VIRGINIA TECH TRANSPORTATION INSTITUTE

Division of Vehicle, Driver, & System Safety

Virginia Tech Transportation Institute

About Us

At the Division of Vehicle, Driver & System Safety, researchers apply innovative scientific methods to solve the complex transportation challenges of today and tomorrow, focusing on:
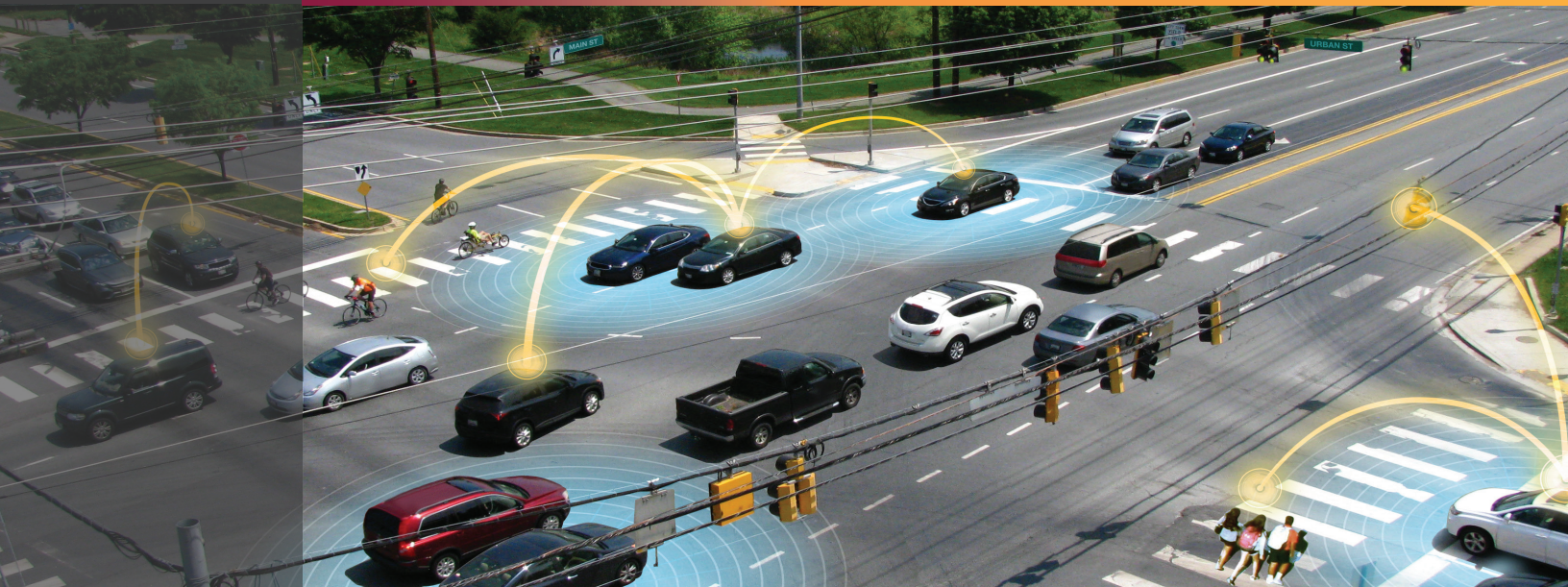
Improving the safety and effectiveness of transportation systems for all types of users

Supporting the development and evaluation of advanced technologies and operations using our laboratories, test-tracks, field studies, numerical models, and analysis toolchains

Quantifying performance benefits, resilience, unintended consequences, and potential misuse while also characterizing user acceptance, reliance, comprehension, and understanding of advanced vehicle and infrastructure systems

Programs

- **Advanced Product Test & Evaluation** conducts applied research to support light-vehicle human factors, transportation safety, driver performance, collision warning & avoidance technologies, and vehicle-highway automation

- **Advanced Vehicle Systems & Interfaces** evaluates in-vehicle technologies that are designed to assist drivers with crash avoidance and mitigation, including advanced driver assistance systems and connected and automated aehicles

- **Dynamics, Electronics, & Perception Systems** conducts research, development, and evaluation of the vehicle's physical systems, which are key for the perception of a vehicle's surroundings, the execution of vehicle control, and reliable operation

- **Center for Injury Biomechanics** investigates injury mechanisms following trauma to better understand human tolerance to injury, engineer enhanced safety countermeasures, and mitigate occurrences of serious injury in society

- **Training Systems** conducts research toward improving driving safety through training systems not only for novice drivers but also for drivers of automated vehicle systems

- **Vulnerable Road User (VRU) Safety** conducts applied research and outreach to enhance safety and mobility for all VRUs (e.g., older adults, pedestrians, bicyclists, people with disabilities, and other underrepresented demographics)

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Our Impact

Innovation - We strive to solve challenges associated with integrating cutting-edge technologies into the vehicles of tomorrow. Researchers work cooperatively with their industry and governmental partners to solve complex transportation problems.

Outreach - We engage the broader community by disseminating our research findings and best practices through participation in workshops and forums — such as our programs to educate teenage drivers and their parents on safe driving behaviors.

Collaboration - We specialize in highly collaborative projects. Most notably, the Safety Through Disruption University Transportation Center partnership provides unparalleled expertise, facilities, and resources to conduct impactful research.

Workforce Development - We train transportation researchers and leaders of the future. VTTI's InternHUB is an experiential learning program opportunity for undergraduate students. We create a talent pipeline for our industry partners and provide students with quality industry experience prior to graduation.

About VTTI

For 35 years, VTTI has been conducting research to save lives, time, and money and protect the environment. In our world-class facilities, we investigate, invent, design, develop, refine and test transportation systems of the future. As one of seven premier research institutes created by Virginia Tech to answer national challenges, VTTI is continually advancing transportation through innovation and has affected public policy on national and international levels.

To learn more about our work and get more involved, please contact us at:

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Advancing Transportation Through Innovation