

<b>Research Project Name:</b> Examining the Impact of Vehicle Automation Levels on Road Safety in Rural Areas
<b>Recipient/Grant (Contract) Number:</b> Florida A&M University; Cleveland State University
<b>Center Name:</b> Rural Safe, Efficient, and Advanced Transportation (R-SEAT) Center
<b>Research Priority:</b> Improving Mobility of People and Goods
<b>Principal Investigator(s):</b> Emmanuel Kidando, Josiah Owusu-Danquah
<b>Project Partners:</b> -
<b>Research Project Funding:</b> \$100,000 (Federal request); \$50,518 (Non-Federal cost share)
<b>Project Start and End Date:</b> 6/1/2023 to 12/31/2024
<p><b>Project Description:</b></p> <p>Motor vehicle crashes are a prominent and distressing cause of fatalities in the United States and globally. Addressing this issue, the integration of partially automated vehicle technologies, notably Advanced Driver Assistance Systems (ADAS), emerges as a promising avenue for enhancing safety on highways. These systems become even more critical to older adult drivers, who face increased risks of fatality and crashes due to age-related declines in physical, health, and cognitive abilities. ADAS has the potential to decrease the sensory cognitive load of the driving task, and many automated safety features can decrease crash severity. The ADAS vary widely in complexity and scope, which can mainly be classified into three major groups: collision warning, collision intervention, and driving control assistance. Examples of collision warning technologies that are common in vehicles include forward collision, lane departure, and blind spot warnings. For collision intervention, automated emergency braking, blind spot intervention, and rear automatic braking are examples of available technologies. On the other hand, driving control assistance includes adaptive cruise control and lane-keeping or centering assistance. Several researchers have investigated these in-vehicle technologies to learn older drivers' perceptions of safety and interaction with the ADAS. However, little is known about the role of these technologies and their impact on crash injuries. It will be beneficial to the community to understand the role of ADAS technologies in the safe mobility of drivers in rural areas.</p>
<b>US DOT Priorities:</b> This project aligns with the USDOT the strategic areas of safety.
<p><b>Outputs:</b></p> <ul style="list-style-type: none"> <li>• A draft project report that provides a summary of a gap analysis, metrics and methods to impact vehicle automation in rural areas.</li> <li>• Paper # 1 “Investigating the Role of Advanced Driver Assistance Systems (ADAS) in Reducing Sideswipe Collisions in Rural Ohio” – Ngereza A., Kutela B, Ibrahim I, Kalambay P, Masanja N, Kidando E, and Kitali A.</li> <li>• Paper # 2 “Influence of Advanced Driving Assistance Systems (ADAS) on Rear-end Crash Severity in Rural Ohio” – Ngereza A, Kutela B, Kalambay P, Balyagati P, Kidando E, and Kitali A.</li> </ul>
<p><b>Outcomes/Impacts:</b></p> <ul style="list-style-type: none"> <li>• The findings of the project were presented in the Transportation Research Annual Meeting</li> <li>• The manuscripts are under review in reputable journals</li> </ul>
<b>Final Research Report:</b> N/A