Program Progress Performance Report for University Transportation Centers

Submitted to:	**U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology (OST-R)**
Grant Number:	**DTRT13-G-UTC42**
Project Title:	**Tier I University Transportation Centers Center for Accessibility and Safety for an Aging Population (ASAP)**
Program Director:	**John O. Sobanjo, Ph.D., P.E. Professor and Director Center for Accessibility and Safety for an Aging Population (ASAP) Florida State University 2525 Pottsdamer St., Rm. 129, Tallahassee FL 32310 jsobanjo@fsu.edu / (850) 410.6153**
Submitting Official:	**Same as Program Director**
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Signature of Submitting Official:

1. Accomplishments

1.1 Major Goals and Objectives of the Center

1.1.1 Research

With motivation from Florida's large number of senior residents, the reported relatively high involvement of seniors in traffic crashes nationwide and their special needs for transportation, the theme of the Center is to promote safe and accessible transportation for the aging population. The center focuses on four interdisciplinary areas: Accessibility and community connectivity among older adults; human factors affecting the older population, especially regarding acceptance of emerging technologies; geometric design research, especially regarding elder crash mitigation; and health, wellness and safety of seniors as it relates to multimodal transportation and emergency operations.

1.1.2 Education and outreach

The Center faculty are committed to education and workforce development at all levels, including activities such as the following: Research assistantships; Annual graduate student research colloquia; Seed grants for student pilot projects; Dissertation fellowships; Monthly brown bag lunch and seminar series; Expanding existing NSTI summer program at Florida A&M University (FAMU) and developing NSTI program at Florida State University (FSU), to serve a larger student population over longer time frame; Conducting an annual K-12 Transportation Day; and developing online educational activities and games for inclusion on the Center website.

1.1.3 Collaboration and diversity

The Center is a collaborative effort among Florida State University (FSU), Florida A&M University (FAMU), and the University of North Florida (UNF), with FSU serving as the lead institution. The selection of these two collaborative institutions (FAMU and UNF) is special because of the uniqueness of the two institutions, with FAMU being an HBCU institution. The Center also collaborates with other public section organizations as well as with other Universities. There are both External and Internal Advisory Boards with members appointed from private industry, government agencies, e.g., federal, state, county, city, etc., and academic institutions. Our Center is uniquely equipped to address the challenges of broadening participation and attracting minorities to the transportation field. The Center is committed to increasing the number of students in STEM (science, technology, engineering, and mathematics) fields in general and the transportation field in particular.

1.2 Accomplishment under Major Goals and Objectives

1.2.1 Research

The Center has conducted two cycles of research proposal funding. This report focuses on the ongoing and completed projects in the second cycle. Ten projects funded in the second cycle, started January 2015 and they are scheduled for an average of 18-month durations. The Center's research projects have been multi-disciplinary in nature, thus involving principal investigators across colleges and universities in the consortium. With the Center's focus on safety and accessibility as it affects the aging population, each project was assessed in terms of the MAP-21 (Pub. L. 112-141 Sec. 52003) requirements as follows:

- Section 52003 (b) (2) IMPROVING HIGHWAY SAFETY: Outcomes include: Safety assessments and decision-making tools, Innovative operational improvements and designs of roadway and roadside features, Safety measures for vulnerable road users, including bicyclists and pedestrians, and Human factors studies and measures.

- Section 52003 (b) (4) STRENGTHENING TRANSPORTATION PLANNING AND ENVIRONMENTAL DECISIONMAKING: Outcomes include: Creation of models and tools for evaluating transportation measures and transportation system designs, including the costs and benefits; and Transportation and economic development planning in rural areas and small communities.

The funded projects are summarized in the following sections with some details provided on each project, followed by a table indicating how the projects relate to the MAP-21 requirements. The specific accomplishments in terms of publications, conference presentations, etc. are listed later on in other sections (2.0 Products) of this report.

Funding Cycle 2 Research Projects

ASAP2014-001: Student Pilot Project: Improving Data Validity in a Driving Simulator: Effects of Guided Practice in Older Adults on Simulator Handling Skills and Incidence of Simulator Sickness (FSU: Dept. of Psychology), (Project Duration: 1/6/2015 to 8/7/2015 with no cost extension to 5/1/2016)

Although driving simulators are increasingly used in research because they allow precise investigation of critical issues which would otherwise be unsafe or impractical, simulator studies can be costly due to high levels of data loss. These losses accrue when participants lack the skill to handle a simulator as if it were a real car or become sick and must discontinue participation. Older participants often suffer significant data losses, and it can be difficult to recruit more in a timely fashion. During one such study, skill deficits in simulator handling were observed and a guided practice scenario developed to correct the issue. Resulting data were significantly more consistent and suggestive of increased skill. The current research proposes: to extend these findings among older adults to handling the simulator on curving roads and during turns at intersections; to determine whether an automated practice scenario can provide similar benefits; and explore whether the benefits of guided practice extend to reducing incidence of simulator sickness. Preventing data loss from data validity and simulator sickness issues would be of great benefit to researchers working in partnership with the ASAP Center and using simulators.

ASAP2014-002: Understanding Contributing Factors to Wrong-way Crashes and Evaluating the Effectiveness of Countermeasures in Reducing Wrong-way Crash Risk of Older Drivers (FSU: Dept. of Psychology; and UNF: School of Engrg.), (Project Duration: 2/28/2015 to 8/5/2016)

Although relatively infrequent, when Wrong Way Crashes (WWCs) occur they are much more likely to be fatal, and to involve multiple fatalities, compared to other types of highway crashes. Impairment as a result of drug and/or alcohol consumption is a major contributing factor to WWCs. However, older drivers are also at greater risk of being involved in WWCs. The focus of the current project was to assess the effectiveness of different countermeasures in preventing Wrong Way Entries (WWEs), a frequent precursor to WWCs, and reducing confusion regarding highway entry points. A driving simulator study asked older drivers (65+) to enter a highway using an entrance ramp on the left while passing an exit ramp on the left that featured various levels of wrong way countermeasures (minimum required signs and pavement markings defined by the MUTCD, minimum plus the addition of a No Left Turn (R3-2) sign before the lip of the exit ramp, and an enhanced countermeasure condition that included additional signs, larger signs, and enhanced pavement markers. The number of WWEs did not statistically differ as a function of countermeasure level, nor did pre-planned analyses of behavioral driving data reveal differences in uncertainty regarding which ramp (entrance or exit) to enter. Exploratory analyses found that a measure of confusion/uncertainty (speed before the exit ramp) did differ significantly between the minimum and enhanced countermeasure conditions, in line with previous simulator findings that enhanced countermeasures can reduce confusion (Boot, Charness, Mitchum, Roque, Stothart, & Barajas, 2015). While providing some support for the benefit of enhanced countermeasures, results also suggest that WWEs are particularly difficult to prevent. Even in the minimum plus and enhanced conditions featuring

multiple redundant cues, some older drivers (2) still entered the exit ramp. This research highlights the need to understand not only the best set of cues to prevent WWEs, but the most effective cues to provide further down the exit ramp (e.g., flashing Wrong Way signs, flashing in pavement LED markers) to encourage retreat once a WWE has occurred.

ASAP2014-003: Travel Time and Roadway Capacity Reliability for an Aging Population: The Development of a Model Integrating Roadway Traffic with Aging Adults' Driving Behavior (FSU: Dept. of Civil & Env. Engrg; Dept. of Geography; FAMU: Dept. of Civil & Env. Engrg; and UNF: School of Engrg.), (Project Duration: 1/6/2015 to 8/5/2016)

The highly developed and heavily used American roadway infrastructure plays a pivotal role in ensuring mobility, safety, reliability, and accessibility for the public. Technology, in the form of efficient and reliable decision-support systems, offers a valuable tool to improve the day-to-day and emergency operations and management of our existing transportation network and facilities, ensuring the most efficient utilization of surface transportation systems and offering sufficient travel time and network capacity reliability for the users. Meeting these transportation needs is especially important, and challenging, to vulnerable populations requiring more travel time and facing greater health and safety concerns – including aging adults. Given the aging of the population, technologies, including decision-support systems, are needed that are sensitive both to the transportation needs and behaviors of aging drivers and the reliability of the available transportation network in areas more heavily populated by aging adults. Such decision support systems would play a vital role in ensuring increased efficiency, reliability, and connectivity of the nation's highway transportation system, which is currently evolving in response to population aging. These challenges include not only daily traffic operations but also hazard relief response. Central to meeting these challenges are new aging-focused methodologies that will provide agencies with complete, practical, and efficient transportation management and operations procedures. The first step in obtaining such novel methodologies is to extensively evaluate two datasets: existing travel time/traffic data and aging driving patterns. The second step is to integrate them, in order to generate a comprehensive reliability-based model that jointly considers aging adults' travel behavior and traffic on roadway networks. The proposed project will derive this mathematical model through the creation of travel time and network capacity reliability measures based on this integrated database. In order to increase the utility of the model, it will be tested using real-world data from Florida, the state with the highest percentage of aging adults. Analyses also will examine, using scenarios built in GIS-based transportation network models, selected regions of Florida with particular traffic patterns and age profiles.

ASAP2014-004: Scenario-based Evaluation of Multi-Model Emergency Transportation Operations Towards Better Decision Making in Aging-Focused Humanitarian Logistics (FSU: Dept. of Civil & Env. Engrg; and FSU: Dept. of Geography), (Project Duration: 1/6/2015 to 8/5/2015 with no cost extension to 12/31/2015)

In a recent study funded by the Center, the PIs successfully developed a comprehensive knowledge base and a detailed multi-modal operational emergency needs assessment that could facilitate safe and accessible evacuation of aging people, and optimize the flow of critical resources into affected disaster regions to satisfy the needs of those who remain. The results of this unique research project, with an application to District 3 as identified by Florida Department of Transportation, indicate that there is no substantial prior work that has synthesized and evaluated these issues. From a transportation planning perspective, this problem becomes even more challenging when we consider implementing these ideas in the context of emergency management/operations plans. Thus, to ensure and promote the long-term usage of this knowledge base by state/federal agencies and other organizations, it is important to conduct a scenario-based implementation study that will address the following major goals: (a) to extend our previously developed methodology to other Districts of Florida, (b) to create and evaluate new aging-

focused emergency evacuation scenarios and case studies using GIS-based transportation network models such as CUBE, and (c) to leverage these tools and findings to inform emergency plans. This project will provide new knowledge for decision support and emergency assistance focusing on the safety, accessibility, speed and reliability issues that are critical for the survival of aging victims in the aftermath of disasters.

ASAP2014-005: An Investigation of Innovative Approaches to Transportation Service Provision for Aging Populations Residing in Areas Lacking Fixed-Route Public Transportation Service (FSU: Dept. of Urban and Regional Planning), (Project Duration: 3/20/2015 to 12/31/2015)

Many older Americans wish to remain in their current homes and communities as they age, and access to safe, reliable, and convenient transportation is critical for enabling them to do so. The availability of transportation options is particularly important to older Americans who for reasons of disability, income, or choice are not able to drive themselves. While older Americans living in metropolitan areas that provide fixed-route transit have access to public transportation to help them meet their mobility needs, nearly one out of five older adults live outside metropolitan areas and lack easy access to such transportation services. Many communities rely on paratransit services to help meet this critical transportation need; however, such services have serious limitations related to the high cost associated with providing these services, the need for users to schedule rides in advance of their actual travel, and service quality and reliability issues. In several states, individuals and organizations have begun to experiment with innovative transportation services that seek to address the limitations of the paratransit model in communities that lack fixed-route transit services. These services range from publicly funded, quasi-formal service networks to volunteer-led organizations that rely on private donations and informal operating approaches. Other informal approaches include volunteer-led transportation linkages that operate using personal vehicles, on-call scheduling, and existing social networks lo provide rides to older adults who need one. However, these services are understudied. There is a need for more information about the types of services that are provided, and there is a need for assessment about the effectiveness of their organizational, structures and service delivery strategies for providing critical mobility services for the older population, the sustainability of their funding models, and the applicability of such approaches for other communities. This study seeks to provide best practices guidance through a multiple case study national investigation of innovative transportation services in communities that lack traditional fixed-route transit.

ASAP2014-006: Transit-Oriented Development for Aging Adults: An Evaluation of Recent Trends, Best Practices, and Future Prospects (FSU: Dept. of Geography; and FSU Dept. of Urban and Regional Planning), (Project Duration: 5/1/2015 to 12/31/2016)

The availability of transportation options is particularly important to older Americans who are not able to drive themselves. While older Americans living in metropolitan areas that provide transit have access to public transportation to help them meet their mobility needs, nearly one out of five older adults live outside metropolitan areas. While there is some public transportation available in rural and small communities, there is a need for more information about the types of services that are provided, and there is a need for assessment about the effectiveness of their organizational structures and service delivery strategies for providing critical mobility services for the older population, the sustainability of their funding models, and the applicability of such approaches for other communities. Through the research we will address the following three questions: (1) what types of transportation services exist in rural and small communities?; (2) how are these transportation services organized, financed, and delivered by the entities that provide the services?; and (3) how are these transportation services utilized by older Americans? The final result of the research is a set of best practices for planners and other interested professionals in the United States.

ASAP2014-007: Biomechanics of Older Drivers to Mitigate Injury in Automobile Accidents, (FSU: Dept. of Civil & Env. Engrg; and FAMU: Dept. of Civil & Env. Engrg.), (Project Duration: 1/5/2015 to 8/5/2016 with no cost extension to 12/31/2016)

The objective of this study is to understand accident mechanism of aging drivers and passengers, in order to mitigate injury should accidents occur. The main approach is to conduct vehicle crash simulations using Finite Element (FE) models of the vehicle and the occupant. FE dummy models are being developed for aging driver/passenger (occupants) in automobiles, based on the population-average dummy models by LS-Dyna computer software. For selected cases, aging occupants using the Total Human Model for Safety (THUMS) will be also studied. These models will incorporate the frailty aspects of the aging person and other attributes such as driving posture. After developing the FE dummy models for aging occupants, FE analyses will be conducted simulating vehicle accidents. The biomechanical responses from the model will include estimates of incidence and severity of injuries to head and thoracic parts of the body. It was found in literature review that older drivers tend to sit closer to the steering wheel as opposed to younger drivers who tend to sit further away. Sitting closer by contracting the torso approximately 3 degrees can increase HIC15, chest acceleration, and pelvis acceleration as much as 5%, 3%, and 4% respectively. Physical experiments using a simplified dummy were conducted to solidify these FE simulation results. With the knowledge of body areas susceptible to injury, we can focus on the Injury Mechanisms, Biomechanical Response, and Human Tolerance specifically for the aging human. The study will also develop survivability envelopes for vehicle impacts for aging occupants, and compare them with those for younger occupants. The study will enable biomechanics-based recommendations to minimize the severity of injury, should accidents occur. These mitigation approaches include efficient safety restraint, seating setup, and other vehicle modifications that can help lessen bodily injury.

ASAP2014-008: An Investigation of Pedestrian Signals to Reduce Intersection Crashes and Red Light Violations for Elderly Drivers, (FAMU: Dept. of Architecture; UNF: School of Engrg; and FSU: Dept. of Civil & Env. Engrg.), (Project Duration: 1/5/2015 to 8/5/2016 with no cost extension to 12/31/2016)

Signalized intersections are designed to reduce the number of traffic conflicts by separating conflicting movements at an intersection. However, signalized intersections are known to have high likelihood of crash occurrences compared to other sections of the roadway. Decisions made by the drivers who are in dilemma zone are sometimes aided by upstream warning signals. Pedestrian signals have the potential of serving as warning signals as pedestrian green time coincides with the green time for corresponding traffic movement. For the elderly drivers, the decision making process is crucial since their perception reaction is longer than the average perception reaction time experienced by younger drivers. This study wishes to investigate the potential of utilizing pedestrian signals as warning signals and their impacts on driver's perception reaction time, specifically the elderly. This study will analyze intersections in Florida with different types of pedestrian signals and evaluate their effectiveness as it pertains to movement of traffic to assist with the reduction of crashes especially elderly crashes and red light violations. Additionally, the study will utilize questionnaire survey to gain insight of how drivers utilize pedestrian signals as warning signals.

ASAP2014-009: Micro-Analysis of Collisions in Crash Clusters: Creating Crash Patterns and Conducting a Driver Simulation Study, (UNF: School of Engrg.; FAMU: Dept. of Architecture; FSU: Dept. of Psychology; FSU: Dept. of Civil & Env. Engrg; and FAMU: Dept. of Civil & Env. Engrg.), (Project Duration: 1/5/2015 to 8/5/2016 with no cost extension to 12/31/2016)

One of the studies that were conducted in the first phase of funding by the Center was titled "Analyzing Crash Clusters Near Senior Destination Sites Using a GIS Approach". Using the GIS shapefiles for the elderly crashes, the study identified high crash clusters for 10 counties in Florida, most of which were listed as priority counties by the Safe Mobility for Life Coalition. This proposed study is the second phase which is intended to use the results of phase 1 in conducting an in-depth crash study in a crash by crash basis (microanalysis) in order to develop elderly crash patterns, create possible countermeasures, and examine the effectiveness of those countermeasures by using a driving simulator approach. The findings of this study will assist state and local safety officials in their strategic planning efforts for developing appropriate intervention and prevention programs for various roadway conditions in order to improve safety and enhance mobility for aging road users.

ASAP2014-010: Spatial-Context Intersections Safety Analysis for the Aging Population: An Integrated 3-Dimensional Visualization and Human Factors Simulation Approach, (FAMU: Dept. of Civil & Env. Engrg; and FSU: Dept. of Civil & Env. Engrg.), (Project Duration: 1/5/2015 to 8/5/2016)

To combat the potential for elderly drivers to be involved in collisions of all natures, the Federal Highway Administration (FHWA) developed the 2014 Handbook for Designing Roadways for the Aging Population. This handbook's chapter, which focuses on intersections, highlights sixteen Proven Practices and eight Promising Practices that can lead to the reduction in elderly traffic collisions. This research plans to directly investigate one of the Promising Practices (20 – High Visibility Crosswalks) and one of the Proven Practices (9 – Right-Turn Traffic Control for Signalized Intersections) and semi-directly one Proven Practice (8 – Left-Turn Traffic Control for Signalized Intersections). Through the utilization of Geographic Information Systems (GIS), 3D modeling, and the usage of the UTC's driving simulator, the study will determine regions where elderly drivers are involved in dangerous collisions, develop driving simulations where elderly and younger drivers will be expected to maneuver, and analyze the differences in behaviors between the elderly and younger drivers. From this data, conclusions will be developed as to how elderly drivers handle the cognitively-demanding scenarios, how the elderly drivers differed from the other age groups, and about the validity of the FHWA's belief that high visibility crosswalks can reduce elderly collisions with pedestrians. Additionally, this research strives to investigate the usage of a Flashing Turn Signal Head with Pedestrian Indication (FPI) to assist in reducing the number and level of collisions involving pedestrians and vehicles attempting to turn right. The expected outcome of the project will be specific planning and geometric design recommendations, as well as specific guidelines for education, licensing, and training for the ageing resulting from the spatial-context human factors analysis to improve the safety of the aging population.

ASAP2014-011: Student Pilot Project: Is the Driving Performance of Older Adults Exceptionally Impacted by Cell Phone Notifications? (FSU: Dept. of Psychology), (Project Duration: 9/1/2015 to 5/6/2016 with no cost extension to 8/5/2016)

Previous studies have found that older adults are especially impacted by mind wandering, which is characterized as the intrusion of task-unrelated thoughts. In a recent study, we found that the mere knowledge of having received a cell phone notification can negatively impact sustained attention and we believe that the mechanism underlying this effect is mind wandering. If this is true, then cell phone notifications may be especially damaging to the attention of older adults. In this document, we propose a study that will assess the extent to which the mere knowledge of having received a cell phone notification can impact driving performance on part of younger and older drivers. This study will be conducted by

sending unknowing younger- and older-aged drivers cell phone notifications while they perform a driving task in a simulator. Results from this study will broaden our view of cell phone-related distraction and inform the traffic and automotive safety industry.

Table 2. Funding cycle 2 research projects and relation to MAP-21 requirements

Project No.	MAP-21 Section 52003 (b) (2) Improving Highway Safety				MAP-21 Section 52003 (b) (4) Strengthening Transportation Planning and Environmental Decision-making		OTHER
	Safety assessments and decision-making tools	Innovative operational improvements and designs of roadway and roadside features	Safety measures for vulnerable road users, including bicyclists and pedestrians	Human factors studies and measures	Creation of models and tools for evaluating transportation measures and transportation system designs	Transportation and economic development planning in rural areas and small communities	
ASAP2014-001	√						√[1]
ASAP2014-002		√	√	√			
ASAP2014-003	√			√	√		√[2]
ASAP2014-004	√				√		√[3]
ASAP2014-005						√	√[4]
ASAP2014-006				√	√		
ASAP2014-007	√			√			
ASAP2014-008	√			√			
ASAP2014-009	√			√	√		
ASAP2014-010	√	√	√	√	√		
ASAP2014-011	√			√			

[1] *Improving methods for simulator studies used in research studies*

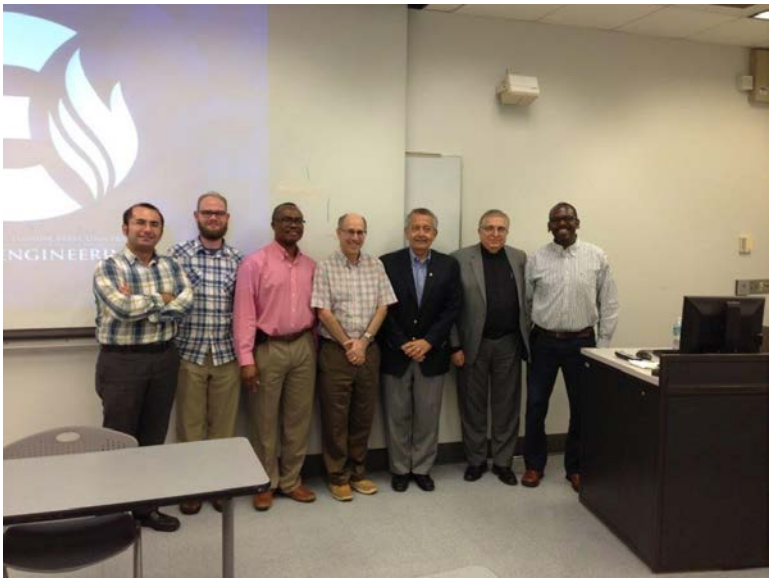
[2] *Data extraction, fusion and evaluation*

[3] *Emergency transportation operations*

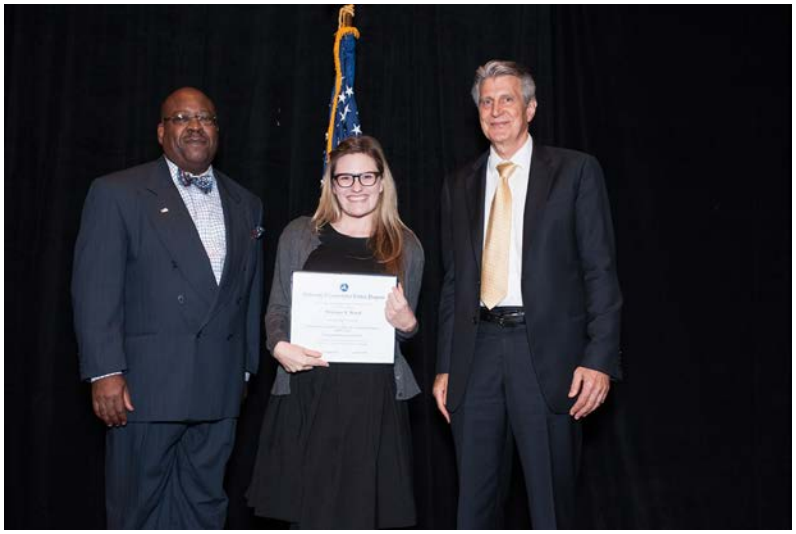
[4] *Innovative transportation strategies that permit individuals to age in place*

1.2.2 Education and outreach

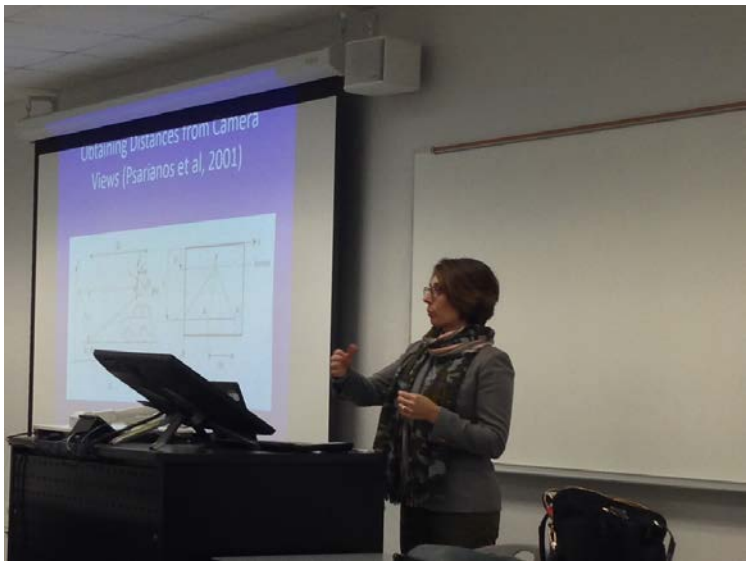
- On November 16, 2015, Dr. Essam Radwan delivered a presentation as part of the ***ASAP Seminar Series.*** His presentation was titled *"Dynamic Flashing Yellow Arrow: A New Left Turn Treatment."* Dr. Radwan is a Professor, College of Engineering and Computer Science, and the Executive Director, Center for Advanced Transportation Systems Simulation, at University of Central Florida, Orlando, Florida.



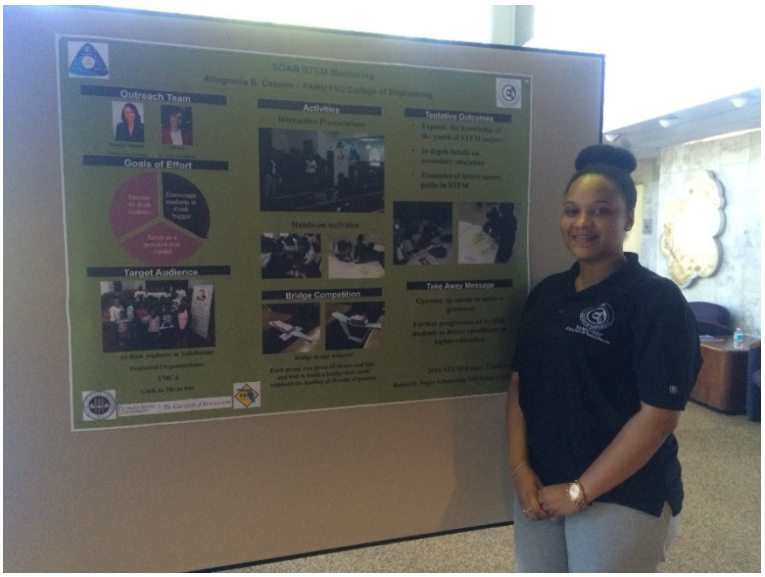
- On January 10, 2016, at the Annual Transportation Research Board (TRB) Meeting in Washington DC, Ms. Brittany S. Wood was honored as an ***Outstanding Student of the Year*** at a University Transportation Center (UTC). Brittany comes from the Center for Accessibility and Safety for an Aging Population (ASAP). She is a PhD candidate at FSU in the Department of Geography. She received her master's degree in Geography from FSU. Since joining the Geography department's PhD program, she has focused extensively on accessibility in the context of transportation systems, specifically areas related to disadvantaged and aging populations, geographic information systems (GIS), and time geography.



- On March 4, 2016, Dr. Lily Elefteriadou delivered a presentation as part of the ***ASAP Seminar Series.*** Her presentation was titled "*Driver Behavior and Characteristics and Their use in Traffic Modeling."* Dr. Elefteriadou is a Professor and Director, University of Florida Transportation Institute (UFTI) Engineering School for Sustainable Infrastructure and the Environment (ESSIE) University of Florida, Gainesville, Florida.



- In the 2015-2016 academic year, ASAP participated in the ***STEM Outreach for At-Risk Youth (SOAR)*** program at Florida State University. The SOAR program facilitates the involvement of undergraduate students in developing and implementing mentoring programs that expose underrepresented youth to science and technology. ASAP's participation in the SOAR program represents an extension of activities developed for the Teens and Transportation workshops conducted at the annual Transportation Day events. Dr. Lisa Spainhour, ASAP Outreach and Education Committee Chair, worked with two underrepresented minority students, who in turn, developed instructional materials and conducted three hands-on mentoring sessions in the local community.



- On Friday, February 26, 2016, a group of students and faculty from the FAMU-FSU College of Engineering, including affiliates of the ASAP Center, ***constructed a wheelchair ramp for a local senior citizen with mobility issues***. The 'Ramp It Up' project was coordinated through the *Ability1st* Center for Independent Living, and construction was directed by Eric Evans, Crew Supervisor for Ability1st. Ability1st is a community-based non-profit organization that provides services to persons with varying disabilities in Leon and surrounding counties in an effort to increase independence, integration, and removal of architectural and attitudinal barriers for all. The FAMU-FSU project provided a 16' single wheelchair ramp and a half-height step system for Jackie Bolden, a 65 year-old with significant mobility needs due to a stroke. The ramp enables Mr. Bolden to safely enter and exit his home for access to various transportation options, including a city bus route immediately adjacent to his property. Because of challenging site conditions, including a dramatic slope angling away from the house, a custom build was required.

- ***Participation in FSU's Young Scholars Program (Summer 2016):*** During summer 2016, Chiles High School student Vivian Zhou and Vika Bommineni, from Trinity Prep in Orlando, worked together with ASAP's Dr. Eren Ozguven's group as part of the Young Scholars Program (YSP) at the Florida State University (FSU). Mehmet Baran Ulak and Ayberk Kocatepe, Ph.D. candidates at FSU, mentored the students for six weeks. The high school students used the Geographic Information Systems (GIS) to create a livability index for the elderly in Florida, considering multiple data sets, including factors such as access to health care, traffic crash figures, population density and transportation logistics. On July 21, they successfully presented a poster to show their results.

  Please refer to the http://www.tallahassee.com/story/news/2016/07/22/young-scholars-program/87447684/?utm_medium=%5B%27twitter%27%5D&utm_source=%5B%27dlvr.it%27%5D , where Vivian Zhou, one of the participants, talks about her experience as follows: "I liked being able to visually examine a problem and solve it, I have never been able to do something like this before."

1.2.3 Collaboration and diversity

There were collaborations with public agencies: Florida Department of Transportation (FDOT)'s Research Office; FDOT's Safe Mobility for Life Program; and FSU's Claude Pepper Institute for Aging. External and internal advisory boards have also been established with memberships from the private industry, government agencies, e.g., federal, state, county, city, etc., and academic institutions.

External Advisory Board

Name	Title/Employer	Industry	Expertise
Karlene Ball	Prof. & Chair, Dept. of Psychology, Univ. of Alabama, Birmingham	Academic	Aging and Driving
Lynn Barr	Mobility Coordinator, Capital Region Transportation Planning Agency	MPO	Transportation Planning
Sara Czaja	Prof. Dept. of Psychiatry, Behavioral Sciences, and Industrial Engineering, Univ. of Miami, Florida	Academic	Aging
Heejo Ham	Senior Transportation Modeler *Stantec*	Industry	Transportation Planning
Chester Henson	FDOT Roadway Design	State	Transportation Design
Gail M. Holley	Safe Mobility for Life Program and Research Manager, FDOT State Traffic Engineering and Operations	State	Transportation Safety
Bill Horrey	The Liberty Mutual Research Institute, Boston, MA	Industry	Transportation Safety/Human Factors
Sylvester A. Kalevela	Acting Dean/Prof., Transportation Engineering, Colorado State Univ.	Academic	Transportation
Ivan Maldonado	Florida Commission for the Transportation Disadvantaged, Tallahassee, FL	State	Transportation
Trenda McPherson	FDOT Pedestrian Safety	State	Transportation Safety
Eric Sawyer	Retired City Traffic Engineer, Tallahassee	City	Transportation Traffic
Victor B. Wiley	FDOT Transit Safety	State	Transportation Safety

Internal Advisory Board

Name	Title/Employer	Industry	Expertise
Bruce Harvey	Assoc. Prof., FAMU-FSU College of Engineering	Academic	Electrical & Computer Engineering
Michelle Rambo-Roddenberry	Assoc. Prof., FAMU-FSU College of Engineering	Academic	Civil & Environmental Engineering
John Sobanjo	Prof., FAMU-FSU College of Engineering	Academic	Civil & Environmental Engineering
Neil Charness	Prof., FSU Dept. of Psychology	Academic	Psychology
Mark Horner	Prof., FSU Dept. of Geography	Academic	Geography

2. Products

Publications, conference papers, and presentations

The following list shows for the reporting period, the publications, conference papers, presentations, etc., resulting from the research funding at the Center.

The following papers have been published or in press for journal publication:

[1] Horner, M. W., Ozguven, E. E., Marcelin, J. M., and Kocatepe, A. (2016). "Placing Special Needs Hurricane Shelters and the Aging Population: Development of a Methodology and a Case-study Application," Accepted for Publication in *Disasters*.

[2] Kocatepe, A., Ozguven, E. E., Vanli, A., and Moses, R. (2016). "Analysis of Speed Patterns on Inter-urban Parallel Highways: A Case Study in the Southeast Florida", Accepted for Publication in the *Transportation Research Procedia*.

[3] Marcelin, J. M., Horner, M., Ozguven, E. E., & Kocatepe, A. (2016). How does accessibility to post-disaster relief compare between the aging and the general population? A spatial network optimization analysis of hurricane relief facility locations. *International Journal of Disaster Risk Reduction*, 15, 61-72.

[4] Omidvar, A., Ozguven, E. E., Vanli, A., & Moses, R. (2016). Understanding the factors affecting the frequency and severity of aging population-involved crashes in Florida. *ATS - Advances in Transportation Studies, an International Journal*, 2016-2, 113-130.

[5] Ozel, H., Ozguven, E. E., Kocatepe, A., & Horner, M. W. (in press). An Aging Population-focused Accessibility Assessment of Multi-modal Facilities in Florida. *Transportation Research Record*, 25 pages.

[6] Ozguven, E. E., Horner, M., Kocatepe, A., Marcelin, J. M., Abdelrazig, Y., Sando, T., & Moses, R. (2016). Metadata-based Needs Assessment for Emergency Transportation Operations with a Focus on an Aging Population: A Case Study in Florida. *Transport Review*s, 36(3), 383-412.

[7] Ulak, M. B., Ozguven, E. E., and Spainhour, L., "Age-based Stratification of Drivers to Evaluate the Effects of Age on Crash Involvement," Accepted for Publication in the *Transportation Research Procedia*, 2016.

[8] Vemulapalli, S., Ulak, M. B., Ozguven, E. E., Sando, T., Horner, M. W., Abdelrazig, Y., & Moses, R. (2016). GIS-based Spatial and Temporal Analysis of Aging-Involved Accidents: A Case Study of Three Counties in Florida, Accepted for Publication in *Applied Spatial Analysis and Policy*, 2016, http://dx.doi.org/10.1007/s12061-016-9192-4.

[9] Wood, J., Brown, J., Bond, M., & Suguri, V. (2016). Older Adult Transportation in Rural and Small Communities in the United States: Results of an Agency Survey. *Journal of Public Transportation*, 19 (2), 154-167. doi:10.5038/2375-0901.19.2

[10] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y. (2016). Aging Populations and Transit Oriented Development: Socioeconomic, Demographic, and Neighborhood Trends from 2000 and 2010. (In press in Transportation Research Record).

[11] Wood, J., Brown, J., Bond, M., & Suguri, V. (2016). Older Adult Transportation in Rural and Small Communities in the United States: Results of an Agency Survey. Journal of Public Transportation. Issue 19 (2), 154-168. doi:10.5038/2375-0901.19.2

[12] Yazici, M. A., Kocatepe, A., and Ozguven, E. E. (2016). "Breakdown of Weather, Intersection and Recurrent Congestion Impacts on Urban Delay in New York City," Accepted for Publication in the *Transportation Research Procedia*.

The following papers have been submitted and are under review for journal publication:

[1] Abdelragiz, Y., Doczy, R., Boot, W., Ozguven, E. E., & Moses, R., Elderly Drivers Left-turn Crash Risk Analysis using 3-D Visualization and Human Factors Simulation (under review in *Traffic Injury Prevention*).

[2] Dulebenets, M. A., Ozguven, E. E., Vessel Scheduling in Liner Shipping: Modeling Transport on Perishable Asset, (under review in *International Journal of Production Economics*).

[3] Fung, K., Jung, S. & Sobanjo, J. Main Effects of Driving Postures Changes in Frontal Collisions Due to Aging. (Under review in *International Journal of Vehicle Safety*).

[4] Kitali, A. E., Sando, T., Ozguven, E. E., & Moses, R., Evaluation of Injury Severity Risk for Aging Pedestrians (under review in *Journal of Safety Research*).

[5] Ulak, M. B., Ozguven, E. E., & Spainhour, L. Spatial Investigation of Crashes Involving Aging Drivers: A GIS-based Case Study in the Northwest Florida (under review in *Journal of Transport Geography*).

[6] Valdez-Torres, Y., Duncan, M., Horner, M. & Wood, B., Promoting Transit Oriented Development for Older Adults: A Survey of Transit Agencies and Local Governments in the US (under review in *Transportation Research Record*).

[7] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y. Do Transit Oriented Development Provide Greater Local Neighborhood Access to Activities for Older Adults? (under review in *Transportation Research Record*).

[8] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y., Assessing Transit Oriented Development for Older Adults: Geographical, Modal, and Built Environmental Factors (under review in *Journal of Transport & Health*).

The following papers are under preparation for journal publication:

[1] Alisan, O., Tuydes-Yaman, H., Kocatepe, A., Ozguven, E. E., and Ozel, H., Benefits of Managing Special Needs Shelters (SpNS) Capacities with Utilizing Cross-County Collaboration: A Case Study Application in Florida.

[2] Fung, K., Jung, S. & Sobanjo, J., Aging modification of THUMS for full vehicle frontal crash simulation.

[3] Kocatepe, A., Ozkul, S., Ozguven, E. E., Sobanjo, J., Freight Transportation-focused Accessibility Analysis of Intermodal Facilities: A Case Study in the Tampa Bay Region.

[4] Kocatepe, A., Lores, J., Ozguven, E. E., and Yazici, A. The Reach and Influence of DOT Twitter Accounts: A Case Study in Florida.

[5] Omidvar, A., Vanli, A., Ozguven, E. E., Ghodsi, R., Moses, R., and Sobanjo, J., The Statistical Analysis and Prediction of Interstate Crash Severities: Crisp and Fuzzy Classification Approaches.

[6] Xu, R., Fung, K., Jung, S. & Sobanjo, J., Factorial analysis of driving posture changes due to aging in frontal crash using simplified dummy.

The following papers were presented at conferences, meetings, workshops, etc.:

[1] Abdelrazig, Y., Doczy, R., Boot, W., Ozguven, E. E., and Moses, R. (2016). "Spatial Context Roadway Safety Analysis for the Aging Population: A Hybrid 3-Dimensional Visualization and Human Factors Simulation Approach", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.

[2] Bond, M., Brown, J., Wood, J., & Suguri, V. (2016 accepted). Alternative Public Transportation Options for Older Adults in Rural and Small Communities. Presentation to be given at 56th Annual Conference of the Association of Collegiate Schools of Planning, Association of Collegiate Schools of Planning, Portland, Oregon.
[3] Bond, M., Brown, J., Suguri, V., & Wood, J. (2015). Transportation Innovations for Older Adults in Areas Lacking Fixed-Route Public Transit Service. Presentation at 68th Annual Scientific Meeting, Gerontological Society of America, Orlando, Florida, November.
[4] Bond, M., Brown, J., Wood, J., & Suguri, V. (2015). Alternative Public Transportation Options for Older Adults in Rural and Small Communities. Presentation to be given at 56th Annual Conference of the Association of Collegiate Schools of Planning, Association of Collegiate Schools of Planning, Portland, Oregon.
[5] Dyer, B., Callegari, N., Ulak, M. B., Ozel, H., and Ozguven, E. E. (2016). "Evaluating Transportation Accessibility to Healthcare among Cancer Populations in Florida", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[6] Duncan, M., Horner, M., Valdez-Torres, Y., Stansbury, C., & Wood, B. (2016) Does older adults' mobility differ by the size of the metropolitan area in which they live? An analysis of NHTS data. (Presented at TRB 95th annual meeting).
[7] Fung, K., Jung, S. & Sobanjo, J. (2016). Main Effects of Driving Postures Changes in Frontal Collisions Due to Aging. International Conference on Transport and Health (ICTH), San Jose, CA, June.
[8] Gumber, C., Barrett, A., Ozguven, E. E., Moses, R., Vanli, A., Kocatepe, A., Ozel, H., Omidvar, A., and Sando, T. (2016). "Explaining Gender Differences in Self-regulated Driving: What Roles Do Health Limitations and Transportation Alternatives Play?", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[9] Kidando, E. R. Moses, and E. Ozguven. (2016). "*Evaluating the Impact of the Travel Time Reliability on Elderly Driver Crash Severity."* Presented at the Meeting the Challenges of Safe Transportation in an Aging Society Symposium, September 14-15, Ann Arbor, Michigan.
[10] Kitali, A., Machumu, K., and Sando, T. (2016). Using Naturalistic Driving Data to Analyze Effects of Driver Age on Vehicle Deceleration and Its Impacts on Safety and Travel Time. Presentation at the Fifth International Symposium on Naturalistic Driving Study Research, Blacksburg, VA, August.
[11] Kitali, A., and Sando, T., (2016). The Effect of Age on Pedestrian Injury Severity. Presentation at the 2016 UTC Conference for the Southeastern Region, Knoxville, TN, March.
[12] Kocatepe, A., Ozguven, E. E., Ozel, H., Horner, M., and Moses, R., (2016). "Transportation Accessibility Assessment of Critical Emergency Facilities: Aging Population-focused Case Studies in Florida", Proceedings of the 2nd International Conference on Human Aspects of IT for the Aged Population Held as Part of HCI International 2016, Human Aspects of the IT for the Aged Population, Healthy and Active Aging, Toronto, Ontario, Canada, July 17-22.
[13] Kocatepe, A., Ozguven, E. E., Ozel, H., and Horner, M. (2016). Aging-focused Transportation Accessibility Assessment of Emergency Shelters: A DTA-based Application in Florida. Presentation at 2016 National Evacuation Conference, The University of New Orleans, New Orleans, LA, March.
[14] Kocatepe, A., Ozguven, E. E., Ozel, H., and Horner, M. (2016). Aging-focused Transportation Accessibility Assessment of Emergency Shelters: A DTA-based Application in Florida. Presentation at 2016 National Evacuation Conference, The University of New Orleans, New Orleans, LA, March.

[15] Kocatepe, A., Lores, J., Ozguven, E. E., and Yazici, M. A. (2016). "Measuring the Reach and Influence of DOT Twitter Accounts: A Case Study for Florida and New York", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[16] Lwambagaza, L., Machumu, K., and Sando, T., (2016). Modeling Older Drivers Behavior on Merging Ramps. Presentation at the 2016 UTC Conference for the Southeastern Region, Knoxville, TN, March.
[17] Marcelin, J. M., Horner, M., Ozguven, E. E., and Kocatepe, A. (2016). "How Do Disaster Relief Needs Compare between Aging and the General Population? A Spatial Network Optimization Analysis of Hurricane Relief Facility Locations", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[18] Moses, R., Kidando, E., Abdelrazig, Y., and Ozguven, E. E. (2016). Travel Time Reliability on Elderly Drivers Crash Severity, Accepted for Presentation at the 18th International Conference on Civil, Construction and Safety Engineering, Singapore, SG, November 21-22.
[19] Omidvar, A., Vanli, A., Ozguven, E. E., Moses, R., Barrett, A., Kocatepe, A., Ozel, H., Gumber, C., and Sando, T. (2016). "Effects of Traffic Patterns on the Frequency of Aging Driver-involved Highway Crashes: A Case Study on the Interstate-95 in Florida", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[20] Omidvar, A., Ozguven, E. E., Vanli, A., and Moses, R., (2015). "Understanding the Factors Affecting Frequency and Severity of Aging-involved Accidents in Florida", Presented at the 2015 Road Safety & Simulation International Conference, Southeastern Transportation Center, Orlando, Florida, October 2015.
[21] Ozguven, E. E., Vanli, A., Barrett, A., Moses, R., Gumber, C., Kocatepe, A., Ozel, H., Omidvar, A., and Sando, T. (2015). "Travel Time and Roadway Capacity Reliability for an Aging Population: The Development of a Model Integrating Roadway Traffic with Aging Adults' Driving Behavior", Presented at the Gerontological Society of America's 68th Annual Scientific Meeting, Orlando, FL, USA, November, 18-22.
[22] Ozguven, E. E. (2016). Assessing the Emergency Transportation-focused Impacts of Aging Populations' Recovery Needs, Mobility and Accessibility for Post-Disaster Recovery: Social and Economic Resilience for Disadvantaged and Dislocated Populations. Workshop delivered at Transportation Research Board 2016 Annual Meeting, Washington, D.C., USA, January 10-14.
[23] Ozel, H., Ozguven, E. E., Kocatepe, A., and Horner, M. (2016). "An Aging Population-focused Accessibility Assessment of Multi-modal Facilities in Florida", Presented at the Transportation Research Board's 95th Annual Meeting, Washington, DC, USA, January 10-14.
[24] Ulak, M. B., Ozguven, E. E., and Kocatepe, A., (2015). "GIS-based Identification and Evaluation of Significant Factors for Aging-Involved Crashes", Presented at the 2015 Road Safety & Simulation International Conference, Southeastern Transportation Center, Orlando, Florida, October 2015.
[25] Valdez-Torres, Y, Wood, B., Horner, M., Duncan, M. & (2015). Aging Populations and Transit Oriented Development: Socioeconomic, Demographic, and Neighborhood Trends from 2000 and 2010. (Presented at ACSP 55th annual conference).
[26] Wood, J., Brown, J., Bond, M., & Suguri, V. (2015). Older Adult Transportation in Rural and Small Communities in the United States: The Results of an Agency Survey. Presentation at 55th Annual Conference of the Association of Collegiate Schools of Planning, Association of Collegiate Schools of Planning, Houston, Texas, October.
[27] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y (2016). Aging Populations and Transit Oriented Development: Socioeconomic, Demographic, and Neighborhood Trends from 2000 and 2010. (Presented at TRB 95th annual meeting).

The following papers have been submitted and are under review for conferences, meetings, workshops, etc.:

[1] Abdelrazig, Y., Doczy, R., Mafi, S., and Ozguven, E. E., Safety Analysis Contextual and Human Factors Simulation Approach to Analyze Older Drivers' Performance in Intersections' Left-turn Scenarios, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[2] Alisan, O., Tuydes-Yaman, H., Kocatepe, A., Ozguven, E. E., and Ozel, H., Benefits of Managing Special Needs Shelters (SpNS) Capacities with Utilizing Cross-County Collaboration: A Case Study Application in Florida, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[3] Cordova, J., Kocatepe, A., Arghandeh, R., Ozguven, E. E., Ohlsen, M., Powell, J., and Goad, R., Integrated Transportation and Electricity Monitoring and Management (ITEM2) in the City of Tallahassee: a Case Study for a Medium Size City, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[4] Douglas, R., Kocatepe, A., Barrett, A., Ozguven, E. E., and Gumber, C., Pet Evacuation Preparedness: An Examination of Older Adults' Needs for and Proximity to Pet-friendly Shelters in Florida, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[5] Dulebenets, M. A., Ozguven, E. E., Vessel Scheduling Problem in a Liner Shipping Route with Perishable Products, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[6] Kidando, E., Moses, R., Abdelrazig, Y., and Ozguven, E. E., Safety Analysis Considering the Impact of Travel Time Reliability on Elderly Drivers, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[7] Kidando, E., Moses, R., Ozguven, E. E., and Sando, T., Truncated Bayesian Non-parametric Modeling of Multistate Travel Time Distribution, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[8] Kitali, A., Kidando, E., Sando, T., Moses, R., and Ozguven, E. E., Evaluating Pedestrian Crash Severity using Bayesian Complementary Log-log Model for Improved Reduction Accuracy, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[9] Kitali, A, Kidando, E., Sando, T., Castro, A., Machumu, K., Kobelo, D., and Mwakalonge, J. Developing crash modification factors to quantify impacts of pedestrian countdown signals to drivers. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[10] Kitali, A, Kidando, E., Sando, T., Castro, A., Kobelo, D., and Mwakalonge, J. Impact of pedestrian countdown signals on vehicle approach speed for drivers of different age at signalized intersections. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[11] Kitali, A, Kidando, E., Sando, T., Moses, R., and Ozguven, E. Evaluating pedestrian crash severity using Bayesian complementary log-log model for improved prediction accuracy. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[12] Kocatepe, A., Ulak, M. B., Ozguven, E. E., Horner, M., and Arghandeh, R., Socioeconomic Characteristics and Crash Proneness: A Case Study in Florida using Two-step Floating

Catchment Area Method, Submitted to Transportation Research Board's 96th Annual Meeting, August 2016.
[13] Kocatepe, A., Ozkul, S., Ozguven, E. E., Sobanjo, S., Freight Transportation-focused Accessibility Analysis of Intermodal Facilities: A Case Study in the Tampa Bay Region, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[14] Kocatepe, A., Ulak, M. B., and Ozguven, E. E., Spatial and Statistical Analysis of Crash Proneness with a Focus on Socioeconomics: A Case Study for Tampa Bay Region, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[15] Lwambagaza, L., Sando, T., Mtoi, E., Ozguven, E. E., and Sobanjo, J., Age-based Simulation of Merging Behavior at Freeway Merging Ramps, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[16] Lwambagaza, L., Sando, T., Mtoi, E., Ozguven, E. E., Moses, R, and Sobanjo, J., Operational Analysis of Older Drivers' Behavior at On-Ramp Merging Areas: Characterizing Gaps, Merging Location, and Ramp Approach Speed, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[17] Lwambagaza, L., Sando, T., Mtoi, E., Ozguven, E., and Sobanjo, J. Age-Based Simulation of Merging Behavior at Freeway Merging Ramps. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[18] Lwambagaza, L., Sando, T., Mtoi, E., Ozguven, E., Moses, R., and Sobanjo, J. Operational Analysis of Older Drivers' Behavior at On-Ramp Merging Areas: Characterizing Gaps, Merging Location, and Ramp Approach Speed. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[19] Omidvar, A., Vanli, A., Ozguven, E. E., Ghodsi, R., Moses, R., and Sobanjo, J., The Statistical Analysis and Prediction of Interstate Crash Severities: Crisp and Fuzzy Classification Approaches, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[20] Ulak, M. B., Ozguven, E. E., Vanli, A., Horner, M., Ozkul, S., and Spainhour, L., Comparison and Performance Evaluation of Crash Hotspot Detection and Clustering Methods, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[21] Ulak, M. B., Ozguven, E. E., Moses, R., Sando, T., Boot, W., Abdelragiz, Y., and Sobanjo, J., Aging-driver Focused Assessment of Traffic Performance Measures and Safety with a Micro-simulation Based Analysis in Florida, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[22] Ulak, M. B., Kocatepe, A., Ozguven, E. E., Horner, M., and Spainhour, L., A GIS-based Spatial and Statistical Analysis of Severe Crash Hotspot Accessibility to Hospitals, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.
[23] Valdez-Torres, Y., Duncan, M., Horner, M. & Wood, B., Promoting Transit Oriented Development for Older Adults: A Survey of Transit Agencies and Local Governments in the US (submitted for presentation at the TRB 96th annual meeting & ACSP 56th annual conference).
[24] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y. Assessing Transit Oriented Development for Older Adults: Geographical, Modal, and Built Environmental Factors (submitted for presentation at the TRB 96th annual meeting & ACSP 56th annual conference).
[25] Wood, B., Horner, M., Duncan, M. & Valdez-Torres, Y. Do Transit Oriented Development Provide Greater Local Neighborhood Access to Activities for Older Adults. Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

[26] Yazici, A., Kocatepe, A., and Ozguven, E. E., Urban Travel Time Variability in New York City: A Spatio-Temporal Analysis within Congestion Pricing Context, Submitted to Transportation Research Board's 96th Annual Meeting and Journal, August 2016.

Website(s) or other Internet site(s)

Hosted on a computer server at FSU, a website has been developed and maintained to provide information about the Center (http://www.utc.fsu.edu/). A Facebook page is being maintained (https://www.facebook.com/The-Center-for-Accessibility-and-Safety-for-an-Aging-Population-1444922912427725/). A twitter account is also maintained at (http://twitter.com/UTC_FSU).

Technologies or techniques

Nothing to report.

Inventions, patent applications, and/or licenses

Nothing to report.

Other products

Nothing to report.

3. Participants & collaborating organizations

- Our UTC is a member of the ***Council of University Transportation Centers (CUTC)***.
- There are ***collaborations with public agencies:*** Florida Department of Transportation (FDOT)'s Research Office; FDOT's Safe Mobility for Life Program; and FSU's Claude Pepper Institute for Aging. Also, through their membership in the external and internal advisory boards, the agency or organization (employer) of the various members were involved in the Center's activities. Some of our partners reviewed research proposals and draft final reports from the Center, and have also served as speakers at the Center's seminars and conferences.

- A research project was funded by the ***National Science Foundation,*** *involving one of ASAP researchers, Dr. Eren Ozguven, as a co-Principal Investigator:*
  Arghandeh, R. (PI), Ozguven, E. E. (Co-PI), Hou, J., UHDNetCity: User-Centered Heterogeneous Data Fusion for Multi-Networked City Mobility, Award Amount: $233,123.00, Award Period: 09/01/2016-02/28/2018.

- Support research project funded by the ***Florida Department of Transportation (Research Office)*** and used for cost sharing at our Center is listed as follows.
  - Walter Boot, PI: Driving Simulator Studies of the Effectiveness of Countermeasures to Prevent Wrong Way Crashes, BDV30 977-10 (since June 2014).
  - Michael Duncan, PI: Enhance Mobility for Aging Population Using Automated Vehicles, BDV30 977-11 (since June 2014).

❖ For the reporting period, the following Center's affiliated faculty and graduate students have the listed ***award, services, and are on the listed national, regional and local committees***:

Jeffrey Brown: *Charley V. Wootan Award for Best Paper in Transportation Policy, presented by Transportation Research Board, 2016. Presented for Morris, E., Brown, J. R., & Taylor, B. D. (2016). Negotiating a Financial Package for Freeways: How California's Collier-Burns Highway Act Helped Pave the Way for the Era of the American Interstate Highway. Transportation Research Record 2552, 16-22. doi:10.3141/2552-03.*
Neil Charness: *The Franklin V. Taylor Award for Outstanding Contributions in the Field of Applied Experimental / Engineering Psychology, from Division 21 (Applied Experimental and Engineering Psychology) of the American Psychological Association, (2016). M. Powell Lawton Distinguished Contribution Award for Applied Gerontology, from Division 20 (Adult Development and Aging) of the American Psychological Association, (2016).*
Walter Boot: *Elected Fellow, American Psychological Association (2016).*
John Sobanjo: *Elected Fellow, American Society of Civil Engineers (ASCE) (2016).*
Thobias Sando: *Topic Expert in the Fatigue Committee of the Florida Transit Safety Network (2016).*
Brittany Wood: *University Transportation Center Student of the Year (2016).*

Walter Boot: *Associate Editor, Journal of Experimental Psychology: Applied, 2014–present.*
Jeffrey Brown: *Member, Transportation History Committee, Transportation Research Board (TRB); Member, Light Rail Transit Committees, Transportation Research Board (TRB).*
Michael Duncan: *Member of TRB standing committee AP045 (Intermodal Transfer Facilities)*
Mark Horner: *Chair, ADD20 Social and Economic Factors of Transportation, Standing Committee, Transportation Research Board (TRB); Member, ABJ60, Geographic Information Sciences and Applications, Standing Committee, Transportation Research Board (TRB). U.S. Co-Editor, Transportation (Springer).*
Eren Ozguven: *Member, Time, Speed and Reliability (TTSR) Subcommittee, Transportation Research Board (TRB).*
John Sobanjo: *Member, Editorial Board, ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, American Society of Civil Engineers (ASCE) / American Society of Mechanical Engineers (ASME), 2014 – Present; Associate Editor, ASCE Journal of Bridge Engineering, American Society of Civil Engineers (ASCE), 2014 - Present.*

4. Impact

There is not much to report at this time on the impact.

5. Changes/Problems

Nothing to report.

6. Special reporting requirements

Nothing to report.