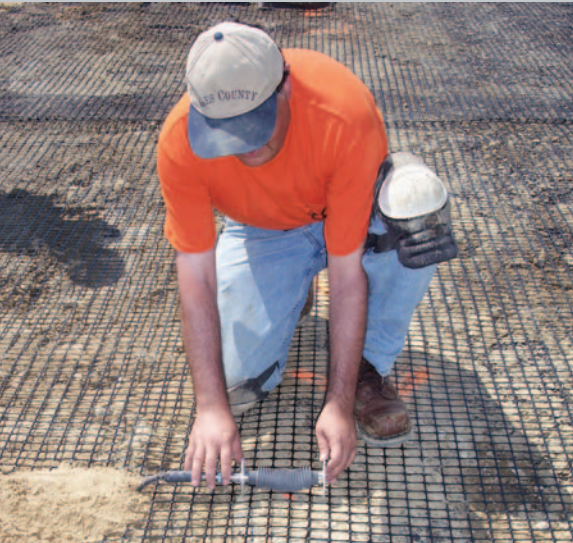
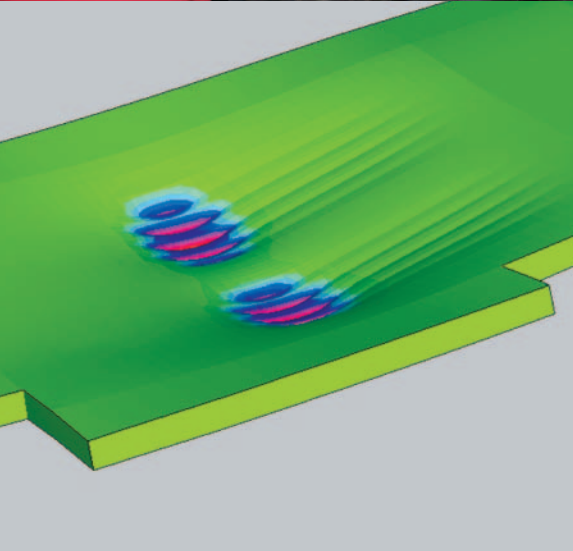


Illinois Center for Transportation

Where Excellence Meets the Highway





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The U.S. is served by some of the best transportation infrastructure in the world, including nearly 6.3 million kilometers (3.9 million miles) of streets, roads, and highways, and more than 570,000 bridges. The U.S. public roadway network is traveled by more than 3.8 trillion vehicle-kilometers per year (2.4 trillion vehicle-miles per year). A major concern is that the continued deterioration and increased demand of our transportation infrastructure system has the potential to adversely affect the economic growth and competitiveness of our nation. The monetary cost and the disruption to daily life from a transportation system that cannot meet these increased demands would be astronomical. An active research program on "intelligent" renewal of our transportation infrastructure, improving the safety, and reducing the impact on the environment maximizes the return from taxpayers' dollars and makes effective use of infrastructure investment.

To fulfill the State of Illinois vision of a safe and reliable state and national transportation program and to efficiently maintain its viability, new ways of leveraging the resources have been implemented through an innovative partnership between the Illinois Department of Transportation (IDOT) and the University of Illinois at Urbana-Champaign. This partnership promotes working with other universities and industry partners in a manner that will enable each entity to better serve the state and to achieve greater distinction and national prominence in transportation technology and implementation. This partnership is embodied in the Illinois Center for Transportation (ICT, pronounced "Ice-Tea").

The Illinois Center for Transportation builds on the renowned experts in transportation and related fields at the University of Illinois, IDOT, and other Illinois universities by providing the appropriate tools and support required for research today. The center is housed within the Department of Civil and Environmental Engineering, a department consistently ranked as our

nation's best. ICT provides a unified framework for the transportation research program at the University of Illinois and IDOT through the use of an integrated organizational structure, coordinated programs, unique facilities, and common outreach activities.

Vision

Innovations and new technologies should impact IDOT and our national transportation system in a timely manner. ICT promotes the timely implementation of cost-effective technologies that improve safety and reliability, reduce congestion, increase utilization of the state transportation infrastructure, and optimize the limited resources of IDOT. It is the vision of ICT to serve the needs of IDOT, the State of Illinois, and the nation through research, education, and outreach.

Mission

The ICT mission promotes innovation and progress in transportation through interdisciplinary research in an objective setting. Utilizing the flexible organization of the ICT, the state and the nation can benefit from a more rapid response to future scientific challenges in transportation and can adapt more readily to changing needs.

Research

Research through the ICT provides opportunities to promote innovations in addressing problems regarding safety, congestion, environment, and community impacts coupled with investigative research on pavements, structures, and materials. Interdisciplinary collaboration is enhanced through improved interaction among students and faculty from diverse backgrounds that facilitates learning under the ICT umbrella, enhancing the outcome for sponsored research.

The collaboration between IDOT, industry, Federal Highway Administration, academia, and the University of Illinois ensures a robust and effective research program at ICT. A new expertise to develop important technologies relevant to IDOT and the nation can only evolve through working together in a flexible framework.

Education

As an integral part of the University of Illinois nationally top-ranked Department of Civil and Environmental Engineering, the ICT provides a new vehicle to recruit exceptionally qualified students who will be the technically experienced engineers required in the future. A main objective is to ensure that the education in transportation at Illinois universities and the nation continues to provide the level and high quality of graduates for the future professional needs of IDOT and the nation.

The center provides students with opportunities to work on real-life projects in constructed facilities, transportation systems, safety, environment, human factors, economy, and policy in cooperation with IDOT professionals in a challenging and diverse research program.

Outreach

Educational opportunities for engineers ensure they are current in the state of the practice as well as the state of the knowledge. This is accomplished through offering periodic short courses and training. In addition, a directed effort is made to develop and maintain awareness in the general public regarding the importance of the transportation infrastructure to their general well being. Through the outreach program, ICT implements and transfers recently developed and discovered transportation technologies in a rapid and efficient manner.

ICT at ATREL

Quickly emerging as one of the top transportation facilities in the nation, the Advanced Transportation Research and Engineering Laboratory (ATREL) is a unique and comprehensive transportation research, educational, and testing laboratory. Located on 47 acres of the former Chanute Air Force Base in Rantoul, Illinois, the facility has 60,000 square feet of laboratories, continuing education classrooms, office space, and a technical library. All areas of ATREL have advanced computer networks and facilities, which allow for high-speed internal networking as well as outside communications to the University of Illinois main campus and to the world.

The ATREL complex includes three major buildings for testing pavement materials and transportation operations. Laboratories are focused on transportation research for advanced pavement and railroad material testing. A second large building supports research on transportation operations, safety, system simulation, and intelligent transportation systems (ITS). A third facility houses unique equipment for large-scale testing and materials processing. ATREL also houses nondestructive testing equipment, including a van equipped with a state-of-the-art ground penetration radar (GPR) unit with a wide range of antennae for accurate measurements of pavement layer thicknesses and for flaw detection.

The large land area at the ATREL complex is being utilized for the construction of a full-scale pavement test facility. Through funding from IDOT and the State of Illinois, ATREL acquired the accelerated transportation loading assembly (ATLAS), capable of evaluating multiple transportation support systems under real environmental and vehicular loading conditions, such as highway and airport pavements and railroad tracks. The facility has readily available data acquisition systems for collecting both static and dynamic data from instrumented pavement sections.



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