

Larson Transportation Institute

Goals:

OFFER significant interdisciplinary educational and research opportunities for undergraduate and graduate students

APPLY interdisciplinary research solutions to solve transportation problems and disseminate the results

PROVIDE transportation-related expertise to local communities, the Commonwealth of Pennsylvania (COP) and the U.S.

PROMOTE continuing education for transportation professionals



Our Mission

The Thomas D. Larson Pennsylvania Transportation Institute (LTI) is Penn State's transportation research center. Since its founding in 1968, LTI has maintained a threefold mission of research, education, and service. The institute brings together top faculty, world-class facilities, and enterprising students from across the University in partnership with public and private stakeholders to address critical transportation-related problems.

LTI maintains a broad range of activities related to traffic operations, transportation safety, resilient infrastructure, advanced vehicle systems, and environmental sustainability. LTI's research programs deliver cutting-edge, high-impact solutions to federal, state, municipal, and industry partners. The institute also offers career-forming educational experiences and outreach activities to train current and future leaders of government, industry, and academia.

Vikash V. Gayah

Interim Director, The Thomas D. Larson Pennsylvania Transportation Institute

Research Partnerships

LTI's research partnerships with public and private agencies and organizations generate tangible results with worldwide applicability. The institute's multidisciplinary research personnel ensure an objective approach and effective application of expertise to address a broad range of transportation-related topics and problems. LTI's research partners also help enable the development of future leaders for the transportation industry.

Current partners include:

- COP: Department of Transportation
- COP: Pennsylvania Turnpike Commission
- COP: Department of Agriculture
- COP: Department of Conservation and Natural Resources
- Federal Transit Administration
- Federal Highway Administration
- U.S. Department of Transportation
- VHB, Inc.
- Kittelson and Associates
- National Cooperative Highway Research Program
- North Carolina Department of Transportation
- AAA Foundation for Traffic Safety Federal Railroad Administration

For a current and complete list of research partners, visit bit.ly/Larsonpsu.

To partner with LTI, contact Megan Bowersox, proposal and award generalist, at 814-865-0500 or mib5553@psu.edu.

Research Facilities and Outreach Programs

Bus Research and Testing Center

- Established in 1989 by the Pennsylvania Transportation Institute with funding from the Federal Transit Administration
- Tests bus safety, structural integrity, durability, performance, maintainability, noise, electric range, and fuel economy
- Accredited laboratory, certified for ISO 17025 international standard for testing
- The Altoona facility houses four bus maintenance and test bays fully equipped to perform heavy vehicle maintenance and repair
- altoonabustest.psu.edu

Civil Infrastructure Testing and Evaluation Laboratory (CITEL)

- 45,000-square-foot facility dedicated to bench-scale to full-scale testing of civil infrastructure materials and components
- Facilities for specimen fabrication, processing, and standard (ASTM, American Association of State Highway and Transportation Officials) testing of aggregates, cementitious materials, and concrete including wet chemistry lab, non-destructive testing, rheology and durability testing, and large-scale 3D printing
- Mechanical testing capabilities include a 2,500-square-foot structural floor for testing full-scale steel or concrete elements, 12-ton crane, three MTS test frames with servo-hydraulic actuator ranging from 11 to 220 KIP, large-scale shake table/earthquake simulator, and Split-Hopkinson pressure bar
- bit.ly/cee-citel

Center for Dirt and Gravel Road Studies (CDGRS)

- Provides outreach, education, and technical assistance to local public road-owning entities throughout Pennsylvania
- Focuses on creating a more environmentally and economically sustainable and resilient network for Pennsylvania's unpaved and low-volume paved roads
- Promotes better bridge and culvert installations to reduce environmental impacts, decrease flooding, and promote stream continuity
- Conducts research on rural road issues such as dust, sediment production, and aggregates
- dirtandgravel.psu.edu

Vehicle Research Laboratory

- 10,000-square-foot vehicle maintenance facility located adjacent to the test track
- Equipped with large-roll chassis dynamometer and full-scale CVS emission sampling and analysis system
- Alternative fueling and electric charging capabilities
- Full compliment of heavy vehicle maintenance tools and equipment
- Staffed with full-time mechanics and technicians

Test Track

- Features a one-mile oval, large-vehicle handling area and vehicle durability-testing course
- Past and current research activities include: visibility studies of traffic signs and pavement markings, crash testing barriers, and autonomous vehicle testing
- Staffed with full-time test drivers

Northeast Center of Excellence for Pavement Technology (NECEPT)

- One of five regional Superpave centers established by the Federal Highway Administration in 1995
- Houses a state-of-the-art binder and mixtures lab to perform Strategic Highway Research Program Superpave-specialized binder and mixture, subbase and subgrade, and pavement material characterization tests
- Supports training activities, pavements and materials-related research and development, and load response and performance measurements
- superpave.psu.edu

Center for Integrated Asset Management for Multi-Modal Transportation Infrastructure Systems (CIAMTIS)

The USDOT Region 3 (Mid-Atlantic) University Transportation Center

- Focuses on improving the durability and extending the life of transportation infrastructure
- Has seven partners representing five Mid-Atlantic states working to solve current and future transportation infrastructure issues
- r3utc.psu.edu

More information and a complete list of LTI's facilities and outreach programs, including the [Rail Transportation Engineering Program](#) and [Hybrid and Hydrogen Vehicle Research Lab](#), may be found on the LTI website.