

Semi Annual Report for University Transportation Centers

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Development & Education Center (STRIDE)

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Lily Elefteriadou, Ph.D.

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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?

- **Update on Year 1 projects:** Four of the 10 research projects are completed, with final reports posted to the STRIDE Center's webpage and disseminated via Constant Contact. For these projects we have also completed a Project Brief, we have presented and recorded a webinar, and we have provided a Technology Transfer report. The four completed projects for Year 1 are:
 - Project B - *Technology Influence on Travel Demand and Behaviors*
 - Project F - *Integrated Implementation of Innovative Intersection Designs*
 - Project G - *Transit in the Era of Shared Mobility*
 - Project I - *Freeway Management for Optimal Reliability*

The draft final report on Project A - *Impact of Smartphone Applications on Trip Routing and Congestion Management* is in the final stages of the editorial process. The draft final report for Project C (*Performance Measurement and Management using Connected and Automated Vehicle Data*) has been submitted and we are in the process of working with the PI on other deliverables (i.e., Technology Transfer report and a Project Brief). Draft final reports for three additional projects (Project D - *Evaluation of Advanced Vehicle and Communication Technologies through Traffic Microsimulation*; Project E - *Predicting Congestion: The Challenge of Shifting Travel Behavior on Estimating Trip Generation*; Project H - *Traffic and Other System Strategies for Mitigating Congestion in Small Urban and Rural Areas*) are out on peer-review. We are expecting a draft final report on Project J (*Improving Work Zone Mobility through Planning, Design and Operations*) in the next three months.

- **Update on Year 2 projects:** Three out of 17 projects are completed, and their final reports have been posted to the STRIDE Center's webpage. We have also disseminated these via Constant Contact, we have completed a Project Brief, presented and recorded webinars, and produced Technology Transfer reports. The three completed projects for Year 2 are:
 - Project B2 - *Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data*
 - Project K2 - *Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses (this report has been sent to the TRB Newsletter and accepted for publication)*
 - Project O2 - *Macroscopic Fundamental Diagram Approach to Traffic Flow with Autonomous /Connected Vehicles.*

Six additional projects (Project A2 - *Changing Access to Public Transportation and the Potential for Increased Travel*; Project C2 - *Urban Freight and Planning*; Project D2 - *UF & UAB's Phase I Demonstration Study: Older Driver Experiences with Autonomous Vehicle Technology*; Project F2 - *Discovering Potential Market for the Integration of Public Transportation and Emerging Shared-Mobility Services*; Project H2 - *Fly-By Image Processing for Real Time Congestion Mitigation*; and M2 - *Comparing and Combining Existing and Emerging Data Collection and Modeling Strategies in Support of Signal Control Optimization and Management*), are in various stages of completion. Draft final reports have been received for all these and

they are either out on peer review, or the STRIDE Center staff is working with the PI on other deliverables such as the Technology Transfer report, project brief, organizing the webinar, and ensuring their data is uploaded into the Zenodo repository. Center staff are also working on ensuring that these reports are 508 compliant and they are formatted correctly. We anticipate these projects will be completed by Fall 2021. The remaining eight projects are still ongoing, and we expect they will be completed by the end of Spring 2022.

- **Update on Year 3 projects:** All 11 projects funded in Year 3 are all still in progress and are scheduled to be completed in the fall of 2021 or spring 2022. A list of Year 3 projects is available at <https://stride.ce.ufl.edu/stride-research/active-research-projects/>.
- **Update on Year 4 projects:** All six projects are currently ongoing and are scheduled to be completed in the fall 2021 or spring 2022. A list of Year 4 projects is available at <https://stride.ce.ufl.edu/stride-research/active-research-projects/>.
- A list of all STRIDE projects are posted on the STRIDE website at <https://stride.ce.ufl.edu/research-2/active-research-projects/>; they are also included at the end of this report. We have created web pages for each STRIDE-funded project to provide the required Project Information sheets, links to final reports, as well as links to recorded webinars, products, related news, and any other information that relates to the project. We review all STRIDE final reports for 508 compliance requirements for accessibility.
- **Update on Year 5 projects:** A total of 10 projects have been selected. Four projects have been sent to subcontracting (Project A5 – Barriers and Facilitators of People with Disabilities in Accepting and Adopting Autonomous Shared Mobility Services; Project E5 – Transportation Workforce Development for State DOTs to Address Equity, Diversity, and Inclusion in the Southeast Region; Project G5 – Engineering Careers from a Unique Summer Bridge Program; and Project J5 – Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses/Phase II). The other six proposal/projects are either in the peer review process or we are expecting to receive the proposal within the next 2 months. The project will be posted to the Active Research Project page at <https://stride.ce.ufl.edu/stride-research/active-research-projects/>. These projects are expected to be completed by fall 2022 or spring 2023.
- Sixty-six students (undergrad and graduate) and post-docs have been supported in the last year by STRIDE funding or matching cost-share projects.
- The STRIDE Center served on the planning committee of the Regional UTC Student Spotlight event hosted by Florida Atlantic University (FAU). The event was held virtually on November 4, 2020, during the height of the pandemic. Additional information can be found at <http://eng.fau.edu/research/fmri/education-outreach/regional-utc-student-spotlight-conference/organizing-committee.php>.
- Plans are still underway to hold an in-person UTC Conference for the Southeastern Region in 2021 or 2022. STRIDE is serving on the planning committee and is a co-sponsor of the event. The in-person conference is being organized by FAU.
- The STRIDE Center's fall 2020 newsletter was released December 22, 2020. The newsletter included reviews of research projects and products, spotlights on researchers and students, a list of webinars, an overview of K12 activities, and student and faculty accomplishments. The fall 2020 STRIDE newsletter can be viewed at <https://conta.cc/3phMTKJ>.
- STRIDE is planning an I-STREET-related training program, which will include lessons learned on the implementation of advanced technologies. The program will provide on-line course offerings on topics related to autonomous and connected vehicles, data analytics, and sensors for transportation applications.
- The next STRIDE newsletter (spring 2021) is scheduled to be released at the end of May 2021. STRIDE staff is in the process of gathering news items, research highlights, student spotlights and other items of interest.
- The annual STRIDE Student Poster Showcase and Competition typically organized in conjunction with TRB was held as a virtual event on January 29, 2021 (due to the COVID-19 pandemic). A total of 15 students

participated in this event. Awards for the top three student posters were announced, including a People's Choice Award. For a complete list of the participants and links to the poster presentations, visit <https://stride.ce.ufl.edu/2020/11/stride-student-poster-showcase-competition-january-29-2021/>.

- STRIDE continues to produce 2-page Project Briefs for each completed project, which summarize the project products and findings. STRIDE also continues to create final report "packages" which contain the final report, the project brief, the technology transfer report, and links to associated webinars. This final report package is sent via Constant Contact to transportation professionals, students, alumni, and other stakeholders. For a complete list of the Project Briefs, visit <https://stride.ce.ufl.edu/technology-transfer/products/>.

List of Awards and Recognitions

- In January, Dr. Lily Elefteriadou was honored with the 2021 American Road & Transportation Builders Association's (ARTBA) prestigious S.S. Steinberg Award for her exceptional contributions to transportation education.
- Doctoral Student Patrick Emami of the University of Florida was selected as the 2020 STRIDE Student of the Year.
- Brandy McKinney, a doctoral student working with Dr. Virginia Sisiopiku at the University of Alabama at Birmingham, was awarded the 2020 National Alumni Society Scholarship.
- Dan Xu was selected as an Outstanding Doctoral Student for 2020-2021 at Auburn University.
- Dr. Sanjay Ranka was awarded the Institute of Electrical & Electronics Engineers Technical Committee on Cloud Computing Impact Award. Dr. Ranka is a professor of computer science engineering at the University of Florida and is working on Florida Department of Transportation projects that are cost-shared to the STRIDE grant.
- Dan Xu and Dr. Hugo Zhou of Auburn University won the 2020 Best Paper Award by TRB's Standing Committee on Human Factors or Infrastructure Design and Operations (ACH40), for their work titled "Analysis of Headway and Speed based on Driver Characteristics and Work Zone Configurations Using Naturalistic Driving Study Data" (January 2021).
- Dan Xu and Dr. Hugo Zhou of Auburn University won second place in the General Member Technical Paper Competition by SDITE, for their work titled "Analysis of Headway and Speed based on Driver Characteristics and Work Zone Configurations Using Naturalistic Driving Study Data" (January 2021)
- Four students were honored in the STRIDE 2021 Virtual Student Poster Showcase & Competition: 1st Place – Lucas Yu, Georgia Institute of Technology (Poster: AI-Based Work Zone Traffic and Driver Behavior Extraction System using Camera Images); 2nd Place – Rebecca Kiriazes, Georgia Institute of Technology (Poster: Impact and Analysis of Ride Comfort in Shared Modes during the COVID-19 Pandemic); 3rd Place – Akhilesh Shastri, University of Florida (Poster: Interchange Design to Accommodate Ramp Metering System); and People's Choice Award – Syed Ahnaf Morshed, Florida International University (Poster: Comparative Mode Split Analysis Between Multi-Agent Simulation and Activity-Based Demand Model: Miami Beach Open Scenario) (January 2021)
- Rebecca Kiriazes, Georgia Institute of Technology, won a Center for Transportation Equity, Decisions, and Dollars (CTEDD) Student Thesis/Dissertation Scholarship. (June 2020)
- Dr. Sandra Winter, Associate Director of the Institute for Mobility, Activity, & Participation (I-MAP) at the University of Florida, received the Distinguished Scholar Award from the Association for Driver Rehabilitation Specialists. (August 2020)

K-12 Outreach Activities

- Due to COVID-19, many K-12 outreach activities have been put on hold until restrictions are lifted both at K-12 schools and at universities where programs take place. In some cases, activities were able to be re-structured to an online or hybrid format.

- On March 24, 2021, STRIDE hosted three speakers from the Florida Department of Transportation who presented a webinar on student opportunities at FDOT. 59 people attended the webinar and a recording can be found on the [STRIDE YouTube channel](#) at <https://www.youtube.com/watch?v=Wmq-1GDQ04c&t=1s>
- The Citadel has successfully transitioned many programs to a virtual format or in-person with COVID protocols in place:
 - Citadel faculty served as Architecture Construction Engineering (ACE) Mentors at Charleston Country schools with about 85 students. Students learned about career pathways through semester long engagement with professionals.
 - In recognition of Engineer's Week 2021, The Citadel introduced 46 pre-engineering students at West Ashley High School to civil engineering and its sub-disciplines as part of Project Lead the Way through virtual and in-person presentations.
 - The Citadel's Department of Civil and Environmental Engineering met with 18 prospective Citadel students through a virtual recruiting visit focused on engineering. The department also met with 12 prospective engineering students from Trident Technical College (TTC) who would enter the program as 2+2 evening students, typically during their sophomore year academically.
 - The Citadel hosted an in-person Introduce a Girl to Engineering event for 76 Girl Scouts on Feb. 21, 2021. Each Girl Scout earned her "Think Like an Engineer" badge after completing engineering activities led by 30 Citadel engineering cadets, students, and faculty, as well as engineers from the community.
- The University of Florida mentored a middle school Future City Engineering Club from September through February twice a week after school both virtually and in-person. Students learned about different fields of engineering, wrote an essay about how to engineer and design a city on the moon, and built a scale model featuring engineering solutions. The team participated in the virtual regional Future City Competition on February 20, 2021 where they received 2nd place.
- Tennessee Tech will host their STEM in Motion 2021 teacher workshop using a hybrid model this summer. They have developed virtual modules and are planning a culminating in-person meeting where teachers will test out the activities that they design with a group of students at the STEM Center.
- The University of Alabama Birmingham's (UAB) autonomous vehicle program is currently outlining the potential for on-campus K-12 activities following revised CDC guidance with regards to masking and social distancing requirements. Dr. Yildirim will be transitioning to ZOOM instruction during the spring 2021 semester with project demonstrations planned for May 2021.
- Jackson State University (JSU) is in the process of transitioning its Mississippi Summer Transportation Institute (MSTI) program to a virtual format for this summer.
- Georgia Tech will not be able to operate the planned summer camp. A digital lesson plan is being developed that would include some basic instructions and resources for teachers and facilitators to start a school-based club in fall 2021.

How have the results been disseminated?

- Project PIs publish the results of their research in refereed journal publications, and they regularly present research in progress in technical venues. STRIDE organizes webinars for each research project, which are recorded and are available through our [YouTube channel](#).
- Project PIs regularly present their research to various stakeholders. The STRIDE Center tracks interactions between project PIs (and their teams) and stakeholders via progress reports, email communication, and through the Technology Transfer reports due at the completion of each project (in addition to the final/technical report). STRIDE is continuously encouraging researchers to work closely with stakeholders to obtain feedback on their research scope and methodology and to assist with the dissemination of their research findings. A Stakeholder Engagement Webinar was held for all STRIDE researchers in August 2020. A [recording](#) of the webinar is available for all researchers to reference for ideas on how to meaningfully engage stakeholders in their research.
- STRIDE continues to update the project-specific pages on its website. The project-specific pages provide a comprehensive list of all activities and products related to each STRIDE-funded project. These generally

include the following: final reports, webinars, workshops, technology transfer reports, project briefs, presentations, and publications. For an example of such a page visit the Active Research Projects page at <https://stride.ce.ufl.edu/stride-research/active-research-projects/>.

- Project Briefs are incorporated into a Constant Contact email for wider dissemination. The Briefs are created to promote the various products produced from STRIDE- funded projects and can be found at <https://stride.ce.ufl.edu/technology-transfer/products/>. Fourteen briefs have been completed to-date. All briefs are available on the STRIDE website on the [Products page](https://stride.ce.ufl.edu/technology-transfer/products/) (<https://stride.ce.ufl.edu/technology-transfer/products/>).
- The STRIDE Center uses Facebook, Twitter, LinkedIn, 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 and can be found on each project-specific page. Visit the Active Research Project page at <https://stride.ce.ufl.edu/stride-research/final-reports/>.
- As of April 2021, the STRIDE Center has begun sending final reports to TRB for inclusion in their weekly E-Newsletter. The first report (Project K2 - Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses) was featured in the April 20, 2021 TRB E-Newsletter.

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

- Work to finalize the subcontracting on Year 5 projects related to research and education.
- Work with PIs to complete all projects in Years 1 and Years 2.
- Publish the STRIDE Center’s Spring 2021 newsletter by May 2021.
- Continue to coordinate activities with the STRIDE Internal Steering Committee via monthly meetings on Zoom.
- Continue to attend planning meetings for the 7th Annual UTC Conference for the Southeastern Region, which may be held in spring 2022.
- STRIDE will continue to monitor research projects through progress reports on a quarterly basis. Each report is reviewed to ensure adequate progress is made, to collect metrics, and for invoicing purposes.
- Continue to develop 2-page Project Briefs as projects are completed.
- Continue to host webinars related to on-going or completed STRIDE projects. A schedule of the upcoming webinars is provided at <https://stride.ce.ufl.edu/technology-transfer/workshops-webinars-conferences/>.
- Continue to provide guidance and monitor the K-12 projects at The Citadel, Georgia Tech, Jackson State University, Tennessee Tech, University of Alabama at Birmingham, and at the University of Florida. Efforts will be made to expand online programs where possible.

SELECTED PARTICIPANTS & COLLABORATING ORGANIZATIONS

Below is a list of selected organizations that the STRIDE Center and its consortium members have collaborated with in the past 6 months (the complete list far exceeds the page limit for this report). Most state DOTs provide cost-sharing, while other entities provide a variety of contributions (in-kind, facilities, collaborative research, personnel exchanges, etc.)

#	Organization	Location	Type of Contribution
C3	Alabama Cooperative Extension	Auburn, AL (and counties around the state)	data, guidance on travel needs, connections to communities
D3	Alabama Department of Transportation	Birmingham, AL	Data and project information
D2	Alachua Health Education Center	Gainesville, FL	recruitment and dissemination

C4	Florida Department of Transportation - Alison Stettner	Florida	Information Exchange
D2	Arcadis	New York City, NY	Dissemination
D2	Beep	Lake Nona, FL	Collaborative research
F3	Blue Bikes of South Carolina	Columbia, SC	Micro mobility provider
N2	Bluemac Analytics	Oregon	Vendor Partner
C4	Tennessee Department of Transportation, Brad Freeze	Tennessee	Information Exchange
D2	Center for Independent Living	Gainesville, FL	Provide mobility options to individuals throughout the lifespan with or without impaired mobility
D3	City of Birmingham Traffic Engineering	Birmingham, AL	Data and project information
L2	City of Charleston Mayor's Health & Wellness Advisory Committee	Charleston, SC	Committee members were engaged regarding course objectives and agreed to serve as expert panel for evaluation of final student presentations.
L2	City of Charleston Planning Department	Charleston, SC	Eric Pohlman, West Ashley Project Coordinator, provided information regarding redevelopment area where course principles, planning and implementation are under consideration
F3	City of Columbia	Columbia, SC	City to provide data access permission for the Blue Bike network in the city of Columbia
J2	City of Gainesville	Gainesville, FL	Access to data streams from the City's system and discuss applying the methodology by the City
D2, A3, C3	City of Gainesville	Gainesville, FL	research oversight, strategic direction; Providing AV shuttle
N2	City of Raleigh	North Carolina	Data Sharing, stakeholder
L2	College of Charleston	Charleston, SC	provided feedback on course curriculum and collaboration
F3	College of Charleston	Charleston, SC	collaboration to construct database, add/build on previous research, assess physical activity, engage MAAS providers
F4	Computational and Data-Enabled Science and Engineering (CDS&E) Program at Jackson State University.	Jackson, MS	Late user of the proposed methodologies for class teaching in the CDS&E program
N2, G3, C4, I2, B4, J2, D2	FL Department of Transportation (FDOT)	Florida	Data Sharing, stakeholder, field data and simulation files, information exchange, match support
A3	FDOT's Safe Mobility for Life Coalition	Tallahassee, FL	Recruitment
J3	FIU	Miami, FL	Collaborative Research - include?
D2	Florida A&M University	Tallahassee, FL	Dissemination

J2, M2	Florida Department of Transportation, District 4 Office	Ft. Lauderdale Office	Possible implementer
D2	Florida State University	Tallahassee, FL	Dissemination
A3	Gainesville Black Professionals, Inc.	Gainesville, FL	Recruitment
C3	Gainesville Regional Transit System (RTS)	Gainesville, FL	personnel exchange, data
N2, G3, E4	Georgia Department of Transportation (GDOT)	Georgia	Data Sharing, match support,
G2	Georgia Department of Transportation (GDOT)	Atlanta, GA	Personal exchanges, data from GDOT to study driver behavior and traffic information, data on speed and volume for validating outputs
F3	Georgia Institute of Technology	Atlanta, GA	Dr. Kari Watkins, collaboration to construct database, add/build on previous research, engage MAAS providers
F3	Gotcha Mobility	Charleston, SC	Micro mobility provider with 50 MAAS systems across U.S.
C4	Martha Horseman	University of Kentucky	Information Exchange
L2	Medical University of South Carolina	Charleston, SC	reviewed course materials, provided feedback
F4	Mississippi Department of Transportation	Jackson, MS	potential product late adopter
J3	NC State	Raleigh, NC	Collaborative Research - include?
N2, G3, E4	NCDOT		Matching funds; stakeholder; Data Sharing
C3	Orange County Department for Aging	Orange County, NC	Helped organize stakeholder meeting involving UNC Healthcare, Duke Health, local transit and social service agencies.
D3	Regional Planning Commission of Greater Birmingham	Birmingham, AL	Data and project information
D3	Sain Associates, Inc.	Birmingham, AL	Data and collaboration on analysis
C4	South Carolina Office of Stantec - Stuart Day	South Carolina	Information Exchange
D2	Texas A&M Transportation Institute	College Station, TX	Collaborative research
Q2	TOMNET University Transportation Center	Atlanta, GA	in-kind contribution of survey data
N2	Town of Cary	North Carolina	Data Sharing, stakeholder
A3	Town of Tioga	Gainesville, FL	Recruitment
D2, A3	Transdev	Paris, France	Providing safety operator/engineer and route mapping for the AV shuttle
Q2	TU Delft	Delft, Netherlands	Proposed collaborative research related to project goals for IIE-Graduate International Research Experience application
I2	UAB	AL	Institutional In-Kind match

Q2	UC Davis	Davis, CA	Collaborative research with Giovanni Circella to understand how COVID-19 has changed lifestyles
D2	University of Iowa	Iowa City, IA	Collaborative research
D2	University of Kansas	Lawrence, KS	Collaborative research
D2	University of Minnesota	Minneapolis, MN	Collaborative research
I3	Virginia Tech Transportation Institute (VTTI)	Blacksburg, VA	data collection and provider
D2	Voyage	Lady Lake, Florida	Collaborative research
E4	VTTI	VA	data collection

OUTPUTS

The STRIDE Center uses the following metrics to assess the OUTPUTS related to its technology transfer program. Fifty-three products and seven technical reports have been completed so far. The table below summarizes those outputs. Researchers have exceeded the targets for products in Year 1 and Year 2 projects thus far.

METRIC	Year 1 Projects Target/Completed	Year 2 Projects Target/Completed	Year 3 Projects Target/Completed	TOTAL COMPLETED (All Projects)
Product(s): Number of new or improved tools, technologies, products, methods, practices, and processes to reduce congestion	9 / 16*	18 / 31* (8 new this period)	11 / 6*	53* Products
Technical Report: Number of client-based technical reports published about approaches to congestion mitigation	9 / 4*	18 / 3*	11 / 0	7* Technical Reports

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

Products

This table summarizes the 8 products completed during the reporting period (Oct 1, 2020-March 31, 2021). All products are from Year 2. The total number of products completed to date is 53. Products are featured in 2-page Project Briefs which can be found on the [STRIDE Product page](https://stride.ce.ufl.edu/technology-transfer/products/) (https://stride.ce.ufl.edu/technology-transfer/products/).

#	Product
C2	City-level summary of off-street freight loading zone requirements This product provides benchmarking information for cities to identify practices in other communities and assess how well current standards match needs. It is available for use by site review/development approval planners and can improve congestion because freight deliveries currently cause significant congestion on urban streets.
F2	Transit User Demand Models for First/Last Mile Trips Several multinomial logit (MNL) models classified how passengers chose to arrive at their transit stop (first mile) and depart their transit stop (last mile) while also determining what factors may have influenced their choices. Mode choices were categorized as driving alone, TNC/Taxi, carpool, micromobility (bike-sharing, scooters, etc.), wheelchair, and walking. Factors that may have influenced user's choices included, trip attributes, density, land use diversity, accessibility, and personal and household attributes. Project Brief

F2	<p>Data-driven Approach for First/Last Mile Gaps</p> <p>A multi-step data analysis method used ridesharing GPS trajectory data and bus trip data to identify service gaps that could be addressed through a hybrid transit system. The method, shown in Figure 1 and described below, has three main steps including statistical data analysis and machine learning and optimization approaches.</p> <p>Step 1 - Ridesharing GPS trajectory data and bus trip data was placed into a 3D grid with uniform cubes. Statistical and machine learning methods revealed complementary or competitive relationships between cubes over the entire 3D space.</p> <p>Step 2 - Bus or ridesharing service rate was collected from each cube to form heatmaps. Heatmaps revealed regions where ridesharing services were dominant, called a ridesharing swarm (RS). These RS regions attract significant ridesharing demand but have limited transit service. As such, they reveal opportunities for new transit stations or micro-transit hubs as well as areas with high first/last mile demand (FLM zones).</p> <p>Step 3 - Heatmaps were fed into an existing ConvLSTM deep learning model to make predictions about when and where service gaps would occur. Project Brief</p>
H2	<p>Drone Perching Mechanism</p> <p>Drones were equipped with a perching mechanism that allowed it to land on vertical walls or upside down under horizontal steel surfaces such as a traffic light column or advertising board. Perching enabled the drones to shut down their power-consuming motors, thereby allowing the cameras to acquire video over an extended period from a fixed location. Project Brief</p>
H2	<p>Real-Time Vehicle Location Model</p> <p>A mathematical model was created that relates the locations of objects on the image to real-world coordinates of the objects. Using the model, cameras were calibrated and real-time locations of vehicles could be determined. The model was experimentally verified. Project Brief</p>
K2	<p>A new Capacity Analysis Method for ramp weave segments</p> <p>A new method was developed for evaluating operations at freeway weaves. This new method uses the basic freeway model and a speed impedance factor that represents the weaving turbulence. The model predicts the average speed of the weaving segment directly without using intermediate models to predict the number of lane changes. The new method provides an approach that is simpler than the current HCM6 method, consistent across all freeway segment analyses, and adaptable to other types of weaves (B & C) and merge and diverge segments when recalibrated. Project Brief</p>
K2	<p>Method for extracting high resolution video data</p> <p>A UAS (drone) was used to collect video 400 ft. above the highway, capturing a length of up to 3,000 ft. of roadway. The video was analyzed using a third-party video imaging processor (VIP). Additional longitudinal and lateral “gates” were generated by the research team and superimposed on the processed video to capture the volume of weaving and non-weaving traffic. This enabled the team to track where vehicles started, when and where they entered, lane changed and exited at the approach. Project Brief</p>
K2	<p>Computational Engine to exercise the method</p> <p>To enable end users to test and verify the methodology, a computational engine on an Excel platform has been developed that exercise the computations for the method. The data the method requires is similar to – and in some instances fewer than--the current HCM method requires. At this time, the engine is available upon request from the project PI through email at roushail@ncsu.edu. Once the final report is made available to the public, the engine will be posted on the STRIDE website as a supplemental deliverable. Project Brief</p>

Completed Technical Reports

The following projects are completed:

- Project B - *Technology Influence on Travel Demand and Behaviors*, PI: Dr. Virginia Sisiopiku, UAB
- Project F - *Integrated Implementation of Innovative Intersection Designs*, PI: Dr. Nagui Roushail, NCSU
- Project G - *Transit in the Era of Shared Mobility*, PI: Dr. Kari Watkins, GaTech
- Project I - *Freeway Management for Optimal Reliability*, PI: Dr. Yafeng Yin
- Project B2 - *Evaluation of Work Zone Mobility by Utilizing Naturalistic Driving Study Data*, PI: Dr. Huaguo Zhou, Auburn

- Project K2 – Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses, PI: Dr. Nagui Roupail, NCSU
- Project O2 - *Macroscopic Fundamental Diagram Approach to Traffic Flow with Autonomous /Connected Vehicles*, PI: Dr. Robert Whalin, JSU

Publications, Conference Papers, Posters & Presentations

Project	Description	Date	Type
A3	Mason, J., Classen, S., Wersal, J., & Sisiopiku, V. (2020). Survey design on the perceptions of automated vehicles: Face and content validity. <i>American Journal of Occupational Therapy</i> , 74, (4_Supplement_1). https://doi.org/10.5014/ajot.2020.74S1-PO3607	9/9/2020	publication
A3, D4	Mason, J., Classen, S., Wersal, J., Sisiopiku, V. (2021) Construct validity and test-retest reliability of the automated vehicle user perception survey. <i>Frontiers in Psychology: Quantitative Psychology and Measurement</i> . https://www.frontiersin.org/articles/10.3389/fpsyg.2021.626791/abstract	1/7/2021	conference presentation
A3, D4	Classen, S. Invited Guest Speaker: ROAM: The New Frontier: Older Adults' Perceptions of Level 4 Automated Vehicle Technology, Virtual presentation, 11 January 2021.	1/11/2021	conference presentation
B3	Noei, S., Zhao, X. (2020). Longitudinal Dynamics in Traffic Microsimulation. <i>Proceedings of Transportation Research Board 100th Annual Meeting, Washington, DC.</i>	1/2021	paper
B3, D4	Zhao, X. (2021). Micromobility for smart cities: Planning, design, and operations. <i>Interstate Transit Research Symposium.</i>	12/2020	publication
B3, D4	Xu, Y., Yan, X., Liu, X., Zhao, X. (2021). Identifying key factors associated with ride-splitting adoption rate and modeling their nonlinear relationships. <i>Transportation Research Part A: Policy and Practice</i> . https://doi.org/10.1016/j.tra.2020.12.005	01/2021	publication
B3, D4	Merlin, L. A., Yan, X., Xu, Y., Zhao, X. (2021). A segment-level model of shared, electric scooter origins and destinations. <i>Transportation Research Part D: Transport and Environment</i> .	03/2021	paper
B3, D4	Zhang, X., Zhao, X. (2020). A Clustering-aided Ensemble Method for Predicting Ridesourcing Demand in Chicago. <i>Proceedings of Transportation Research Board 100th Annual Meeting, Washington, DC.</i>	1/2021	paper
B3, D4	Xu, Y., Yan, X., Sisiopiku, V. P., Merlin, L. A., Xing, F., Zhao, X. (2020). Micromobility Trip Origin and Destination Inference using General Bikeshare Feed Specification (GBFS) data. <i>Proceedings of Transportation Research Board 100th Annual Meeting, Washington, DC.</i>	1/2021	presentation
B3, D4	Xu, Y., Paliwal, M., Zhao, X. (2020). Real-time forecasting of micromobility demand: A context-aware recurrent multi-graph convolutional neural network approach. 2021 TRB workshop sponsored by AED50 (TRB Committee on Artificial Intelligence and Advanced Computing Applications).	1/2021	media
B3, D4	"Scoot over! Study reveals E-scooter use in Washington, D.C." https://www.sciencedaily.com/releases/2021/03/210301091147.htm	March 2021	media
B3, D4	"E-Scooters are best for short trips to transit, shops: Study" by Gersh Kuntzman references research and was published in StreetsBlogNYC ;	March 2021	invited talk

	https://nyc.streetsblog.org/2021/03/04/e-scooters-are-best-for-short-trips-to-transit-shops-study/		
B3, D4	Zhao, X. (2021). Planning micromobility for future smart cities. University of Miami School of Architecture.	March 2021	media
C2	McDonald, N. and Q. Yuan*. 2021. Freight Loading Space Provision: Evidence from the U.S.A. <i>Journal of Urban Planning and Development</i> 147(2). https://ascelibrary.org/doi/full/10.1061/%28ASCE%29UP.1943-5444.0000688	2021	publication
C3	2021 TRB Annual Meeting, Poster Presentation: Lee, M.S., Jin, X., and Tousif, F. Examining the Mobility Needs and Challenges of Older Adults in Urban, Suburban, and Rural Environments.	1/2021	publication
C3	Liu*, C., and Bardaka, E. (2021). The suburbanization of poverty and changes in access to public transportation in the Triangle Region, NC. <i>Journal of Transport Geography</i> 90. https://doi.org/10.1016/j.jtrangeo.2020.102930	Dec-20	presentation
D2	Classen, S., Wersal, J., Mason, J., Rogers, J., & Sisiopiku, V. (2020). Face and content validity of an automated vehicle road course and a corresponding simulation scenario. <i>Frontiers in Future Transportation</i> . https://www.frontiersin.org/articles/10.3389/ffutr.2020.596620 .	12/15/2020	publication
D2, A3	Classen, S., Hwangbo, S. W., Mason, J., Wersal, J., Rogers, J., & Sisiopiku, V. P. (2021). Older drivers' motion and simulator sickness before and after automated vehicle exposure. <i>Safety</i> . https://doi.org/10.3390/safety7020026	4/2/2021	presentation
D4	Wang, X., Yan, X., Zhao, X., Cao, Z. (2020). Identifying latent shared mobility preference segments in low-resourced communities: ride-hailing, fixed-route bus, and mobility-on-demand transit. Proceedings of Transportation Research Board 100th Annual Meeting, Washington, DC.	1/2021	conference presentation
D4	Zhao, X., Wang, X., Yan, X., Cao, Z. (2020). Assessing Preference Heterogeneity for Mobility-on-Demand Transit Service in Low-Income Communities: A Latent Segmentation Based Decision Tree Method. Proceedings of Transportation Research Board 100th Annual Meeting, Washington, DC.	1/2021	conference presentation
D4	Zhao, X. (2021). Micromobility for smart cities: Planning, design, and operations. Interstate Transit Research Symposium.	12/2020	publication
D4	Xu, Y., Yan, X., Liu, X., & Zhao, X. (2021). Identifying key factors associated with ride-splitting adoption rate and modeling their nonlinear relationships. <i>Transportation Research Part A: Policy and Practice</i> . https://doi.org/10.1016/j.tra.2020.12.005	01/2021	publication
D4	Yan, Xiang, "Make e-scooters work with transit, not against it" published on the Greater Greater Washington website. https://ggwash.org/view/80884/make-e-scooters-work-with-transit-not-against-it	April 2021	media
D4	Zhao, X. (2021). Leveraging machine learning to plan innovative mobility systems. Seminar Series of Collective Impact in Transport Systems, Hiroshima University, Japan.	Feb 2021	invited paper
D4	Zhang, X., Yang, Y., Cochran, A. L., McDonald, N., & Zhao, X. (2021). Optimizing demand-responsive paratransit operations: A Mixed Integer Programming approach. Proceedings of 55th Annual Conference on Information Sciences and Systems (CISS).	March 2021	presentation

G3	Presentation at TRB 2021: Title: CAV Dedicated Lane: Mobility Implications of Access Control in a Mixed Traffic Environment. Authors: Dr. Shoaib Samandar, Tanmay Das, Dr. Nagui Roupail, Dr. Billy Williams, Dr. Eleni Bardaka.	Jan 2021	publication
G3	Presentation at TRB 2021 and forwarded for publication review: A Red-Light Violation Warning System in a Connected Vehicle Simulation Environment; Mohammed Hadi, Ph.D., PE Kamar Amine Thodsapon Hunsanon Mahmoud Arafat	Jan 2021	presentation
G3	Presented at TRB 2021 and accepted for publication at TRB TRR: Stop Sign Gap Assist Application in a Connected Vehicle Simulation Environment; Mahmoud Arafat. Mohammed Hadi, Thodsapon Hunsanon, Kamar Amine A	Jan 2021	presentation
G3	Mahmoud Arafat. Thodsapon Hunsanon, Kamar Amine A were invited to present "Intersection Safety Applications in a Connected Vehicle Simulation Environment" at the PTV Talk Student Edition.	3/17/2021	presentation
I2	Sisiopiku, V.P., Morshed S. A., Sarjana, S., and Hadi, M. (2021). "Transportation Users' Attitudes and Choices of Ride-Hailing Services in Two Cities with Different Attributes." Journal of Transportation Technologies, Vol. 11 (2). https://www.scirp.org/pdf/jtts_2021040213443724.pdf	4/2021	paper
J2	Supervised and Unsupervised Data Analytic Techniques to Support Integrated Facility and Segment Level of Service Analysis. Invited Presentation at the Technology Transfer subcommittee chair for TRB highway capacity and quality of service committee (ACP40)	Jan 2021	publication
K3	Hu, Guojing, Weike Lu, Robert W. Whalin, Feng Wang, and Tor A. Kwembe. "Analytical approximation for macroscopic fundamental diagram of urban corridor with mixed human and connected and autonomous traffic." IET Intelligent Transport Systems.	12/31/2020	conference paper
Student Posters	The STRIDE Center featured fifteen student research posters during the 2021 Virtual Student Poster Showcase & Competition held during a live, online event on Friday, January 29, 2021 in conjunction with TRB. Students provided a 3-minute presentation of their poster that was reviewed by a panel of judges. Links to all presentations can be found on the STRIDE website (https://stride.ce.ufl.edu/2020/11/stride-student-poster-showcase-competition-january-29-2021/)	1/29/2021	posters

OUTCOMES

The STRIDE Center uses the metrics shown in the table below to assess the OUTCOMES related to its technology transfer program. Fifty-three trainings serving 3,228 professionals have been held for STRIDE projects to-date.

Researchers have exceeded the targets for both the number of trainings and the number of professionals trained for both Year 1 and Year 2 projects thus far.

METRIC	Year 1 Projects Target/ Completed	Year 2 Projects Target/ Completed	Year 3 Projects Target/ Completed	Year 4 Projects Target/ Completed	Multiple Project/ Other	TOTAL COMPLETED (All Projects)
Body of Knowledge: Number of technology transfer trainings for transportation professionals on a new or	9 / 24*	18 / 21*	11 / 4*	6 / 1*	3	53* Trainings

improved congestion mitigation approach (workshops, webinars)	(4 new this period)	(3 new this period)	(4 new this period)	(1 new this period)	(3 new this period)	(15 new this period)
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 / 924* (324 new this period)	180 / 1357* (203 new this period)	110 / 400* (400 new this period)	60/ 30* (30 new this period)	192 (192 new this period)	3228* Professionals trained (1149 new this period)

* Totals include this and all prior reporting periods.

Trainings & Professionals Trained

Fifteen trainings engaged 1149 professionals during the reporting period, as shown in the table below. There were an additional 299 views of YouTube recordings of STRIDE webinars.

Proj#	Training	Date	# Trained	YouTube Views
K2	STRIDE webinar - Dr. Nagui Roupail presented "Framework for the Operational Analysis of Ramp Weaves"	10/12/2020	49	107
E	STRIDE Webinar - Dr. Ruth Steiner, UF and Dr. Tabitha Combs, UNC Chapel Hill presented "New Approaches to Conducting Traffic Impact Assessment (TIA) in the Southeastern United States"	10/21/2020	66	58
F2	DOT "Getting to Know Artificial Intelligence (AI)" Webinar, Lili Du, University of Florida presented "AI Aided Transportation System Management and Decision Making "	10/1/2020	76	
D	PTV Annual User Group Meeting. Presentation Title: Autonomous and Connected Vehicle Operational Performance Evaluation Using PTV VISSIM (11/12/2020) Presented by Dr. Pruthvi Manjunatha, Dr. Michael Hunter and Dr. Lily Elefteriadou; PTV is a software company, with VISSIM as its main product. VISSIM is one of the most widely used microsimulation software.	11/12/2020	100	
D	TRB Workshop on Simulation and CAV modeling. Presentation Title: Evaluation of the Operational Effects of Autonomous and Connected Vehicles through Microsimulation (11/18/2020) Presented by Dr. Pruthvi Manjunatha, Dr. Michael Hunter and Dr. Lily Elefteriadou; http://onlinepubs.trb.org/onlinepubs/Conferences/2020/TrafficSimCAV/TrafficSimProgram.pdf	11/18/2020	100	
H	STRIDE webinar - Dr. Dimitra Michalaka, Associate Professor at The Citadel and Dr. Michael Hunter, Professor at Georgia Tech, presented "Strategies for Mitigating Congestion in Small Urban and Rural Areas"	11/4/2020	58	52
H2	Southern Plains Transportation Center (SPTC) – Dr. Nasim Uddin presented "Drive-by and Fly-by Bridge Monitoring and Damage Detection Technology" (online presentation, training, demonstration, short video) on Zoom	9/23/2020	78	
B3	A webinar on transportation data analytics for professional training is scheduled in late Oct 2020.		20	
I3	Dr. Hugo Zhou and Dan Xu presented the Best Paper "Analysis of Headway and Speed based on Driver Characteristics and Work Zone Configurations Using Naturalistic Driving Study Data" at TRB Annual Meeting selected by ACH40 committee.	1/12/2021	70	

D4, B3	Xu, Y., Paliwal, M., Zhao, X. (2020). Real-time forecasting of micromobility demand: A context-aware recurrent multi-graph convolutional neural network approach. 2021 TRB workshop sponsored by AED50.	1/2021	300	
B3	Dr. Xilei Zhao gave an invited lecture, entitled "Planning micromobility for future smart cities," for the course "Miami 2030 – from smart transportation to urban transformation" at the University of Miami School of Architecture.		10	
D4	Dr. Yan gave a presentation, entitled "Shared micromobility & public transit integration," for the UFTI I-STREET stakeholder meeting.		30	
many	STRIDE Webinar - Students sponsored by STRIDE presented at the 2021 Virtual Student Poster Showcase & Competition during the 2021 TRB conference.	1/29/2021	75	34
cost-share	STRIDE Webinar - Human Factors Research at UFTI: Current Research and Future Directions - Moderator – Alexander Bond, UFTI External Advisory Board member; Speakers - Paul Lewis, Eno Center for Transportation, UF researchers: Dr. Eakta Jain, Dr. Nicholas Napoli, Dr. Pruthvi Manjunatha, Dr. Sanaz Motamedi, Dr. Justin Mason, Dr. Wayne C.W. Giang	3/10/2021	55	27
Work-force Dev.	STRIDE Webinar - Brigitte Kornbroke, Michelle O'Donnell, and Vitor Suguri, Florida Department of Transportation presented student opportunities at the Florida Department of Transportation	3/24/2021	62	21
	TOTAL for Reporting Period		1149	299

IMPACTS

The STRIDE Center uses the list of metrics shown in the table below to assess the IMPACTS related to its technology transfer program. Over 136 meetings with stakeholders have been completed and ten products have been adopted or implemented to-date. Researchers have exceeded the target number of stakeholders for Years 1, 2 and 3 thus far.

METRIC	Year 1 Projects Target/ Completed	Year 2 Projects Target/ Completed	Year 3 Projects Target/ Completed	Year 4 Projects Target/ Completed	TOTAL COMPLETED (All Projects)
Stakeholders: Number of stakeholders (agencies, businesses, etc.) you meet with to encourage adoption or implementation of congestion mitigation approaches	9 / 10*	18 / 78*	11 / 35*	6 / 13*	136* Stakeholder Meetings
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 / 2*	2 / 8* (5 new this period)	2 / 0*	2 / 0*	10* Products Adopted/ Implemented

* Totals include this and all prior reporting periods.

Stakeholder Meetings

Researchers held 35 meetings with stakeholders during the reporting period. Researchers have held meetings with more than 136 stakeholders. Some researchers meet with their stakeholders on a weekly or regular basis and some meetings include multiple stakeholders.

Proj #	Stakeholder	Date	Description
C2	Charles Edwards (NCDOT); Dana Magliola (NCDOT)	ongoing	Findings of the project were shared.
H2	ALDOT RAC		Feasibility Study of the Unmanned Aerial Vehicles (UAV)-based Traffic Management Systems
K2	NCHRP 07-26 research team	10/27/2020	Dr. Rouphail was invited to present the STRIDE model and computational engine to the NCHRP 7-26 research team "Update of Highway Capacity Manual"
K2	NCHRP 07-26 team	11/9/2020	A discussion was initiated on how to best coordinate the STRIDE method developed in this project with ongoing research under the auspices of NCHRP 7-26. Met with Dr. Bastian Schroeder, the NCHRP project PI via a zoom meeting and agreed to coordinate the activities and house the 7-26 database in the STRIDE Zenodo data repository.
A3	UF Korean Student Association	11/10/2020	Seung Woo Hwangbo has presented this study to potential participants via online Zoom meetings.
A3	UF Occupational Therapy Doctorate (OTD) Program	11/17/2020	Seung Woo Hwangbo has presented this study to potential participants via online Zoom meetings.
C3	Orange County Dept for Aging (Alison Smith)	December 2020	Abigail Cochran presented our STRIDE research results to a virtual working group meeting of local transit and social service agencies engaged with access to health care as well as community members. Meeting involved representatives from UNC Health, Orange County Public Transit, Chapel Hill Transit, GoTriange, NC Department of Health and Human Services, the Orange County Health Department, and the Orange County Department for Aging.
D3	Charles Cochran, Sain Associates	10/10/2021	Met to discuss proposed budget and additional traffic data.
F3	Lucinda Statler, City of Columbia		The project team re-established communication with the City of Columbia on acquiring bike usage GPS data from their Blue Bikes bikeshare system. Communication was temporarily interrupted with the retirement of the former city planning administrator, Mr. John Fellows. However, after engaging with the new administrator, Lucinda Statler, a revised data sharing agreement that would grant access to the bike usage GPS data from the MaaS service has been submitted. The agreement is in the second review phase and an update should be available in the next report.
G3	Frank Corrado, FHWA; Greg Morris, FHWA; Phillip Freeze, TNDOT; Sullivan, James S, MDOT; Raj Ponnaluri, FDOT; Perry, SCDOT; Heath, GDOT	11/5/2020	The research team conducted a stakeholder focus workshop with the participation of representatives from several state DOTs and FHWA representatives who have agreed to participate in a videoconference and provide feedback. Valuable information for the research was collected in the workshop.
C4	Jeremy Dilmore, FDOT District 5 TSM&O Program Engineer	12/29/2020	We were trying to identify people who have been engaged in workforce development in the Southeast and we were referred to Mr. Dilmore because he has been actively engaged in TSM&O and ITS workforce development in the Orlando region and throughout Florida.

D4	Malisa McCreedy, Director of Mobility, City of Gainesville Debbie Leistner, Public Works Planning Manager, City of Gainesville	10/20/2020	Drs. Zhao and Yan met with key stakeholders listed below to seek feedback on our work.
D4	Andrea Broaddus, Sr. Research Scientist, Ford Motor Company Josh Johnson, Public Policy Manager, Spin	Sept 30, 2020 – Present (every two weeks)	Drs. Zhao and Yan have been regularly meeting with key stakeholders from Ford/Spin to seek feedback on our work
D4	Laurence Wilse-Samson, Sr. Manager of Policy Research, Bird	29-Oct-20	We met with the key stakeholder from Bird to seek feedback on our work.
D4	Amy Strickland, Ben Burmester, Brandy Ezelle, Don Andrae, et. al.	10/9/2020	Dr. LaMondia met with the Auburn University Sustainable Transportation Oversight Group to discuss plans for implementing scooters and e-bikes.
D2	Jesus Gomez (CoG), Dr. Pruthvi Manjunatha (UF I-STREET), & Neal Hemenover (Transdev)	10/16/2020 - 1/15/2021	Dr. Mason meets bi-weekly with the City of Gainesville, UF I-STREET, and Transdev for shuttle operation updates to plan and organize data collection. These meetings have been instrumental in providing us with updates related to the automated shuttle and their policies to mitigate the spread of COVID-19
A3	Derrick Breun, VP of Operations at Transdev, Jesus Gomez, City of Gainesville, I-Street	Weekly	Justin Mason has been in constant communication with the City of Gainesville, I-STREET, and Transdev to plan and organize data collection. Stakeholders have been providing us with updates related to the automated shuttle and their policies reflecting COVID-19.
A3	Derrick Breun, VP of Operations at Transdev, Elisha Ghosn, Jason Perez, Michelle, Transdev	weekly	Seung Woo Hwangbo has been in constant communication with Transdev on participants' schedules for data collection. Seung Woo has been meeting with Michelle (Transdev, EZ10 shuttle safety operator) for data collection at Lot 10 (100 SW 1 Ave, Gainesville, FL 32601 Stakeholders have been providing us with updates related to the automated shuttle and their policies reflecting COVID-19.
A3	Sara Marsh, Study Navigator, Health Street at the University of Florida	2/25/2021	Seung Woo Hwangbo had a meeting with UF Health Street study navigator, Sara Marsh, to enroll the study within the system for the potential participant recruitment.
D4	Carlos Cruz-Casas, Assistant Director of Miami-Dade County DOT & Public Works Division of Transportation Strategic Planning	3/24/2021	We met with the key stakeholder from Miami to seek feedback on our work and explore opportunities for product adoption.
D4	William Slot, Chief Innovation Officer of LYNX Doug Jamison, Senior ITS Developer of LYNX	4/8/2021	We met with the key stakeholder from LYNX, Central Florida Regional Transportation Authority, to seek feedback on our work and explore opportunities for product adoption.
C3	<i>Malisa McCreedy (Director of Transportation and Mobility, City of Gainesville), Jesus Gomez (Director, Gainesville Regional Transit)</i>	1/20/2021	Xueyin Bai presented the results of our analysis of the accessibility of the transit network for the following types of trips: work, medical, grocery shopping, education, and social under the three scenarios - the impact of COVID-19, recovery from COVID-19, and the transit development plan for the next five years.

C3	Rodger Lentz, Chief Planning and Development Officer, City of Wilson, NC	2/4/2021 and 3/22/2021	We discussed the new microtransit pilot in the City of Wilson (operated by Via) and the possibility of them sharing data with our research team to conduct a preliminary evaluation of their system from an equity lens. This fits into one of our research objectives: assessing smart mobility solutions for rural and suburban areas. In a follow-up meeting on March 22, 2021, we met with Via staff and discussed a potential data sharing agreement.
H3	Brandon Branham, Assistant City Manager, City of Peachtree Corners, Georgia	3/18/2021	Dr. Peeta and post-docs in the research group had an online meeting with Brandon Branham, Assistant City Manager of Peachtree Corners, on 3/18, to discuss the potential use of the incentive mechanism to achieve the local community's sustainability objectives. A research proposal, Fostering Smart and Sustainable Travel through Engaged Communities using Integrated Multidimensional Information-Based Solutions, was developed after the meeting.
Q2	UC David COVID-19 Mobility Study	February 2021 - present (weekly)	Attending weekly meetings with UC Davis team about collaboration of future survey data collection efforts regarding COVID-19 transportation decisions and ridehailing. The team has shared data from past surveys, but previous survey efforts involve ride hailing and not specifically shared ride hailing. Future survey efforts are planned to include some shared ridehailing questions.
C4	Stakeholder Meeting	January 19, 2021	We had a stakeholder meeting via Zoom in which we had Alex Bond make a keynote presentation and then we divided the group into four breakout groups. Stakeholders included Jeremy Dilmore; Leta Huntsinger; Jarrod Stanley; Kyle Mote; Matthew Cate; Gibran Hadj-Chikh- Kittleson and Associates; Alexander Bond –USDOT; Stuart Day – Stantec; Daniel Halstead; Martha Horseman-- University of Kentucky; Brad Freeze - Tennessee Department of Transportation; Alison Stettner- Florida Department of Transportation; Larry Hagen-Hagen Consulting Services; Lee Tupper- HDR
C4	Transportation Planning Division (TPD) of the American Planning Association (APA)	March 3, 2021	We met with the leadership of the Transportation Planning Division (TPD) of the American Planning Association (APA) to discuss partnering with them to help us conduct a survey of their membership on workforce development activities.
C4	ITE leadership	Feb 18, 2021	We talked to ITE leadership to discuss potential opportunities to distribute workforce development survey through the Institute of Transportation Engineers (ITE) network. Kathi Driggs (ITE CCO) was also contacted via email to see what criteria ITE must share the survey with their members, as ITE need to assess whether the survey would be providing something to the industry. The research team recently shared the survey questions with ITE for their feedback.
C4	APA Leadership – Planning & Community Health	2/19/2021 and 3/2/2021	We discussed potential opportunities to distribute the survey through National APA network along with AAP TPD. We were connected to the main communication office for further conversation. We seek a potential opportunity to advertise the study during the upcoming National Planning Conference (NPC).

C4	Members of the Transportation Planning Division of the American Planning Association	3/10/2021	Attended a Zoom happy hour that was organized by the Transportation Planning Division (TPD) and the Energy, Natural Resources and Environment Division of the American Planning Association, to make an announcement about the study.
F3	Gotcha - Powered by Bolt Kathryn Sims, Account Manager; Jonathan White, Bicycle Technician	1/28/2021	Meeting agenda was on: I. Reestablishing collaboration for project with new management of Gotcha - Powered by Bolt II. Overview of the partnership with Gotcha since 2018, including Active Living Research Conference, C2M2 Grant for case study work in Charleston + local presentations, STRIDE grant overview. III. Inquiry into e-bike lab testing
F3	Gotcha - Powered by Bolt Kathryn Sims, Account Manager; Jessica Bent, Data Manager and Analyst; Michelle Glowacki, Account Manager; Jonathan White, Bicycle Technician	3/2/2021	Meeting agenda was on: I. Data sharing and account dashboard access
E3	Mathew Palmer, Director, Strategic Planning Initiatives, Durham Public Schools	ongoing	The project team has had ongoing communications, in person, on phone, and by email, with Durham Public Schools, primarily with their strategic planning office but also with their school bus routing team. The stakeholders were excited by the possibility of reducing the impact of congestion upon their school buses, by improving routing and other means, once the study is complete.
E3	Education Logistics, Inc. (Edulog) - Andy Leibenguth, Senior Consultant	ongoing	Ongoing conversations with Senior Consultants from Edulog about applicability of data within their software to help answer the research question. Previous discussions focused on easily obtainable data from within Edulog as to minimize the amount of additional work required by local school systems. Edulog also sees value in using Bus Route Information (Stop Locations, Stop Times, Path of Travel and Total Passenger Counts) to help study the cost of congestion. After narrowing down a list of applicable Florida counties, Edulog helped to place the STRIDE Team in contact with appropriate contacts in several Florida school systems.
E3	Brian Fahey, Transit Administrator, GoDurham	1/7/2021	This meeting was to discuss the project and our data needs from the Durham, NC transit agency, GoDurham.

Product Adoption

There were 5 product adoptions during the reporting period. We anticipate product adoptions from Year 1 and Year 2 projects as they come to completion. Ten products have been adopted or implemented to-date.

A2	Product 1: Methodology – The developed methodology has improved the understanding of regional and local transit agencies on the level of accessibility they provide to transportation disadvantaged populations. Implementation of this product will be further encouraged in future interactions with the transit agencies through webinars or in-person meetings.
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A2	Product 2: Ridership Model – Both MARTA and Minneapolis METRO Transit have used the ridership model to understand where ridership decreases are taking place within their systems to react to outside influences. The project team continues to follow up with all four agencies involved in the study to clarify the results and help them respond through service allocations.
A2	Product 4: Typology – GoDurham has consulted the healthcare mobility services typology to understand best use cases of ridehailing collaboration with paratransit. Most notably, they have looked at cost effectiveness examples we provided to understand local feasibility.
Q2	Lessons learned from online-survey are being used to develop a recruitment guide for quick and effective deployment of surveys for practitioners.
Q2	Literature review was adopted to form a lecture and student homework assignment for Multimodal Transportation course.

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 – *The COVID 19 pandemic has caused the cancellation or postponement of several events and activities. The STRIDE consortium has modified several K-12 programs to an on-line format. All project meetings and university courses have continued uninterrupted. Reduced traffic and social distancing rules may result in delays in data collection.*
- 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, Year 2, Year 3, and Year 4 List of Projects

(For the complete list, visit: <https://stride.ce.ufl.edu/stride-research/active-research-projects/>)

STRIDE Year 5 List of Projects

(These are the STRIDE Center's most recently funded projects, which are in the process of being subcontracted in Spring 2021)

Barriers and Facilitators of People with Disabilities in Accepting and Adopting Autonomous Shared Mobility Services

Lead PI: Dr. Sherrilene Classen, University of Florida

Team: Dr. Virginia Sisiopiku, UAB; Dr. Justin Mason, UF; and Dr. Nicole Stetten, UF

Helping Practitioners Increase Access to Medical Care through Design Thinking (Project B5)

Lead PI: Dr. Noreen McDonald, UNC Chapel Hill

Team: TBD

Improving Traffic Impact Analysis to Better Reflect Community Goals (Project C5)

Lead PI: Dr. Tabitha Combs, UNC Chapel Hill

Team: TBD

Mobility-on-Demand Transit for Smart, Sustainable Cities (Project D5)

Lead PI: Dr. Noreen McDonald, UNC Chapel Hill

Team: Dr. Ruth Steiner, UF; and Charles Edwards, UNC Chapel Hill

A Framework to Promote Diversity and Inclusion in Workforce Development in Southeast States Project E5)

Lead PI: Dr. Mehri Mohebbi, UF

Team: Dr. Virginia Sisiopiku, UAB; Dr. Dimitra Michalaka, The Citadel; and Dr. Kweku Brown, The Citadel

Workforce Development/Technology Transfer Proposal In Progress (Project F5)

Lead PI: Dr. Nithin Agarwal, Director, Technology Transfer Center, UF

Team: TBD

Engineering Careers of Graduates from a Unique Summer Bridge Program (Project G5)

Lead PI: Dr. Robert Whalin, JSU

Identifying and Mitigating Congestion Onset (Project H5)

Lead PI: Dr. George List, NCSU

Team: Dr. Billy Williams, NCSU; Dr. Mike Hunter, GaTech; Dr. Mohammed Hadi, FIU; Dr. Anghshuman Guin, GaTech

Evaluation of Advanced Vehicle and Communication Technologies through Traffic Microsimulation, Phase II (Project I5)

Lead PI: Dr. Pruthvi Manjunatha, UF

Team: Dr. Lily Elefteriadou, UF; Dr. Mike Hunter, GaTech; Dr. Huaguo Zhou, Auburn; Dr. Shirin Noei, TTU; Dr. Anghshuman Guin, GaTech; Dr. A. Saroj, GaTech

Assessing and Addressing Deficiencies in the HCM Weaving Segment Analyses, Phase II (Project J5)

Lead PI: Dr. Nagui Roupail, NCSU

Team: Dr. Lily Elefteriadou, UF

New Cost Share Projects for this Reporting Period

Investigation of E-Commerce Enabled Freight Demand

PI: Dr. Xia Jin, FIU

Sponsor: Florida Department of Transportation

University of Florida Testbed Initiative – Transit Components (Smart Bus Bike Rack System)

PI: Dr. Yong-Kyu Yoon, UF

Sponsor: Florida Department of Transportation

Evaluating the Connection Between Transit and TNCs (Transportation Network Companies) in Pinellas County for Statewide Application

PI: Dr. Zhong-Ren Peng, UF

Sponsor: Florida Department of Transportation

Evaluating the Operations and Safety Benefits of AI-driven Driver Information-focused Countermeasures for CAV Technologies

PI: Dr. Siva Srinivasan, UF

Sponsor: Florida Department of Transportation