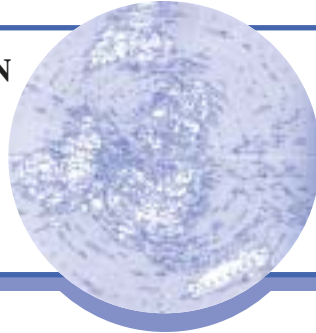


Intelligent Transportation Systems Institute

HUMAN-CENTERED TECHNOLOGY TO ENHANCE SAFETY AND MOBILITY

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) INSTITUTE



Center for Transportation Studies
University of Minnesota • Twin Cities
P: 612-626-1077 • F: 612-625-6381
E-mail: itsinst@tc.umn.edu
Web: www.its.umn.edu

Purpose

The Intelligent Transportation Systems (ITS) Institute conducts research, education, and technology transfer initiatives that focus on human-centered technology. The ultimate aim of this work is to enhance the safety and mobility of road and transit-based transportation. Funding for the ITS Institute was renewed by the Transportation Equity Act of the 21st Century (TEA-21), the 1998 federal transportation authorization bill. This funding continues the Institute's efforts initiated under TEA-21's predecessor, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991.

Research

The ITS Institute supports a diverse research agenda with projects that offer the potential for safer and more efficient use of the transportation network. Its research includes:

- human performance and behavior
- computing, information, and communication
- sensing, measurement, and control systems
- tools for modeling, managing, and operating transportation systems
- related social and economic policies

Faculty expertise covers a range of related disciplines, such as mechanical engi-



neering, electrical engineering, human factors, computer science and engineering, civil engineering, and public policy, among others. This strategic partnering ensures that Institute-developed technologies

become tools to optimize human capabilities. By using a human-centered approach, new developments in the Institute's core ITS technologies of computing, sensing, communications, and control systems are used to approach significant safety and mobility problems with a fresh perspective.

ITS research cuts across several modes of surface transportation, including automobiles, transit, heavy vehicles, and specialty vehicles such as snowplows and ambulances.

“Human-centered systems that use technology to assist drivers and compensate for human frailties are not just a dream—they are being deployed now, thanks in part to university research.”

—Max Donath, director,
ITS Institute

In addition, Institute research addresses issues associated with transportation in a northern climate and investigates technologies that enhance the safety of travel in rural environments.

Education

The ITS Institute sponsors and supports numerous educational initiatives for students that include:

- Development of new curriculum and courses, such as an ITS interdisciplinary laboratory course
- Involvement of undergraduate and graduate students in ITS
- Institute-sponsored research projects
- An annual career expo for students who are interested in transportation
- Research assistantships to help increase the number of transportation students
- Seminars where faculty share their expertise and recent research findings

Technology Transfer

The ITS Institute shares knowledge and research findings through methods that include:

- A quarterly research newsletter, the *Sensor*
- Publication of research reports
- The Institute's Web site (www.its.umn.edu)

Facilities

The ITS Institute uses a number of state-of-the-art facilities to assist in its research:

- The ITS LABORATORY offers researchers a place to test and evaluate new transportation management and operational strategies and traveler information technologies before implementation.
- The Intelligent Vehicles Laboratory evaluates, develops, and integrates new human-centered technologies for improving the safety of vehicles. It consists of several vehicles—including the SAFETRUCK, an instrumented tractor trailer, and the SAFEPLow, an instrumented snowplow—as well as high-accuracy differential global positioning systems, radar technologies, and augmented displays for driver-assistive technology research.



- The HumanFIRST Program conducts research on driver performance and system design related to surface transportation, specializing in the simulation of real-world driving environments.
- The Northland Advanced Transportation Systems Laboratories, housed at the University of Minnesota Duluth, studies transportation-related needs specific to northern climates and small urban areas. It includes the Advanced Sensor Research Laboratory, the Transportation Data Research Laboratory, and an Education and Outreach Program.

For more information about the ITS Institute, contact:

ITS Institute
Center for Transportation Studies
University of Minnesota
200 Transportation and Safety Building
511 Washington Avenue S.E.
Minneapolis, MN 55455-0375

Phone: 612-626-1077 • Fax: 612-625-6381
E-mail: itsinst@tc.umn.edu • Web: www.its.umn.edu

Dr. Max Donath
Director, ITS Institute
612-625-2304 • donath@me.umn.edu

Dr. Eil Kwon
Director, Advanced Traffic Systems Program
612-625-1371 • kwonx001@cts.umn.edu

Dr. Craig Shankwitz
Director, Intelligent Vehicles Program
612-625-0323 • shank004@tc.umn.edu

Dr. Nicholas Ward
Director, HumanFIRST Program
612-625-6446 • nicw@me.umn.edu

Dr. James Riehl
Director, Northland Advanced Transportation Systems
Research Laboratories
218-726-6397 • jpriehl@d.umn.edu

Dawn Spanhake, P.E.
Manager, Research Development and Contract
Coordination
612-626-1536 • spanhake@cts.umn.edu

Ted Morris
Manager, ITS LABORATORY
612-626-8499 • tmorris@me.umn.edu