites participation from non-UTC designated universities, as well as from the private and public sectors.

- Work is in progress on a training workshop related to FDOT-funded project (cost share project) *Estimation of System Performance and Technology Impacts to Support Future Year Planning (BDY29-977-39)*. STRIDE has communicated with the PI and will assist with the coordination.
- Work is in progress related to the creation of an I-STREET training program. Trainings will include lessons learned on the implementation of advanced technologies studied and tested in the I-STREET research projects.
- Year 3 Projects: The proposals submitted focus on Big Data/Analytics; Autonomous/Connected Vehicles; Detours, Planned Events and Incidents; and Shared Mobility. Most of these are completing the peer-review process, and one of them has already been awarded (Dr. Sherrilene Classen's project on *UF & UAB's Phase 2 Demonstration Study: Developing a Model to Support Transportation System Decisions considering the Experiences of Drivers of all Age Groups with Autonomous Vehicle Technology*). We expect the remaining projects will begin mid- to late November. A list of the projects tentatively selected for Year 3 are listed at the end of this report and will be posted on the STRIDE website at <https://stride.ce.ufl.edu/research-2/active-research-projects/>.
- The STRIDE website <https://stride.ce.ufl.edu/> was updated and migrated to a template that meets the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973.
- Ms. Sahila Sarjana was named the recipient of the UAB National Alumni Society Mobola Kukoyi Scholarship. She is a Graduate Research Assistant at the TREND Lab working on transportation users' perceptions and attitudes toward Transportation Network Services (TNC) such as Uber and Lyft. The award was presented on 10/1/19.
- All STRIDE final reports are reviewed for 508 compliance requirements for accessibility.
- Eighty students (undergrad and graduate) and post-docs were supported by either STRIDE funding or matching, cost-share projects.
- K-12 Outreach Activities - During the reporting period, K-12 outreach was conducted at the University of Florida (UF), The Citadel, the University of Alabama at Birmingham (UAB), and Tennessee Technical University (TTU) through in-school programming, community/family events, girls in engineering programs, and teacher training. A total of 1,700 contact hours of were provided to 600 students and 25 teachers in transportation engineering outreach through these combined efforts. Several in-school and out-of-school programs were delivered.

K-12 STEM: In-School Programs:

- UF provided a 4-part engineering design workshop to twenty-two 4th and 5th grade students in the 21st Century Community Learning Center at Stephen Foster Elementary School where 60% of the students are from low-income families.
- UF participated in Career Days at four elementary schools with large low-income populations: Norton Elementary (49%), Williams Elementary (71%), Metcalfe Elementary (86%), and Lake Forest Elementary (90%). More than 300 3rd and 4th grade students learned about transportation and engineering careers and completed STEM engineering design projects.
- UF launched a Future City Middle School Club at Howard Bishop Middle School. Six students participate in a weekly meeting where they learn about engineering and urban planning in order to design a city set 100 years in the future. Mentors from UF and the Alachua County Growth Management Department provide support and guidance as students complete a project plan, a virtual city, an essay, a scale model, and a presentation in preparation for a regional competition in January 2020.

K-12 STEM: Beyond the Classroom (out of school) Programs:

- The Citadel's Civil Engineering Department welcomes prospective 16- to 18-year-old students to observe college student life through firsthand observation and engagement. Student recruits (pre-knobs) declare the academic major in which they are interested and spend time at that department when they visit the campus. Additionally, high school students shadow a civil

engineering freshman student and spend the night in The Citadel dormitories (barracks), joining in family-style dining at the campus Mess Hall, and attending engineering classes. Pre-knobs learn about transportation engineering, see previous highway design projects, learn about research projects, and commonly attend a transportation engineering course while visiting the Department. Fifteen students participated in the Pre-knob program in September 2019.

- The University of Alabama at Birmingham (UAB) launched an Engineering Boot Camp program with 17 middle and high school students on September 21, 2019. Students in the program attend 10 monthly workshops between September 2019 and May 2020 and a weeklong summer program in June 2020. During the program, students will learn about autonomous vehicles and emerging transportation systems and will work in teams to design an autonomous vehicle.
- The UF STRIDE Center in collaboration with the UF student chapter of the Institute of Transportation Engineers (ITE) hosted a children’s activity booth on Saturday, September 14, 2019 at the 10th Annual Fun 4 Gator Kids Touch-A-Truck event held on the Santa Fe College campus. Nearly 10,000 people attended the event where children were encouraged to get up close and touch over 80 construction, farm, emergency, military, public service vehicles, and cranes. Eight students volunteered with the STRIDE/ITE booth that included a LEGO® Race Car activity where children made their own race car out of LEGO®s and raced it down a ramp. A couple of the ramps included a textured road surface such as the “Rocky Road” where children could test how their vehicle’s speed or agility changed with added friction. Older children and adults learned about Light Detection and Ranging (LIDAR) technology through a demonstration from the UF Center for Intelligent Machines and Robotics (CIMAR).
- K-12 STEM: Girls in Engineering
 - The University of Alabama at Birmingham held its annual Girls in Science and Engineering Day (GSED) on May 11, 2019. Eighty-three 6th to 8th grade girls attended the event, representing 32 different schools from north-central Alabama. The event also engaged 62 throughout the day. Similar to past GSED events, the 2019 UAB GSED program aimed at introducing young female middle school students to the world of engineering and sciences through hands-on activities and interactions with successful women in STEM fields. Girls also participated in a fun scavenger hunt, which challenged their creativity as they moved between workshops. After the event, 95% said that they feel like they will be able to more easily find information about careers in science and engineering (as compared to 19% before the event).
 - UF led an activity on complete streets with 14 middle school girls participating in the Women in Science and Engineering (WISE) Spring Break Camp at the University of Florida in April 2019.
- K-12 STEM: Summer Programs
 - The Citadel (Dr. Michalaka) led a ‘Tour of Engineering’ week-long (30 hrs) summer camp on engineering at the South Carolina Governor’s School of Science and Mathematics (SCGSSM) in Hartsville, SC to 16 rising 9th and 10th graders June 23-29, 2019. Students learned about engineering and participated in hands-on projects. Topics covered include what engineers do, types of engineering, necessary skills to be successful, civil engineering, mechanical engineering, computer/software engineering, sustainability, and others. In civil engineering, emphasis was given to bridge design and construction, complete streets, multimodal mobility, connected vehicles and congestion mitigation. Along with learning concepts, students were involved with many hands-on activities. They designed bridges using Bridge Designer 2018, constructed their bridge designs using K’nex, designed and built a section of a complete street (street for all users), built autonomous vehicles using Lego Mindstorm EV3, and programmed their vehicles to autonomously travel between complete street sections crossing the bridges. Furthermore, students played board games focused on transportation engineering including “Tokyo Highway” and “Railroad Ink”. One student wrote an article about his experience with the “Tour of Engineering” camp that was included at the STEMEDGE magazine published by the National

Consortium of Secondary STEM Schools (NCSST): p. 28 at <http://ncsss.org/images/magazine/the-stem-edge-ncsss-magazine-2019q3.pdf>.

- Teacher Training & Curriculum Development
 - Tennessee Tech University (TTU) College of Engineering, College of Education, and the Oakley STEM Center collaboratively led a two and a half-day teacher workshop called STEM in Motion on June 25-26 and August 24, 2019. Fifteen middle school teachers learned about tools and resources to incorporate transportation topics into their science and math lessons. The first day introduced teachers to effective STEM practices, the future of transportation, the Dream Big film, techniques for incorporating transportation into the classroom, and hands-on activities from NanoSonic. During the second day, in the morning teachers used mousetrap cars to learn about stopping distances and then worked in groups to develop lessons they could pilot with students in the afternoon using the cars, Pro-Bots, and K-Nex. After the two-days, teachers were given time to develop their own lessons which they shared with the rest of the group on the third workshop day in August.
 - UF led a one-day teacher workshop called Exploring Transportation and STEM: From the Community to the Classroom on June 6, 2019. Ten teachers for grades levels 4th through 7th learned how to integrate STEM into their classrooms, learned about transportation career options for their students and heard about the latest in transportation research taking place at UF from faculty and student researchers. Research topics included planning, human factors, occupational therapy, civil engineering, and computer engineering. The workshop also included a trip to the Gainesville-Alachua County Traffic Management Center where teachers saw first-hand how traffic engineers and technicians work together to ensure that traffic is flowing smoothly and that traffic lights are working properly. STEM activities were the focus of the afternoon session. Standards-based activities included building a bridge and testing reaction time. Teachers also learned about a variety of transportation-related community and on-line resources they can incorporate into their classroom.
 - STRIDE created a “Curb your congestion” challenge where students have to understand how design can meet the needs of different users, design a curb management plan, develop a financial strategy for supporting the curb space, and create a marketing campaign to make citizens aware of the new design. The activity was piloted during The Citadel’s summer camp program.

How have the results been disseminated?

- STRIDE researchers continue to work closely with stakeholders to obtain feedback on their research scope and methodology and to assist with the dissemination of their research findings.
- The STRIDE Center uses Facebook, Twitter and Constant Contact to disseminate the results of research, to raise awareness about ongoing research projects, to promote opportunities for students (conferences, symposia, poster sessions), to advertise upcoming webinars and distinguished speakers, and to provide information on the various K-12 outreach activities taking place at the Center.
- Final reports are posted on the STRIDE website at <https://stride.ce.ufl.edu/research-2/final-reports/>.
- Facebook and Twitter campaigns have been used to showcase various projects and students. Spotlights posted on FB are at: <https://www.facebook.com/STRIDEUTC/>; Spotlights posted on Twitter are at: <https://twitter.com/STRIDE UTC>.

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

- The STRIDE Center’s EAB and ISC will meet on Monday, October 28, 2019 to showcase the following on-going projects:
 - ✓ Behzad Agdashi, Ph.D., NCSU, Project: *Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses (Project K2)*

- ✓ Sherrilene Classen, Ph.d., UF, Project: *UF & UAB’s Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology (Project D2)*
- ✓ Kari Watkins, Ph.D., GaTech, Project: *Changing Access to Public Transportation and the Potential for Increased Travel (Project A2)*
- ✓ Rod Turochy, Ph.D., Auburn, Project: *Development of Guidance for Scheduling of Freeway Work Zones to Minimize Congestion and Safety Impacts (Project P2)*
- Facilitate training related to FDOT (cost share) project “Estimation of System Performance and Technology Impacts to Support Future Year Planning”. (BDY29-977-39)
- Host two Distinguished Lecturers co-sponsored by STRIDE
 - ✓ Pat L. Mokhtarian, Ph.D., GaTech School of Civil & Environmental Engineering, February 11, 2020 (Topic: TBA)
 - ✓ Nick Evans, Ph.D., UMASS-Lowell, Humanities & Social Science, February 20, 2020 (Topic: Ethics and Autonomous Vehicles)
- Publish the STRIDE Center’s Fall 2019 newsletter by December 2019
- Host a STRIDE student poster showcase/competition during the University of Florida Transportation Institute Reception at TRB 2020
- Continue to host webinars related to on-going or completed STRIDE projects. A schedule of the upcoming webinars can be found at <https://stride.ce.ufl.edu/technology-transfer/workshops-webinars-conferences/>. Below is a list of the webinars currently scheduled:
 - ✓ Huaguo Hugo Zhou, Ph.D., Auburn, and Dan Xu (doctoral student), Auburn, *The Impact of Driver Characteristics on Headway Selection and Free-Flow Speed at Work Zones by Utilizing Naturalistic Driving Study Data*, Oct. 2, 2019.
 - ✓ Chris Cunningham, PE, MSCE, ITRE at NCSU and Ishtyak Ahmed (NCSU doctoral student), *Evaluation of Pedestrian and Bicycle Options at Continuous flow Intersections*, Oct. 23, 2019.
 - ✓ Nagui Rouphai, Ph.D., NCSU and Behzad Aghdashi, Ph.D., NCSU, *Freeway Facility Reliability: Improved Modeling of Incident Impacts*, Nov. 13, 2019.
 - ✓ Allie Thomas, Ph.D., UNC Chapel Hill, *Do Millennials Uber? Initial Finds from North Carolina*, Dec. 4, 2019.
- Attend the 7th Annual UTC Conference for the Southeastern Region and host one or two workshops related to STRIDE-funded projects
- Monitor the Center’s research projects to ensure they are on schedule and progressing satisfactorily
- Guide and monitor the various K-12 projects at The Citadel, Georgia Tech, Jackson State University, North Carolina State University, Tennessee Tech, University of Alabama at Birmingham, University of Florida,
- STRIDE plans to meet with its EAB during TRB 2020 on Wednesday, January 15, 2020, to continue stakeholder and technology transfer discussions and to solidify collaboration with state DOTs
- A bicycle and pedestrian clearing house/database is currently being finalized by Dr. Dimitra Michalaka of The Citadel and is expected to be completed by the next reporting period. This will serve as a resource for the State of South Carolina’s transportation agencies and engineering organizations.

PARTICIPANTS & COLLABORATING ORGANIZATIONS

Below is a list of the key organizations that the STRIDE Center and its consortium members have collaborated with in the past 6 months. Most state DOTs provide cost-share, while other entities provide a variety of contributions (in-kind, facilities, collaborative research, personnel exchanges, etc.).

Name of Organization	Location	Type of Contribution(s)
Alabama Department of Transportation	Montgomery, AL	Cost share

Alachua County Public Schools District	Gainesville, FL	Collaborator; matching with school programs
Alachua Health Education Center	Gainesville, FL	Recruitment and information dissemination
Auburn University	Auburn, AL	Cost share
Bluemax Analytics	Portland, OR	Vendor partner
Center for Independent Living	Gainesville, FL	Recruitment, marketing
City of Charleston Mayor's Health & Wellness	Charleston, SC	Stakeholder, provided feedback on course
City of Charleston Planning Department	Charleston, SC	Stakeholder, provided feedback on course
City of Gainesville	Gainesville, FL	Providing AV shuttle, data streams from fiber network
City of Raleigh	Raleigh, NC	Stakeholder, data sharing
County of Arlington	Arlington, VA	Content and commentary from county government officials
Florida Department of Transportation	Tallahassee, FL	Cost share, stakeholder, data sharing, collaborative research
Georgia Department of Transportation	Atlanta, GA	Cost share, data sharing
Health Street	Gainesville, FL	Recruitment of research subjects
Institute of Transportation Research and Education, NC State	Raleigh, NC	In-kind
Jacksonville Transportation Authority	Jacksonville, FL	Collaborative
Jackson State University	Jackson, MS	Cost share from JSU
Lynx (Central Florida Regional Transportation Authority)	Orlando, Fla.	In-kind (data)
Mississippi State Department of Transportation	Jackson, MS	Cost share
Medical University of South Carolina	Charleston, SC	Recruiting research subjects for course, provided feedback on course
Metropolitan Atlanta Rapid Transit Authority	Atlanta, GA	In-kind
North Carolina Department of Transportation	Raleigh, NC	Cost share (SHRP-2 L08), stakeholder, data sharing
North Carolina State University	Raleigh, NC	Facilities
Oak Hammock – Institute of Learning in Retirement	Gainesville, FL	Recruitment of research subjects
Regional Planning Commission of Greater Birmingham (RPCGB)	Birmingham, AL	In-kind (data sharing)
Research Triangle Regional Public Transportation Authority (GoTriangle)	Durham, NC	In-kind
Rotary Club	Gainesville, FL	Recruitment of research subjects
Town of Cary	Cary, NC	Data sharing
Transdev	Paris, France	Providing safety operator/engineer and route mapping for the AV shuttle
TRB Highway Capacity & Quality of Service Committee	Washington, DC	Research collaboration (chapter in HCM related to wave segments for freeways)
University of Alabama at Birmingham	Birmingham, AL	Institutional, In-kind match, facilities
Uber and Uber Health		In-kind (data)

University of Florida	Gainesville, FL	Institutional, In-kind match, facilities, collaborative research
UF Clinical Translational Science Institute (CTSI)	Gainesville, FL	Recruitment of research subjects
UF Computer and Information Science Engineering	Gainesville, FL	Collaborative research
UF Institute of Aging	Gainesville, FL	Recruitment of research subjects
ULI	Raleigh, NC	Presented and discussed preliminary findings from research
University of North Carolina at Chapel Hill	Chapel Hill, NC	Institutional, In-kind, collaborative research
University of Michigan	Ann Arbor, MI	Collaborative research, institutional, In-kind
University of Minnesota	Minneapolis, MN	Collaborative research
Virginia Tech Transportation Institute	Blacksburg, VA	Collaborative research/data collection
Voyage	Lady Lake, FL	Collaborative research
Zillow	Seattle, WA (headquarters)	In-kind (data)

OUTPUTS

The STRIDE Center uses the following metrics to assess the OUTPUTS related to its technology transfer program. Twenty-five products and one technical report have been completed so far. The table below summarizes those outputs.

METRIC	Target Year 1 Projects	Year 1 Funding: Completed 4/1/2019 to 9/30/2019	Year 1 Funding: TOTAL Completed To Date	Target Year 2 Projects	Year 2 Funding: Completed 4/1/2019 to 9/30/2019	Year 2 Funding: TOTAL Completed To Date
Product(s): Number of new or improved tools, technologies, products, methods, practices, and processes to reduce congestion	9	7	14*	18	10	11*
Technical Report: Number of client-based technical reports published about approaches to congestion mitigation	9	0	1*	18	0	0*

* Totals are calculated from this reporting period as well as all prior reporting periods.

Products

This table summarizes the seventeen products completed during the reporting period (April 1-Sept 30) (7 from Year 1 funding and 10 from Year 2 funding). The total number of products completed to date is 25.

Project#	Product
A	Code - The code for creating a website to receive "Google Location History" data has been published to GitHub at: https://github.com/gti-gatech/navigation_apps
B	Birmingham activity-based model considering attitudes and market penetration - The product is a prototype agent-based simulation model of the Birmingham metropolitan region. The model is developed using the MATSim platform and can be used by transportation planners and researchers to study the impact of shifts in travel demand due to applications of shared-use economy on local and regional congestion.

B	User questionnaire surveys for Alabama and North Carolina - The products are two questionnaire surveys that can be used to understand transportation users' travel behaviors in markets where ride-hailing services have taken off in terms of use and coverage in the recent years. The questionnaire surveys can be used by other researchers and analysts who are interested in documenting users' preferences, attitudes, and mode choices in markets where Transportation Network Services (TNS) are available. Moreover, the surveys can be used by transportation researchers that are seeking to understand determinants that drive people towards the use of TNCs services.
C	Method - Developed a method for using connected vehicle data to estimate mobility, reliability, and environmental metrics that are currently being estimated using traditional (existing) sources. The estimated performance measures can be used by a system operator, planner, or an automated system to support decisions associated with these processes. The measurements can be also used to derive information for dissemination to travelers, third-party data aggregators, traveler information service providers, and other agencies.
C	Methods - Developed methods to estimate new mobility and safety metrics that cannot be estimated based on existing sources of data. The methods can be used in real-time operations by traffic management centers (TMCs) to determine the traffic states on the freeway segments. In addition, machine learning models were developed that can be used by TMCs for short-term prediction of traffic conditions that can be used to proactively activate operational plans to mitigate potential deterioration in performance.
C	Method - Developed method to estimate pollutant emission based on limited amount of connected vehicle. These methods can be used in off-line and real-time analysis of traffic conditions to determine the pollutant emission levels under different traffic conditions. This can be used as part of the decisions to implement strategies and plans to reduce pollution.
E	Catalog of Traffic Impact Assessments (TIA) practices and innovations , categorized according to local characteristics and motivations for innovation - We developed a survey instrument that we administered to local governments, and we analyzed the responses. Based on those we developed a set of categories of innovative practices that local governments are using to conduct their TIAs (traffic impact assessments)
D2	Two continuing education courses were developed as a result of this project. Course 1 - Autonomous vehicles and medically at-risk-drivers through the lifespan: Role, function and future directives for the Driving Rehabilitation Specialist (DRS). Course 2 - Vehicle automation technologies and medically at-risk drivers through the lifespan: Role, function and future directives for the DRS.
D2	Handbook - Classen, S., & Alvarez, L. Driver Capabilities in the Resumption of Control (Chapter 10). (2019). In Donald L. Fisher, William J. Horrey, Michael A. Regan, & John D. Lee (Eds.), Handbook of Human Factors and Automated, Connected and Intelligent Vehicles. In press.
J2	Clustering - The research team has developed a hybrid unsupervised (clustering) for off-line identification of the traffic state and supervised machine learning approach (decision tree) for real-time classification of the traffic state. The approach was tested utilizing data from Sunrise Blvd. in Broward County.
L2	Graduate Course - Developed "Understanding Relationships Between the Built Environment, Physical Activity, Public Health, Urban Mobility, and Traffic Congestion" graduate course including 20 lectures.
M2	Model - Developed a hybrid machine learning and fuzzy logic model for signal timing selection under non-recurrent conditions. Project is developing methods that can be used by signal agencies to better select signal timing, particularly special signal timing plans that can be activated in real time during non-recurrent events such as incidents and weather events. The methods are based on data, tools, and optimization algorithms.
N2	Data Fusion Framework for Arterial Performance Measures - Report: IMPROVING ATSPM'S APPROACH DELAY CALCULATION. This report was submitted to the TRB Traffic Signal Systems Committee (TSSC) for review in their Big Data Challenge Competition. The report documents multiple options for improved approach delay performance measures for arterials using data fusion of point sensor data and traffic signal state data. This report indicates there is significant underestimation of delay with the current ATSPM methodology and showed improvements for each candidate method depending on the detection layout of the intersection.
N2	Improved Arterial Performance Measures – Publication: Alternative Methods for Improving ATSPM's Approach Delay Calculation. This paper documents new methods of approach delay calculation, applied these methodologies to a case study in Utah, and documented the effectiveness of the new methods. Agencies using

	ATSPM may see significantly improved performance measurement by utilizing the methodology applicable to the detector configurations in their signalized intersections.
O2	Methodology - Completed a research paper named "Macroscopic Fundamental Diagram Based Discrete Transportation Network Design". The proposed methodology will be useful for city planners. When new roads need to be built to ease traffic congestion, the proposed method can be utilized to determine which links should be built.
O2	Algorithm - Completed a research paper named "A Cooperative Bypassing Algorithm for Connected and Autonomous Vehicles in the Mixed Traffic". The proposed algorithm will be helpful to control the autonomous and connected vehicles in a mixed traffic environment. Potential users could be vehicle industry and state Departments of Transportation.
O2	Research Report - Completed a research paper titled "An Analytical Approximation for the Corridor Macroscopic Fundamental Diagram of Mixed Human and Connected and Autonomous Traffic". The research result is useful for the vehicle industry to determine the reaction time of autonomous vehicles, and for Departments of Transportation to determine the penetration rate of autonomous vehicles.

Technical Reports

- A draft final report for STRIDE Project F (*Integrated Implementation of Innovative Intersection Designs*) was completed and is currently under peer review.
- A draft final report for STRIDE Project I (*Freeway management for Optimal Reliability*) was completed and is currently under peer review.
- A draft final report for STRIDE Project B2 (*Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data*) is currently under peer review.
- The PI on Project C (*Performance Measurement and Management Using Connected and Automated Vehicle Data*) is preparing a draft final report, expected to be delivered by the next reporting period.

Publications, Conference Papers, Posters & Presentations

B	"A Method to Synthesize Transportation Network Companies (TNC)-Aware Population Microdata Sample" poster presentation at the 98th TRB meeting as part of the STRIDE Poster Student Competition, Washington, DC; S. Sarjana, V. P. Sisiopiku, and O. E. Ramadan, University of Alabama at Birmingham	1/14/2019	Conference Poster
E	Presentation by Tabitha Combs and Noreen McDonald at the conference of the Association of Collegiate Schools of Planning in Buffalo on results for North Carolina and Virginia. Title: What Drives Cities to Consider and Adopt Innovative Approaches to Traffic Impact Assessment	10/25/2018	Paper
E	Poster presented by Tabitha Combs and graduate student Will Leimenstoll at the Transportation Research Board Annual Meeting on results for North Carolina. Title: Innovation in municipal traffic impact assessment approaches: a case study in North Carolina	1/15/2019	Poster, TRB
I	Dr. Toru Seo presented a paper titled as "Optimal Pricing for Departure Time Choice Problems with Unknown Preference and Demand: Trial-and-error Approach" at 98 th annual meeting of TRB.	1/1/2019	Conference Paper
J	Saha, T. presented "Investigating the Impact of Lane Closure Control on Work Zone Mobility." at the 6th Annual UTC Conference for the Southeastern Region at Clemson, SC on October 24, 2018.	10/24/2018	Conference Presentation
C	Azizi, L. and M Hadi. Use of Connected Vehicle Data for the Estimation of Safety Performance Considering Emerging Technology Adoption". Poster Presented at Florida Automated Vehicles Summit, Tampa,	Aug 2018	Conference Presentation
C	Azizi, L and M. Hadi." Connected and Automated Vehicle Data for Safety Performance Measurement". Poster Presented at Florida Section ITE Annual Meeting, FLL, October 2018	Oct 2018	Conference Presentation

C	Azizi, L., MS. Iqbal and M. Hadi "Estimation of Freeway Platooning Measures Using Surrogate Measures Based on Connected Vehicle Data," 97th Annual Meeting of Transportation Research Board, January, Washington DC. 2018	Jan 2018	Conference Paper
C	Islam, A, O. Ramadan, and V. Sisiopiku, Using Connected Vehicle Data for Transportation Performance Measurement ITS5C Summit, Jacksonville, FL, 2018 [workshop]	Oct 2018	Conference Presentation
O2	PhD student Ms. Guojing Hu made a poster showcase on January 14, 2019 in the University of Florida Transportation Institute's (UFTI) reception during the 2019 TRB conference in Washington, D.C. The title of the poster presentation was "Macroscopic Fundamental Diagram Based Discrete Transportation Network Design".	1/14/2019	Poster Presentation
N2	<i>ITS5C STRIDE Workshop: ATSPM and other Data Sources for Performance-based Prioritization of NCDOT's Statewide Signal Retiming Program</i> , Thomas Chase	Oct 2018	Conference Presentation
N2	6th Annual UTC Conference for the Southeast Region: Making Sense of Arterial Data: Pilot Testing and Data Fusion, Thomas Chase	Oct 2018	Conference Presentation
N2	STRIDE Poster Competition, TRB: AN INTEGRATED DATA FUSION FRAMEWORK FOR SIGNALIZED ARTERIAL PERFORMANCE MEASURES, Shoaib Samandar, Thomas Chase, Nagui Roupail	Jan 2019	Conference Presentation
A2	Berrebi, S., Gibbs, T., Joshi, S., Watkins, K., "On Ridership and Frequency: Modeling elasticity on a hyper-local scale between 2012 and 2017." Transit Data Conference, Paris, France	Jul 2019	Conference Presentation
A2	Berrebi, S., Watkins, K., "Modeling Bus Ridership Trends on a Hyper-Local Scale" TRB Conference on Performance and Data in Decision Making, Atlanta, GA.	Sep 2019	Conference Presentation
A2	Berrebi, S. "How Would Ride-Hailing Fit in a Transit Utopia?" Rail~Volution, Vancouver, BC.	Sep 2019	Conference Presentation
B & I2	Dr. Sisiopiku presented a paper on work perform in Task 2 titled "Mobility Patterns and Mode Preferences of Birmingham Travelers" at the 2019 SDITE/MCDITE Annual Meeting in Arlington, VA	4/1/2019	Conference Presentation
C	Azizi, L. and M Hadi. Estimation of Mobility Performance of Freeways Based on Time Exposed Time to Collision Using Trajectory Data in a Connected Environment, TRB Performance and Data in Transportation Decision Making Conference	Sep 2019	Conference Presentation
C	Azizi, L. and M Hadi. Traffic Flow Stability Analysis and Performance Evaluation Methods Based on Connected Vehicle Data (Poster) International Conference on Transportation & Development, ASCE	Jun 2019	Conference Presentation
C	Islam, A., Ramadan, O.E., Sisiopiku V.P., and Hadi, M. (2019). "A Framework For Performance-Based Traffic Operations Using Connected Vehicle Data". JMEST, Vol. 6, Issue 8, August 2019.	Aug 2019	Journal Publication
C2	McDonald, N and Yuan, Q. 2019. Urban Freight Delivery and Loading Spaces, presentation at the NCDOT Research & Innovation Summit, May 2019	5/1/2019	Presentation
D2	Presented: Classen, S., Jeghers, M., Morgan-Daniel, J., Winter, S., King, L., & Struckmeyer, L. Poster presentation. A scoping review for the use of smart technology with older drivers. American Occupational Therapy Association Conference, April, 2019, New Orleans, Louisiana, USA.	4/4/2019	Poster
D2	Classen, S., Jeghers, M., Morgan-Daniel, J., Winter, S., King, L., & Struckmeyer, L. <i>Smart in-vehicle technologies and older drivers: A scoping review</i> . Poster presented at Occupational Therapy Summit of Scholars, Charleston, SC. June, 2019	6/21/2019	Poster
D2	Classen, S. Older Adults' Perceptions of Autonomous Vehicles. Presented findings at I-STREET Meeting, Gainesville, FL, September, 2019.	9/20/2019	Other

F	The project team presented the findings from this project in the North Carolina Department of Transportation Research and Innovation Summit.	5/7/2019	Poster Presentation
F	The project team presented the findings from this project in the North Carolina Section of ITE's Midyear Meeting.	5/30/2019	Presentation
N2	Report: IMPROVING ATSPM'S APPROACH DELAY CALCULATION, Ishtiak Ahmed, Shoaib Samandar, Sumit Toshniwal, Pravek Dwivedi, Taehun Lee, Thomas Chase, Nagui Roupail	May 2019	Publication
N2	TRB Traffic Signal Systems Committee Midyear Meeting: Improving ATSPM's Approach Delay Calculation, Shoaib Samandar	Aug 2019	Conference Presentation

OUTCOMES

The STRIDE Center uses the following metrics to assess the OUTCOMES related to its technology transfer program. A total of fourteen trainings serving 860 professionals have been held for STRIDE projects to date. Six trainings serving 309 professionals have been completed thus far related to Year 1 projects. Eight trainings serving 551 professionals have been completed thus far related to Year 2 projects. During this reporting period, 3 trainings serving 151 professionals and 5 trainings serving 461 professionals were completed for Year 1 and Year 2 projects respectively.

METRIC	Target Year 1 Funding	Year 1 Completed 4/1/2019 to 9/30/2019	Year 1 Funding: TOTAL Completed To Date	Target Year 2 Funding	Year 2 Completed 4/1/2019 to 9/30/2019	Year 2 Funding: TOTAL Completed To Date*
Body of Knowledge: Number of technology transfer trainings for transportation professionals on a new or improved congestion mitigation approach (workshops, webinars)	9	3	6*	18	5	8*
Professionals Trained: Number of transportation professionals participating in technology transfer trainings to improve their understanding and awareness of new or improved congestion mitigation approaches	90	151	309*	180	461	551*

* Totals are calculated from this reporting period as well as all prior reporting periods.

Trainings & Professionals Trained

A total of eight trainings (related to both Year 1 and Year 2 projects) engaged 612 professionals during the reporting period, as summarized in the table below. An additional ninety-three people viewed YouTube recordings of STRIDE webinars.

#	Training	Date	# Professionals Trained	YouTube Views
B & I2	Dr. Sisiopiku presented a paper on work perform in Task 2 titled "Mobility Patterns and Mode Preferences of Birmingham Travelers" at the 2019 SDITE/MCDITE Annual Meeting in Arlington, VA	4/1/2019	100*	
E	A practitioner-focused webinar, sponsored by TRB's ADD30 committee (Transportation and Land Development): <i>Traffic Impact Assessment: Two studies exploring the development and implementation of innovations in TIA in the US</i> was organized by Noreen McDonald and presented findings from the analysis of local-level TIA innovation. Melissa McMahan provided a case study of Arlington County VA's recent experiences with adapting TIA practices to contemporary demands and travel behaviors.	3/29/2019	100	
G	STRIDE webinar - Kari Watkins, PhD, Georgia Institute of Technology, "Comparing Transit Agency Peer Groups using Cluster Analysis"	6/12/2019	16	40 [view]
Cost share	I-STREET webinar - Clark Letter, PhD, University of Florida, "Overview of I-STREET: A Real-World Transportation Testbed in Gainesville, FL"	5/15/2019	25*	46 [view]
G	STRIDE webinar - Noreen McDonald, PhD and Nancy Wolfe, "Innovation in Access to Healthcare: Understanding Transport Barriers"	9/18/2019	35	20 [view]
B2	Presented "Application of Naturalistic Driving Study Data to Study Work Zone Mobility" at the Technical Program of the Joint ALSITE/DSITE 2019 Annual Meeting in Gulf Shores, AL.	6/6/2019	30	
D2	Dr. Classen presented the findings from the research team in July 2019, at the Brookings Institute, Washington DC. She shared the research team's initial findings (N=69) related to the UF & UAB's Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology. About 300 participants attended and the presentation was broadcasted nationally and was published on the web-site of the Institute for Mobility, Activity and Participation.	July 2019	300+	
L2	Six transportation professionals working in consulting or government (city and county) completed the "Understanding Relationships Between the Built Environment, Physical Activity, Public Health, Urban Mobility, and Traffic Congestion" graduate course including 20 lectures.	Summer 2019	6	

* counted towards Year 2 totals

IMPACTS

The STRIDE Center uses the list of metrics shown in the table to assess the IMPACTS related to its technology transfer program. Thirty-nine meetings with stakeholders have been completed thus far. During this reporting period, researchers held three meetings with stakeholders related to Year 1 projects and twenty-four meetings with stakeholders related to Year 2 projects. One product was adopted from a Year 2 project. The table below summarizes those impacts that have been completed and those that are in progress.

METRIC	Target Year 1	Year 1 Completed 4/1/2019 to 9/30/2019	Year 1 Funding: TOTAL Completed To Date*	Target Year 2	Year 2 Completed 4/1/2019 to 9/30/2019	Year 2 Funding: TOTAL Completed To Date *
Stakeholders: Number of stakeholders (agencies, businesses, etc.) you meet with to encourage adoption or implementation of congestion mitigation approaches	9	3	6*	18	24	33*
Adoption/Implementation: Number of incidences that congestion mitigation outputs of research have been implemented or adopted (ex. decision making, practices, methods, analytical tool, data/database, software, policy change, behavior analysis, commercialization)	2	0	1*	2	2	2*

* Totals are calculated from this reporting period as well as all prior reporting periods.

Stakeholder Meetings

Researchers held 27 meetings with stakeholders during the reporting period.

#	Stakeholder	Date	Description
E	Melissa McMahon (Arlington County, VA), Wade Walker (Alta Planning + Design), Martin Guttenplan (CDM Smith), Jeffrey Brubaker (formerly of City of San Luis Obispo), and Bill Bishop (deceased)		During the course of the research we conducted interviews, sometimes multiple times, with nearly 100 transportation professional employed in municipal or county governments. Prior to the interviews, we sought guidance from several local professionals on our research and interview instrument design via informal phone calls.
F	North Carolina Department of Transportation	5/7/2019	The project team presented the findings from this project in the North Carolina Department of Transportation Research and Innovation Summit.
F	North Carolina Section of ITE	5/30/2019	The project team presented the findings from this project in the North Carolina Section of ITE's Midyear Meeting.
A2	Kai Monast, Joe Huegy, Terry Karlson, ITRE	Feb - April 2019	Approximately six meetings took place at ITRE during Spring 2019 to collect and compose the data necessary for Thrust 1
A2	Rob Goodwin, Director of Research, MART; Multiple members of his team	5/2/2019	A meeting took place at MARTA headquarters to present the results of the frequency and demographic analysis on MARTA ridership change.
A2	About 40 members of the Eno MAX program	6/14/2019	A presentation was done at MARTA headquarters to bring results from this work and earlier work to transit agencies for their use in decision-making.
A2	Norman Hickling (Director of Mobility Services at Lynx), Nanette Stephens, Selita Stubbs, and Myles O'Keefe	6/28/2019	A meeting took place to share the experiences and knowledge of LYNX with the UF research team regarding TD services and interactions with TNCs.

A2	Brian Fahey, Transit Administrator, Go Triangle	2/25/2019	We reviewed Go Triangles para transit services including display of heat maps of origin and destinations at GoDurham.
A2	Kai Monast, Program Manager (Public Transportation Group), ITRE	4/12/2019	We reviewed the patterns of paratransit use across NC including trip counts.
A2	Lisa Berley, Orange County Dept. for Aging	6/12/2019	Informed Orange County Medical Transportation Working Group about research project
A2	Julie White Depute Secretary for Multimodal Planning, Hanna Cockburn, Public Transit, Ped/bike	5/13/2019	Updated NCDOT staff about research at Carolina including STRIDE-funded projects.
A2	Agencies that provided data: Tri-met, Metro and Miami		We sent results to the other three agencies who provided us data as well (Tri-met, Metro and Miami) via email. We got a fantastic detailed email back from Metro.
K2	TRB Committee on Highway Capacity and Quality of Service	6/14/2019	Presented the findings of “Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses” project.
L2	Dr. John Vena, Chair, Public Health, Medical Univ. of SC	6/25/2019	Reviewed course materials, provided feedback and served as guest lecture on “Relationships Between Physical Activity & Health”
L2	City of Charleston Mayor’s Health & Wellness Advisory Committee	6/5/2019	Committee members were engaged regarding course objectives and agreed to serve as expert panel for evaluation of final student presentations
M2	Giri Jeedigunta and Aidin Massahi	5/1/2019	Met with FDOT Signal Consultants at FDOT D4 Regional TMC to discuss automating the signal timing updates in special events.
D2	I-STREET Stakeholder	2/22/2019	Discuss project with stakeholders (UFTI, FDOT, City of Gainesville). Update with progress and data collection. Additionally, we received information from FDOT and City of Gainesville regarding the waiver from NHTSA.
N2	Matthew Carlisle, NCDOT State Signal Systems Engineer; Mohd Aslami, NCDOT State ITS & Signals Management Engineer	Aug 2018	PI Thomas Chase met with NCDOT to closeout a separate NCDOT research project. As the NCDOT and STRIDE projects had very similar NCDOT stakeholders, the STRIDE project was introduced and NCDOT committed to sharing data for use in the project. A future discussion was planned to coincide with another NCDOT research meeting in May.
N2	Matthew Carlisle, NCDOT State Signal Systems Engineer; Mohd Aslami, NCDOT State ITS & Signals Management Engineer	May 2019	PI Thomas Chase met as planned with NCDOT to discuss the preliminary findings of the STRIDE project. NCDOT mentioned plans to utilize ATSPM statewide with a stage implementation. NCDOT recognized the contributions of the STRIDE research project and the research team plans to submit a RNS for NCDOT’s Research Program for implementation of the methods into NCDOT’s future ATSPM platform.
B & I2*	James Fowler, Director, Dept of Traffic Engineering, City of Birmingham	7/30/2019	Communicated with Mr. James Fowler, Director of the Department of Traffic Engineering of the City of Birmingham via email. Presented the project objectives and progress and requested collaboration between UAB and the City on this and related follow up STRIDE research initiatives.

D2	Rory Causseaux, President, Sunrise Rotary Club	8/3/2019	Rory was provided with an update of our research progress. Our findings will be disseminated to the Rotary Club upon completion of the study. Furthermore, Rory provided us with a letter of support for our application to fund phase 2 of the D2 project.
D2	Jesus Gomez, Transit Director, City of Gainesville	8/13/2019	An email was sent from Jesus Gomez to I-STREET/STRIDE members. Transdev received a NHTSA waiver until October 2 nd . This waiver allows mapping of the shuttle. We will need to wait for the second waiver to begin participant testing.
D2	Malisa McCreedy, Director of Mobility, City of Gainesville	9/16/2019	This phone call was set up to discuss the NHTSA waiver. The City of Gainesville has not received an update regarding the second waiver to allow for research testing on the shuttle
D2	Andy Chatham, Director, Transdev	9/23/2019-10/7/2019	We spoke with Andy Chatham regarding use of the shuttle. Andy has been given new responsibilities at Transdev and connected us with Neal Hemenover to organize use of the shuttle. Continuous conversation with Jesus Gomez and TransDev to determine status of the NHTSA waiver and next steps for testing clients.
L2	City of Charleston Mayor's Health & Wellness Advisory Committee	8/8/2019	Committee members were engaged to: 1.) serve as expert panel for evaluation of final student presentations, 2.) provide relevant technical and community feedback and 3.) recognize the best presenting student team.
O2	seven researchers from MDOT: Cynthia J. Smith (also from External Advisory Board of STRIDE), Alex Middleton, Evan Wright, William T. Stafford, Rhea Vincent, Benjamin Roberts, Billy Owen	9/30/2019	On September 30, 2019, 2:00 pm-3:00 pm in the Planning Conference Room of Mississippi Department of Transportation (MDOT) Building, JSU updated STRIDE activities for MDOT, including a presentation on STRIDE project titled "Macroscopic Fundamental Approach to Traffic Flow with Autonomous/Connected Vehicles". After the presentation, the attendees discussed the technical part and the safety problem of the autonomous and connected vehicles.
M2	Dr. Alex Haiden (UA)		Meet with Dr. Alex Haiden (UA) to discuss data sharing and potential collaboration on implementing project findings

* counted towards Year 2 totals

Adoption

Two products from Year 2 have been adopted and are being implemented. Additional product adoptions are expected from Year 1 and Year 2 projects as they come to completion.

- Two continuing education courses developed as a part of Project D2 are being used in the Driving Rehabilitation Therapy Certificate program (<https://drt.ot.phhp.ufl.edu/>). The Certificate in Driver Rehabilitation Therapy (DRT) is for licensed health care professionals and is the first of its kind to be offered by a US university. The following courses are integrated into the required curriculum:
 - Course 1 - Autonomous vehicles and medically at-risk-drivers through the lifespan: Role, function and future directives for the Driving Rehabilitation Specialist (DRS).
 - Course 2 - Vehicle automation technologies and medically at-risk drivers through the lifespan: Role, function and future directives for the DRS.
- The newly developed graduate course, "Understanding Relationships Between the Built Environment, Physical Activity, Public Health, Urban Mobility, and Traffic Congestion" including 20 lectures was implemented by The Citadel during summer 2020 as part of the M.S. program in civil engineering.

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*

SPECIAL REPORTING REQUIREMENTS

- *No special reporting requirements*

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 Roupail, 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 Roupail, 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 Rouphail, 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 Rouphail, 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

STRIDE Year 3 List of Projects

Emerging Mobility Services for the Transportation Disadvantaged

Lead PI: Dr. Eleni Bardaka, North Carolina State University

Team: Dr. Noreen McDonald, University of North Carolina at Chapel Hill; Dr. Ruth Steiner, University of Florida; Dr. Xia Jin, Florida International University; Dr. Jeffrey LaMondia, Auburn University

UF & UAB's Phase 2 Demonstration Study: Developing a Model to Support Transportation System Decisions considering the Experiences of Drivers of all Age Groups with Autonomous Vehicle Technology

Lead PI: Dr. Sherrilene Classen, University of Florida

Team: Dr. Virginia Sisiopiku, University of Alabama at Birmingham and Dr. Jason Mason, University of Florida

Evaluation of Transportation Network Infrastructure, Safety, and Travel Route Characteristics of Bike Share, Electric-Powered Pedal-Assist Bike Share, and Electric Scooter System Operation

Lead PI: Dr. Jeff Davis, The Citadel

Team: Dr. Dimitra Michalaka, The Citadel; Dr. Kweku Brown, The Citadel; Dr. Kari Watkins, GaTech;

Utilization of Connectivity and Automation in Support of Transportation Agencies' Decision Making

Lead PI: Dr. Mohammed Hadi, Florida International University

Team: Nagui Rouphail, Ph.D., North Carolina State University; Lily Elefteriadou, Ph.D., University of Florida; Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham; Angshuman Guin, Ph.D., GaTech

Identifying and Mitigating Congestion Onset

Lead PI: George List, Ph.D., North Carolina State University

Team: Billy Williams, Ph.D. North Carolina State University; Michael Hunter, Ph.D., GaTech; Mohammed Hadi, Ph.D., Florida International University

Locating and Costing Congestion for School Buses and Public Transportation

Lead PI: Kai Mondast, MRP, Director Public Transportation Group, North Carolina State University

Team: Ruth Steiner, Ph.D., University of Florida

Smartphone-Based Incentive Framework for Dynamic Network-Level Traffic Congestion Management

Lead PI: Srinivas Peeta, Ph.D., GaTech

Team: Lili Du, Ph.D., University of Florida

Developing a Methodology to Evaluate Detours for Major Construction Projects in the Era of Real-Time Route Guidance

Lead PI: Andrew Sullivan, Ph.D., University of Alabama at Birmingham

Team: Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham; Rod Turochy, Ph.D., Auburn University

Traffic Congestion Identification and Prediction based on Image Processing and Deep Learning Methods

Lead PI: Robert Whalin, Ph.D., Jackson State University

Micro-Mobility as a Solution to Reduce Urban Traffic Congestion

Lead PI: Xilei Zhao, Ph.D., University of Florida

Team: Virginia Sisiopiku, Ph.D., University of Alabama at Birmingham; Ruth Steiner, Ph.D., University of Florida

Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data, Phase II

Lead PI: Huaguo Hugo Zhou, Ph.D., Auburn University

Team: Rod Turochy, Ph.D., Auburn University

New Cost Share Projects Added this Reporting Period

Testing of Vision-Based Warning System on Transit Vehicles

PI: Dr. Mohammed Hadi, Florida International University

FDOT # BDV29 TWO 943-07800007708

Large Truck Crash Analysis for Freight Mobility and Safety Enhancement in Florida

PI: Dr. Xia Jin, Florida International University

FDOT #BDV29 TWO 977-31800008014

Extended Development and Testing of Optimized Signal Control with Autonomous and Connected Vehicles

PIs: Dr. Lily Elefteriadou, University of Florida; Dr. Clark Letter, University of Florida; Dr. Carl Crane, University of Florida

FDOT # BDV31-977-109

Transportation Mobility Assessment and Recommendations for Smart City Planning

PIs: Dr. Lily Elefteriadou, University of Florida; Dr. Siva Srinivasan, University of Florida; Dr. Sherrilene Classen, University of Florida; Dr. Ruth Steiner, University of Florida; and Dr. Ilir Bejleri, University of Florida

FDOT # BDV31-977-115

Before and After Study of Gainesville Pedestrian-Bicyclists Connected Vehicle Pilot

PIs: Dr. Lily Elefteriadou, University of Florida and Dr. Siva Srinivasan, University of Florida

FDOT # BDV31-977-120