

Great Cities Commitment Programs at UIC

Transportation Innovation

Artificial Intelligence Laboratory

Description: The Artificial Intelligence Laboratory specializes in applied AI research and development, particularly focusing on projects in the areas of transportation, molecular biology, and electronics manufacturing optimization.

Dates active: 1991 -- present

Category: Transportation innovations
Biotechnology
Industry partnerships

UIC Partners: Engineering

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Partners: Illinois Department of Transportation

National Institutes of Health

National Science Foundation

United States Department of Transportation

High Occupancy Vehicle Bypass Lanes on Metered Expressway

Description: The objective of this study is to review and comment on the FREQ simulation model calibration with recommendations for the ramp metering and HOV bypass lanes on entrance ramps at expressways. UIC is also developing the methodology to forecast latent (or induced) demand for traffic in-fill that may result from the implementation of simulation/optimization and the resulting freed up expressway capacity.

Dates active:

Category: Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: Chicago Area Transportation Study (CATS)

Impact Analysis for Freight Operation Improvements

Description: Project objective is to develop a benefit evaluation framework using the outputs from state-of-the-art simulation programs developed by the team from Northwestern University. Strategy is to facilitate coordinated planning and operations among stakeholders, a process that evaluates broad impacts of proposed projects will be needed. Such process should not only quantify both positive and negative impacts, but also determine the incidence of impacts for various parties including shippers, transporters, general public, and residents around the terminals and along the freight routes.

To answer such needs, a tool to evaluate the distributions of the impacts under alternative scenarios will be developed as a post-processor to the models developed by the teams from the Northwestern University. This tool will use the traffic data provided by the simulation model to quantify both positive and negative impacts including; travel time savings for both freight and passenger vehicles, miles of empty operation, truck and rolling stock operating costs, effect on environment (through noise, air pollution, and vibration), capital and maintenance costs for roadway and rail infrastructures,

change in property values near terminals and freight routes, and accidents. The information can be used not only for outreach activities but also for long range planning at the Metropolitan Planning Organization (MPO) level to bring the freight into the mainstream of public sector transportation planning.

Dates active: Sept 2002 -- Aug 2004

Category: Urban infrastructure improvement
Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: National Science Foundation

Northwestern University

Making the Chicago Transit Authority More Competitive as it Moves into the 21st Century

Description: This project will provide CTA with data visualization and decision support tools and techniques made available by the Great Cities Urban Data Visualization program and the Urban Transportation Center. The collaboration will focus on four areas of research: (i) Transit Operations, (ii) Transit Facility Design and Construction Processes, (iii) Decision Support for Service Development, and (iv) Future Transit Funding Strategies and Opportunities. Specific topics within these areas of research are determined on an annual basis by a steering committee made up of CTA and URS staff and MIT/UIC faculty. The steering committee will have the important task of balancing institutional needs of CTA and the research missions of the academic partners. Specific products will be established for each student and each research topic on a project-by-project basis.

Dates active: Jan 2001 -- Oct 2005

Category: Transportation innovations

UIC Partners: Great Cities Institute

Urban Planning and Public Affairs

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Partners: Chicago Transit Authority

Massachusetts Institute of Technology

URS Corporation

Metropolitan Transportation Support Initiative (METSI)

Description: METSI provides transportation research, education and technical support on urban problems in the Chicago region and the state of Illinois. The Research Program consists of projects with the following topics: travel time projections, freight congestion, intermodal freight, environmental justice, GIS mapping of traffic signals, Kane County Transit Opportunity Assessment, Travel time activity analysis, I-55 Corridor Growth Study of Will County, rail-highway grade crossing report, commuter choice (payroll deduction) project, infrastructure data mining, intercity bus demand analysis, and automated scheduling and dispatching analysis. Transportation related workshops have been given to CTA, Pace, NIPIC and CATS. In addition, an annual Symposium is held which attracts attendees from the region and the midwest. Technical assistance has been provided to the Illinois Department of Transportation, Metra, the Regional Transportation Authority, Chicago Area Transportation Study, Cook County, Greater North Michigan Avenue Association, the Work Force Boards of Northeastern Illinois, Suburban Job Link, South Central Mass Transit District and the TMA of Lake Cook.

Dates active:

Category: Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: Illinois Department of Transportation

Office of Planning and Programming

Systemwide Information for Transportation Assessment and Research

Description: The study focuses on transportation planning issues of particular relevance to North Eastern Illinois. The study has four elements: 1) Chicago region freight study; 2) American Community Survey (ACS) Data; 3) Transferability of Household Travel Survey Data in Calibrating and Validating Travel Forecasting Models; and 4) Economic Impacts and ITS Deployment Planning

Dates active:

Category: Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: Chicago Area Transportation Study (CATS)

Illinois Department of Transportation

United States Department of Transportation

Federal Highway Administration

Transportation Information Clearinghouse

Description: Our objectives are to inventory and document the region's non-public/non-traditional transportation services, and develop a plan to assimilate this information into a common database of the RTA Travel Information Center and other media developed to disseminate traveler information. In addition, the special needs of work and work related, social, family, trip chains as well as cultural barriers will be identified and addressed.

Dates active:

Category: Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: Regional Transportation Authority

Workforce Boards of Metropolitan Chicago

Transportation Research for Low-Income Groups

Description: The UIC project on worker accessibility explores trends and needs in the low-income labor market sector. Our objective is to identify user needs, evaluate new transit markets and also to couple empirical research in this area with transportation demand modeling and Geographic Information Systems.

Current activities include: 1) Evaluating the impact of transit services on low-income groups and the extent to which transit makes a difference in employment opportunities; 2) Monitoring national and local trends on low-income worker accessibility; 3) Exploring innovative partnership initiatives that

offer cross-sectoral, holistic approach to accessibility; 4) Providing assistance to FTA, state and local agencies on job access issues; and 5) Exploring decision making techniques and public participatory methods to facilitate cross-sectoral planning.

Dates active:

Category: Transportation innovations
Services for the disadvantaged

UIC Partners: Urban Planning and Public Affairs

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Partners: Community Transportation Association of America

Illinois Department of Human Services

United States Department of Transportation

Federal Transit Administration

Upper Midwest Freight Corridor Study

Description: The objective of this study is to establish a regional approach for improving freight transportation in the Upper Midwest based on a multi-state, multi-jurisdictional partnership of public and private sector stakeholder interests. The Upper Midwest serves as a critical corridor for domestic and international freight moving in all directions. It is projected that these freight movements will increase significantly in the future. Shifts in federal and public agency policy relative to infrastructure management and expansion, budgeting decisions and staff resource allocations have and will impact the safe and efficient movement of goods within the region. At the same time private sector interests insist on an equitable approach for all modes and allows industry to remain competitive in the region. Without proper collaboration and communication between the two sectors, and between the states and planning agencies of the region, the impacts of projected freight growth will pose an even greater challenge.

Dates active:

Category: Urban infrastructure improvement
Transportation innovations

UIC Partners: Urban Planning and Public Affairs

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Partners: United States Department of Transportation

Pooled fund including Ohio, Illinois, Indiana, Iowa, Minnesota, and Wisconsin

Urban Transportation Center

Description: UTC seeks to understand and improve urban transportation through the creation, application and dissemination of transportation knowledge while also making use of the Chicago metropolitan area.

Dates active: 1979 -- present

Category: Transportation innovations
Urban infrastructure improvement

UIC Partners: Urban Planning and Public Affairs

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Partners: Chicago Area Transportation Study (CATS)
Don Kopec, Acting Executive Director

Chicago Transit Authority
Frank Kruesi, President

City of Chicago
John A. Roberson, Commissioner, Department of Aviation

Federal Transit Administration
Don Gismondi, Acting Director

Illinois Department of Transportation
Randall S. Blankenhorn, Director, Office of Planning and Programming
Jason Tai, Director, Division of Public and Intermodal Transportation
Diane O'Keefe, District Engineer, District 1

Illinois State Toll Highway Authority
Jack Hartman, Executive Director

Metra
Philip Pagano, Executive Director

Northeastern Illinois Planning Commission
Ronald Thomas, Executive Director

Pace
T.J. Ross, Executive Director

Regional Transportation Authority
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