

UTC Project Information	
Project Title	Quantifying the benefits and harms of connected and automated vehicle technologies to public health and equity
University	Texas A&M Transportation Institute
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Funding Source(s) and Amounts Provided (by each agency or organization)	Robert Wood Johnson Foundation: \$250,008 Safety through Disruption (Safe-D): \$15,812
Total Project Cost	\$265,820
Agency ID or Contract Number	Robert Wood Johnson Foundation, Contract Number 76489 Safe-D UTC, Contract Number TTI-STUDENT-06
Start and End Dates	June 15, 2019 to June 14, 2021
Brief Description of Research Project	Automated vehicle technologies (AV) have the potential to become one of the most highly disruptive technological applications of our century. AV technologies represent a switch in driving responsibility from human to machine. They encompass a diverse range of automated technologies, from relatively simple driver assistance systems to fully automated, driverless vehicles. Because 94% of crashes are attributed to human error, the safety benefits that AVs could provide are compelling—although incontrovertible empirical proof that AVs deliver safety benefits has yet to be produced. Other anticipated benefits of AVs are related to the potential mitigation of congestion, air pollution, and greenhouse gases (GHG), and mobility enhancement for underserved populations, which could impact public health significantly. Because they represent a disruptive innovation, AVs have attracted attention from various areas of research such as driver behavior, land use, roadway design, transport policy, etc. However, there has been less focus on the public health impacts of AVs. The implications for AVs on health are very complex, and modeling them requires an interdisciplinary effort. This study is an attempt to quantify the AVs’ impacts on public health and health equity through the changes in transportation. To this end, we focused on two risk factors, motor vehicle crashes, and air pollution.

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>The final products of this project will be a technical memorandum and an interactive data-visualization tool that can be used to examine different CAV adoption scenarios and the associated health impacts in the studied area, where health is defined as the number of fatalities and injuries from traffic crashes, and childhood asthma and morbidity from air pollution. However, three update reports will be sent to the sponsor before the final report, including literature review, data collection and analysis, and modeling and results. Thus far, we prepared the report of Task 2 (literature review) of the project, which is a review of the literature about the methodology used for quantifying CAVs health and equity impacts. The report is under review by the sponsor.</p> <p>Two major stakeholders of this project are the Robert Wood Johnson Foundation (RWJF) (the sponsor of the project) and the City of Dallas and North Central Texas Council of Governments (NCTCOG). While the final product of this research is owned by RWJF, we collaborate with NCTCOG to implement the outcomes of this research to the Dallas-Fort Worth metro area.</p>
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	<p>The principal goal of this project is to perform a quantitative assessment of CAVs' impacts on health outcomes and health equity, by defining a conceptual model that accounts for the complexities and interactions between CAVs and public health. The results of this project are expected to provide a framework that can facilitate the replication of the research for evidence-building, and assist policymakers and practitioners in transportation and public health agencies in developing evidence-based policymaking decisions to shape CAV adoption patterns in ways that benefit health outcomes and health equity. To accomplish these goals, the research team will collaborate with the City of Dallas and North Central Texas Council of Governments (NCTCOG). The final products of this project will be a technical memorandum and an interactive data-visualization tool.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project website 	<p>https://www.vtti.vt.edu/utc/safe-d/index.php/projects/quantifying-the-benefits-and-harms-of-connected-and-automated-vehicle-technologies-to-public-health-and-equity/</p>