



MARGARET J. FOWLER
ASSOCIATE TRANSPORTATION RESEARCHER

YEARS OF QUALIFYING EXPERIENCE: 4



Education

- M.S., Industrial and Systems Engineering, Texas A&M University, 2021
- B.S., Industrial Engineering, Texas A&M University, 2018,

Background and Qualifications

Margaret Fowler is a dynamic, creative, and curious transportation professional who has worked at the Texas A&M Transportation Institute since the Spring of 2019. Her diverse experience centers around facilitating focus group sessions, one-on-one interviews, developing surveys and other methods to obtain user feedback on advanced technology, including connected and automated applications in vehicles and motorcycles.

A focal point of her research has focused on operator behavior and trust in automation and the impact of these relationships on vehicle safety and design. Her background in qualitative research methods has also led her to advise the creation of stakeholder engagement and planning activities in other areas of transportation research such as freight mobility and incident response. Additionally, she has experience in experimental design and has developed skills in other quantitative research methods. Margaret is an adaptive professional who embraces teamwork and has held leadership roles by managing several teams for data collection purposes and helping oversee testing operations. Other areas of her research interest and expertise include usability testing.

Recent Work Experience

Dates	Position(s)	Organization
2021 - Present	Associate Transportation Researcher	Texas A&M Transportation Institute
2019 - 2020	Graduate Research Assistant	Texas A&M Transportation Institute
2017 - 2017	Manufacturing Engineering Intern	Textron Specialized Vehicles

Project Level Experience

- **Freight Planning IAC: Freight Traffic Management Needs and Communication with Freight Transportation Providers.** Principle Team Member - Margaret has been essential in outreach activities aimed at identifying effective traffic management strategies for managing truck traffic operations across several DOTs. She contributed to designing an interview format that yielded informative discussions with stakeholders. Findings from these interviews have been instrumental in developing a catalog of strategies that summarize various traffic management methods to mitigate the impact of congestion and increase freight safety. This project is currently in progress, furthering assessing district freight requirements within various Texas districts, and Margaret is actively involved in creating stakeholder activities.
- **Impacts of Connected, Automated Vehicle Technologies on Traffic Incident Management Response,** National Cooperative Highway Research Program. Principle Team Member – Project outcomes were to assist in developing guidance materials and strategies for emergency response personnel and autonomous vehicle manufacturers to close the gap between current practices and training and technology. Margaret led the efforts to develop eight intelligence reports detailing the potential impacts of both connected and automated vehicles on the incident response timeline. Each report described potential benefits, opportunities, and challenges in introducing connected and automated vehicle applications to incident and emergency response. Additionally, these reports were the foundation for developing outreach to first responders pertaining to these future technologies and their implications.
- **Addressing the Motorcyclist Advisory Council Recommendations, Federal Highway Administration.** Principle Team Member – As a principal team member, Margaret played a critical part in understanding the current state of practice of ITS applications in motorcycles. She researched all aspects of Advanced Rider Assistance Systems (ARAS) and their implications for future motorcycle participation in a connected

vehicle environment. She led the literature review and development of the final report summarizing the group's findings. The project also conducted two focus group discussions with riders exploring their thoughts and attitudes toward connected and automated motorcycle applications. Margaret developed the focus group design and questions resulting in a better understanding of these users and the design and performance challenges in these assistive technologies.

- **Georgia DOT I-75 Commercial Vehicle Lanes, Georgia Department of Transportation. Team Member** – Margaret investigated the current technology readiness of various aspects of commercial vehicle operations, such as connected vehicles and platooning, and infrastructure needs and derived how those activities could be a part of GDOT's planned 40-mile commercial vehicle only facility on I-75 starting in 2028.
- **Campus Transportation Technology Initiative, Texas A&M Transportation Institute. Operations Supervisor** – Margaret served as the operations manager overseeing all aspects of daily staff operations for a 3-month trial of an 11-person automated shuttle operating in mixed traffic on a fixed route on the College Station campus. The trial, which was the first of its kind in Texas, drove over 600 miles with no incidents and has helped inform TAMU Administration on both the challenges and opportunities for integrating next generation vehicles and technologies into the campus environment.
- **Master's Thesis: *The Development of Operator Trust in Automation*, Texas A&M University, Industrial and Systems Engineering Department.** A 12-week pilot study demonstrating an autonomous shuttle was performed on Texas A&M's campus. Margaret assisted the TTI team in helping coordinate between all project partners to ensure a safe transition as the autonomous shuttle was introduced to campus. Margaret also led data collection to assess operator trust in the vehicle through surveys, one-on-one interviews, and focus groups. Results from these research efforts primarily focused on the vehicle's design and performance and the impact on user perception and trust.
- **Traffic Optimization for Signalized Corridors (TOSCo), Crash Avoidance Metrics Partners, LLC – Team Member**
- **Assessing Driver Distraction While Using Navigation Apps: Google Maps vs Waze, Human Performance Modeling Course (ISEN 689) – Project Member**
- **Usability Assessment of Classroom Smartboard: ThinkHub System, Cognitive Systems Engineering Course (ISEN 631) – Project Member**

Awards and Skills

- 2020 TTI Outstanding Masters Student of Year, TTI Herbert Richardson Team Award
- Skills: Writing Usability Test Protocols, Facilitation & Analysis of Usability Tests, Qualitative Research Methods, Statistical Analysis Methods & Visualization

Publications

- Fowler, M. J. (2021). Assessing the Development of Operator Trust in Automation (Master Thesis).
- Fowler, M., Sasangohar, F., Brydia, R.E. (2020). Assessing the Development of Operator Trust in Automation: A Longitudinal Study of an Autonomous Campus Shuttle. Accepted for publication in Proceedings of the Human Factors and Ergonomics Society Annual Meeting.