



Mississippi Valley Freight Coalition Workshop Update on Related Regional Activities

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Intermodal Transportation Institute



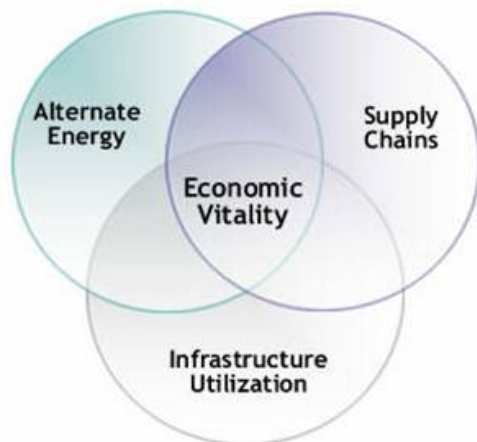
The University of Toledo

ITI

Intermodal
Transportation Institute



**Transportation for Economic Security and Development:
*Alternate Energy, Infrastructure Utilization, and Supply Chains***



The UT-UTC focuses on economic development through transportation research and education. The initial plan for the Center was articulated by businesses that depend on transportation to compete successfully in a global economy. The focus and activities of the UT-UTC meet the needs expressed by these external stakeholders.



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Intermodal Transportation Institute

Vision Statement

To develop technology-enabled intermodal transportation systems and supply chains that promote economic development and quality of life.



Intermodal Transportation Institute

Goals and Objectives

- Create an internationally recognized center of excellence
- Advance technology and expertise in the many disciplines comprising transportation
- Educate a multi-disciplinary work force
- Attract students, faculty, and staff in undergraduate, graduate, and profession programs
- Enhance diversity in the various fields related to transportation



Intermodal Transportation Institute

ITI Development Milestones

- 1990s... Public and private sector organizations encouraged the University of Toledo to develop a center focusing on transportation, logistics, and supply chain issues
- 2001... The Intermodal Transportation Institute (ITI) is created
- 2002... ITI begins operation
- 2005... Resulting from progress of the Intermodal Transportation Institute, the University of Toledo was designated as one of only 65 U.S. Department of Transportation University Transportation Centers (UTC) nationwide.
 - The UTC is a partnership of UT, the lead institution, and Bowling Green State University and Wayne State University.



Growing the UTC and ITI

- Focus Areas & Funded Projects
 - Research
 - Education
 - Technology Transfer
 - Science & Technology Corridor
 - Special Projects
 - Economic Development

Intermodal Transportation Institute

External Funding

- **US DOT University Transportation Center**
 - 4 yr. \$2,000,000
- **US DOT Biodiesel Study**
 - 3 yr. \$1,480,000
- **National UTC at the University of Wisconsin-Madison**
 - 5 yr. \$500,000
- **Great Lakes Maritime Research Institute**
 - 1 yr. \$100,000



\$1.16 Million in Active Research

- **\$750,000 ... 2007 Active Research**
 - 9 Active Projects
 - \$300,000 in Grants
 - \$350,000 in Match
- **\$410,000 ... 2008 Active Research**
 - 9 Active Projects
 - \$210,000 in Grants
 - \$210,000 in Match

2007 Active Research

2007 Active Research

Title	PI	Affiliation	Grant Amount*
Reducing Noise and Vibration of Hydraulic Hybrid and Plug-In Hybrid Electric Vehicles	Mohammad Elahinia	UT-Eng	\$ 50,000
Developing and Testing a Framework for Alternative Ownership, Tenure and Governance Strategies for the Proposed Detroit-Windsor River Crossing	Snehamay Knasnabis	WSU-Eng	\$ 41,010
Value of ITS Information for Congestion Avoidance in Inter-Modal Transportation Systems	Alper Murat	WSU-Eng	\$ 55,000
ITI Research Proposal: Combined Truck Routing and Driver Scheduling Problems Under Hours-of-Service Regulations	Hokey Min	BGSU-Bus	\$ 41,000

2007 Active Research

Title	PI	Affiliation	Grant Amount*
Regional Freight Information Resources for Market Opportunities in the Great Lakes Maritime Transportation System	Peter Lindquist	UT-A&S	\$ 26,283
Global Supply Chain Management/Transportation Building a Global Network of Scholars and Educators	Subba Rao	UT-Bus	\$ 49,994
Incorporating Intermodal Transportation into the Spatially Integrated Social Sciences	Peter Lindquist	UT-A&S	\$ 8,706
Global Supply Chain Management/Transportation Efficiency Systems Graduate Degree Program	Subba Rao	UT-Bus	\$ 15,811
Develop a Plan for Cooperative Education in Supply Chain Management at the Undergraduate Level	Mark Vonderembse	UT-Bus	\$ 5,000



2008 Research Opportunities

2008 Research Opportunities

Title	PI	Affiliation	Grant Amount*
Value of ITS Information for Congestion Avoidance in Inter-Modal Transportation Systems	Dr. Alper Murat	WSU - College of Engineering	\$55,000
Regional Freight Information Resources in the Great Lakes Maritime Transportation System – Phase II	Dr. Peter Lindquist	UT- Chair, Dept of Geography & Planning	\$50,000
An Innovative Image Analysis System for Maintenance of Transportation Facilities	Dr. Kami Makki	UT- Engineering Dept. of Electrical & Computer Science	\$12,000
Development of a Certificate Program in Transportation, Logistics, and Supply Chain Management	Dr. Mark Vonderembse	UT- Business, Dept of Information Operations Technology Management	\$10,000

2008 Research Opportunities

Title	PI	Affiliation	Grant Amount*
Travel Behavior of U.S. Domestic Airline Passengers and Its Impacts on Infrastructure Utilization	Dr. Bhuiyan Alam	UT-Dept. of Geography and Planning	\$20,000
An Analysis of the Status and Impacts of Public Private Partnerships of the Indiana Toll Road	Dr. Hiroyuki Iseki	UT-Dept. of Geography and Planning	\$19,267
High Speed Transportation Corridor: A Conceptual Framework	Dr. Udayan Nandkeolyar	UT-Business, Dept. of Information Operations Technology Management	\$10,000
Development of a Secondary Level Education Program in Transportation, Logistics, and Supply Chain Management	Doug Greiner	UT-Business, Applied Organizational Technology	\$10,000

2008 Research Opportunities

- Value of ITS Information for Congestion Avoidance in Inter-Modal Transportation Systems
 - Dr. Alper Murat...WSU College of Engineering
 - \$55,000

2008 Research Opportunities

- Regional Freight Information Resources in the Great Lakes Maritime Transportation System – Phase II
 - Dr. Peter Lindquist...UT- Chair, Dept of Geography & Planning
 - \$50,000...CFIRE National UTC and GLMRI; US Army Corps

2008 Research Opportunities

- **An Innovative Image Analysis System for Maintenance of Transportation Facilities**
 - Dr. Kami Makki...UT- Engineering Dept. of Electrical & Computer Science
 - \$12,000 Grant of equal amount from MIOH-UTC

2008 Research Opportunities

- Development of a Certificate Program in Transportation, Logistics, and Supply Chain Management
 - Dr. Mark Vonderembse...UT- Business, Dept of Information Operations Technology Management
 - \$10,000 In association with a scholarship from the Toledo Trucking Association

2008 Research Opportunities

- **Travel Behavior of U.S. Domestic Airline Passengers and Its Impacts on Infrastructure Utilization**
 - Dr. Bhuiyan Alam...UT-Dept. of Geography and Planning
 - \$20,000 Using massive data collected and housed in Geography & Planning which has never been analyzed

2008 Research Opportunities

- **An Analysis of the Status and Impacts of Public Private Partnerships of the Indiana Toll Road**
 - Dr. Hiroyuki Iseki...UT-Dept. of Geography and Planning
 - \$19,267

2008 Research Opportunities

- High Speed Transportation Corridor: A Conceptual Framework
 - Dr. Udayan Nandkeolyar...UT-Business, Dept. of Information Operations Technology Management
 - \$10,000 This is an initial look at the feasibility of the concept

2008 Research Opportunities

- Development of a Secondary Level Education Program in Transportation, Logistics, and Supply Chain Management
 - Doug Greiner ...UT Business, Dept. of Applied Organizational Technology
 - \$10,000 Working with the Toledo Trucking Association, career education centers and area high schools.

2008 Research Opportunities

- Combined Truck Routing and Driver Scheduling Problems Under Hours-of-Service Regulations
 - Focus: Supply Chains
 - Principle Investigator:
 - Hokey Min, Ph.D. - Bowling Green State University

Transportation Opportunity Districts

- **A Transportation Opportunity District (TOD)**
 - Geographically defined economic development space that focuses on the logistics and transportation.
 - Located and operated to improve delivery time, enhance system reliability, increase productivity, and reduce operating costs.
 - Often brings together two or more modes of transportation in a synergistic way.
 - Provides one-stop access to and support for incentive programs currently available from federal, state, and local authorities.
 - Designed and planned through cooperative efforts by public and private sector partners to enhance economic development in the region.

Transportation Opportunity Districts

- Advantages of Transportation Opportunity District
 - A TOD can have
 - Government incentives that reduce initial investment costs and/or continuing operating costs such as infrastructure assistance or job creation incentives
 - Economies of scale in infrastructure and operating improvements
 - Operating advantages, e.g. ... the ability to access turnpike triples or to shift freight from one mode to another efficiently.

Transportation Opportunity Districts

- **Types of Transportation Opportunity Districts**

- Water Port Anchored TOD

- Located near the Port of Toledo with on-site access to both rail and truck for transporting products to and from the port.

- Airport Anchored TOD

- Located near Toledo Express Airport with on-site access to truck, which would be used extensively to move product from the airport to customers.

- Surface Transportation Anchored TOD

- Located in various places where both important highway routes and rail lines exist. This allows companies to shift items between modes to create the best transportation arrangement. Access to long combination vehicles that use triple trailers further enhance the attractiveness of this option.

Science & Technology Corridor

Building a Knowledge Economy

"Where Research and Innovation Mean Business"

Science & Technology Corridor

Description

The Science and Technology Corridor is both a pathway for collaboration between the University of Toledo and the regional business and economic community. Geographically, it is situated between UT's Main, Health Science and Scott Park campuses. Throughout that area, UT is working with partners to provide development opportunities for new and existing enterprises that draw upon research knowledge and innovation at the University of Toledo.

Open Discussion & Questions