



The Center for Transportation Research
The University of Texas at Austin

Department of Transportation Tier 1 University Transportation Center

The University of Texas at Austin Data-Supported Transportation Operations and Planning Center (D-STOP)

The Tier 1 University Transportation Center, “Data-Supported Transportation Operations and Planning” (D-STOP), will support economic competitiveness through its contributions to effective infrastructure operations and planning and the development of a more skilled workforce. D-STOP will achieve these goals by integrating research, education, and technology transfer activities.

D-STOP’s Vision

To be a national and international multimodal and multidisciplinary center of excellence that promotes the integration of cutting-edge developments in wireless sensor networks and communications technology with transportation systems to improve the United States’ economic competitiveness. This vision will be implemented through a research mission, an education and workforce development mission, and a technology transfer mission.

Focus

D-STOP researchers will focus on developing New Methodologies as well as New Technologies for working with currently available data and potentially with even completely new sources of data. In doing so, we specifically plan to harness the full potential of wireless sensor networks and communications technology to:

- 1 Effectively and efficiently collect and organize data through high-level architectural design mechanisms and their implementations
- 2 Analyze data through a combination of in-network and hub-based network processing features, and data fusion, mining, and statistical/econometric techniques
- 3 Use the information extracted for efficient, reliable, and effective transportation operations and planning purposes

D-STOP’s Research Mission

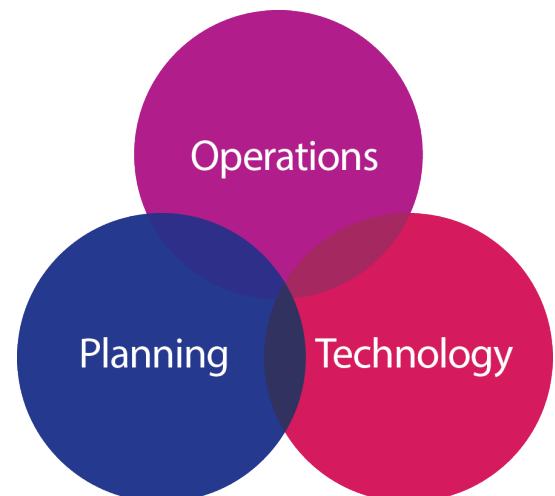
To develop fundamentally new methodologies to better harness traditional and recent data sources, and potentially develop new sources, in seeking to improve models for transportation planning and traffic operations.

D-STOP Research Will Occur in Three Areas:

Operations: Research on strategies to improve transportation network operation and design, and provide effective response strategies to reduce the repercussion of stress events.

Planning: Research on methods to forecast traffic-related measures in response to demographic and land use changes, and in response to policy actions such as congestion pricing.

Technology: Research on new wireless-based sensor technology, communication technology, data processing algorithms, and related areas that support the center’s vision of harnessing technology for transportation applications.



Wireless Networking &
Communications Group

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D-STOP's Technology Transfer (TT) Mission

To disseminate information on research activities and findings, and actively promote the utilization and implementation of research products/findings through real-world demonstrations (in collaboration with industry and public agency partners).

The Education and Workforce Development (EWD) Mission

To build a transportation workforce that is able to use multidisciplinary approaches to address multi-dimensional complex problems, through an emphasis on real-time data analysis and processing, the study of the dynamics underlying human activity-travel decision-making, and training on the effective use of information.

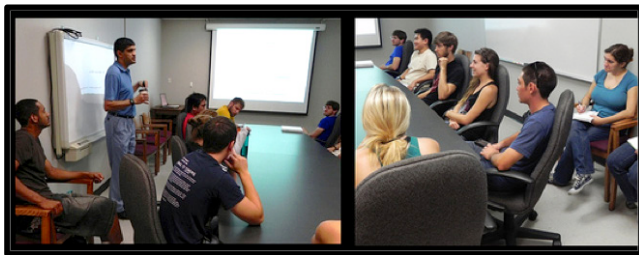


Funding

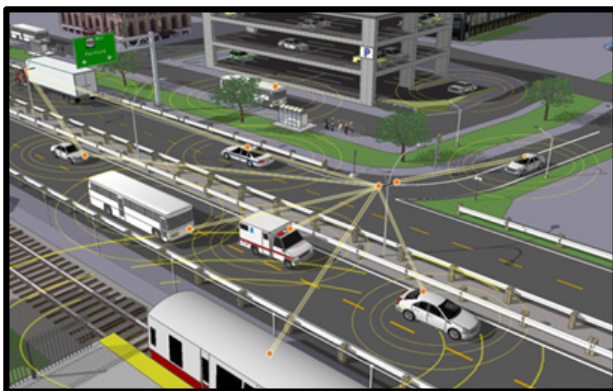
Total funding for D-STOP's operation will include the US Department of Transportation funding plus non-federal matching funds. The match for Tier 1 UTCs is at least 50% of the DOT funding, but we hope to obtain a full 100% match to be more effective and ambitious in our proposed initiatives.

How Does Contributing Matching Funds Benefit You?

- Serve on D-STOP Advisory Council and guide D-STOP activities, including identifying test beds and real-world projects for the Center
- Be an active contributor to advancing knowledge through supporting high-quality research relevant to Texas's and U.S.'s economy and transportation objectives
- Build lasting relationships with CTR and WNCG researchers to enhance the state and national economy, and to help address critical transportation challenges facing Texas and the nation
- Enhance student training to prepare the nation's future workforce and industry leaders, and position the U.S. for international competitiveness in emerging areas
- Accelerate the transfer of research discoveries and technological advancements to the real world for public and private benefit, through interactions and networking among leaders from academia, the industry, and public transportation agencies



D-STOP undergraduate and graduate students will be given the unique opportunity to take part in cross-cutting research that is both state of the art and vital to transportation practitioners. Funding through D-STOP will allow these young researchers the opportunity to not only conduct fundamental research, but also to transfer their knowledge to practice via workshops, symposia, and conferences. Such experiences are critical for leadership development, teaching skills beyond those offered in the classroom or in a research laboratory.



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