2008 Annual Report

CENTER FOR TRANSPORTATION STUDIES

University of Minnesota
This publication contains highlights of transportation research, education, and outreach activities conducted by the Center for Transportation Studies and its affiliated programs for the period July 2007 through June 2008 (fiscal year 2008).

Contents

Director’s Message ................................................................. 2
Research .................................................................................. 4
Researchers ............................................................................. 14
Education .................................................................................. 18
Outreach and Public Engagement ........................................... 24
Awards and Participants .......................................................... 28
In 1986 two professors planted the seed for a transportation research center at the University of Minnesota. The idea took root, and today the Center for Transportation Studies is a nationally recognized leader in transportation innovation.

CTS opened its doors in 1987 with a single employee—founding director Richard P. Braun, a former commissioner of the Minnesota Department of Transportation—and a one-time state allocation of $2.7 million. Today CTS coordinates approximately $20 million annually for research, education, and outreach activities at the University.

Much has happened between then and now. Our research program broadened from pavements, bridges, and traffic into arenas such as policy, finance, land use, and energy. More than 75 faculty from 25 departments are now involved.

CTS brings these diverse fields together to tackle complex transportation issues. For example, a recent study led by the American Institute of Architects looked at how transportation can enhance community design, while an effort...
funded by the state legislature explored ways to reduce greenhouse gas emissions from the transportation sector.

CTS has steadily added new capabilities with components such as the federally funded Intelligent Transportation Systems Institute and the Minnesota Local Technical Assistance Program. We also partner with other organizations in programs such as the Center for Excellence in Rural Safety and the Transportation Engineering Road Research Alliance.

Throughout its history, CTS has served as a resource and neutral facilitator, helping University researchers share their knowledge with professionals and policymakers and inform public debate. This role—public engagement—has grown in scope and importance, evidenced by an array of events, publications and Web sites, and media outreach.

We are proud to have reached the upper echelon of the nation’s transportation centers. CTS is a proven performer, thanks to the contributions of the many people and organizations that have supported us. We look forward to what the next 20 years may bring.

Robert C. Johns, Director
Center for Transportation Studies

---

**2000**
- CTS, Mn/DOT’s Office of Aeronautics, and the Minnesota Council of Airports launch the Airport Technical Assistance Program (AirTAP).

**2001**
- A Graduate Certificate in Transportation Studies program is established and begins accepting students.
- Robert Johns is named CTS director.

**2002**
- The first James L. Oberstar Forum on Transportation Policy and Technology is held.
- CTS reports to the University Executive Vice President and Provost.

**2003**
- The Transportation and Regional Growth Study is brought to a close with the publication of a synthesis titled *Market Choices and Fair Prices*.
- CTS implements the CTS Scholars Program, which involves joint appointments of faculty and researchers.

**2004**
- The Center hosts the first Access to Destinations conference, using University funds gained through a University-wide competition.

**2005**
- The ITS Institute is reauthorized in the federal SAFETEA-LU transportation act at a level of $16 million over five years.
- A new interdisciplinary research and outreach study, Access to Destinations, gets under way.
- A CTS role is defined for the new Transportation Engineering and Road Research Alliance (TERRA).
- CTS expands its partnership with Hennepin County on the Community Transportation (CT) program.

**2006**
- CTS establishes the Security in Transportation Technology Research and Applications (SECTTRA) Program in partnership with the Department of Computer Science to position the University to attract federal funds for transportation security research.
- CTS takes on a supporting role for the Humphrey Institute’s Center for Excellence in Rural Safety (CERS). The center was funded in SAFETEA-LU.

**2007**
- The Richard P. Braun CTS Chair in Transportation is fully funded with proceeds from Autoscope royalties and the completion of a fundraising effort.

**2008** (through June 30)
- CTS works with the Department of Civil Engineering to develop new traffic laboratory facilities, moving the previous ITS lab to the Civil Engineering Building.
- CTS receives an appropriation from the Minnesota Legislature to assess public policy and technology options for reducing greenhouse gases emitted from the transportation sector in Minnesota.
- Research is completed under the Moving Communities Forward interdisciplinary study, funded by the American Institute of Architects.

**The legislature increases CTS base funding**

**FY08 BUDGET**

State of Minnesota Contracts 25%
Federal Funding 41%
University of Minnesota 18%
Regional/Local Funding 8%
Other Funds 7%
Miscellaneous 1%

CTS total revenues FY08: $19.9 million
20 years... 600 research reports

www.cts.umn.edu/Research
Interdisciplinary studies

Reduction of greenhouse gas emissions
CTS received an appropriation in 2007 from the Minnesota Legislature to assess public policy and technology options for reducing greenhouse gas (GHG) emissions from the transportation sector in Minnesota. To address the interdisciplinary issues raised by this study, CTS assembled and led a research team drawn from multiple fields including mechanical engineering, public policy, and civil engineering. Principal investigators were Professor David Kittelson from the Department of Mechanical Engineering, Assistant Professor Julian Marshall from the Department of Civil Engineering, and Assistant Professor Elizabeth Wilson from the Hubert H. Humphrey Institute of Public Affairs.

The team found that the transportation sector can meet its share of the state’s goals for reducing GHG emissions in 2015 and can possibly exceed them in 2025—but action must start now. According to the final report, meeting the goals will require a combination of strategies targeted to reduce fuel consumption, vehicle-miles traveled, and fuel carbon content.

Cutting fuel consumption is necessary to meet the state’s emission goals, according to the Greenhouse Gas study.

Mapping accessibility
CTS published three research reports in the Access to Destinations study. Access to Destinations is an interdisciplinary research and outreach effort coordinated by CTS with support from sponsors including the Minnesota Department of Transportation, Hennepin County, the Metropolitan Council, and the McKnight Foundation. A synthesis of the study research will be published in 2009.

The Second International Access to Destinations Conference was held in August 2007 (see page 25).

Improving community design and livability
Final reports were published for the Moving Communities Forward study. The pioneering study analyzed more than 30 different transportation projects from every corner of the country, exploring how they affect their communities’ economic progress, environmental health, public safety, level of citizen participation, and overall aesthetics and livability. The American Institute of Architects (AIA) selected CTS in 2006 to conduct the study. Funding was derived from a grant to the AIA from the Federal Highway Administration, authorized by Congress in the 2005 federal surface transportation bill.

The Access to Destinations study examines access to jobs and other locations.
FY08 research project sampler

- **Analyzing traffic patterns**
The collapse of the I-35W bridge over the Mississippi River on August 1, 2007, sparked a number of research studies. In the weeks immediately following the collapse, David Levinson, the Braun/CTS Chair in Transportation Engineering, and three other researchers—civil engineering assistant professors Henry Liu and Nikolas Geroliminis and human factors researcher Kathleen Harder—received funding from the National Science Foundation's Small Grants for Exploratory Research program to study how metropolitan travel patterns respond to the sudden loss of a major transportation link. They found that traffic adapted well to the bridge collapse. Most drivers did not see a change in travel time after they chose alternative routes for their trips, but some saw an increase and a smaller number experienced a reduction in their travel time.

- **Building bridges more quickly**
Civil engineering researchers confirmed the durability and performance over time of a system for constructing bridges more quickly and with less impact on the environment. The project, sponsored by the Minnesota Department of Transportation, focused on systems that eliminate the need to place and remove formwork, thus accelerating on-site construction and improving safety. For the research, the University team—led by Professors Catherine French and Carol Shield—instrumented and monitored two Minnesota bridges. They also constructed and tested a two-span test bridge in the Structures Laboratory at the University of Minnesota. (The project received the 2008 CTS Research Partnership Award; see page 29.)

- **Studying the effects of alcohol**
Researchers in the HumanFIRST Program and the Intelligent Vehicle (IV) Lab collaborated to study the effects of alcohol on motorcyclists, taking advantage of the programs’ access to unique research facilities and expertise in monitoring driver performance. The IV Lab researchers, led by director Craig Shankwitz, instrumented a motorcycle that could be operated safely by a study subject while under the influence of alcohol. HumanFIRST researchers, including research fellows Janet Creaser and Michael (Mick) Rakauskas, conducted test sessions during which study participants either drank alcohol or were given a placebo. The analysis revealed that some impairment was evident in motorcycle riders at the .05 blood-alcohol level, below the .08 level used by law enforcement for drunk driving arrests. The research was funded by the National Highway Traffic Safety Administration. The HumanFIRST Program and the IV Lab are components of the Intelligent Transportation Systems (ITS) Institute, directed by Professor Max Donath.
Comparing urban and rural driving attitudes

HumanFIRST research sponsored by the Minnesota Local Road Research Board explored the differences in driving behavior and attitudes between urban and rural drivers. Research fellow Michael (Mick) Rakauskas and former director Nic Ward found that more rural drivers believe their risky driving behaviors—not wearing seat belts and driving after drinking—are not that dangerous compared to their urban counterparts. Moreover, rural drivers perceive lower value in government-sponsored traffic safety interventions than their urban counterparts.

Keeping road pollutants out of lakes and rivers

A research team developed a new procedure to assess the performance of underground storm water treatment devices. Funded by the Minnesota Local Road Research Board and the Twin Cities Metropolitan Council, researchers at the St. Anthony Falls Laboratory (SAFL) determined the sediment removal efficiency of several devices. SAFL director Omid Mohseni and co-investigator John Gulliver, professor of civil engineering, developed the new procedure during the research. The procedure was incorporated into the Minnesota Stormwater Best Management Practices (BMP) Performance Assessment Protocol through funding from the Minnesota Pollution Control Agency. In addition, the American Society for Testing and Materials (ASTM) International developed a new standard for testing hydrodynamic separators based on the research.
Deployment and implementation

Bringing home the facts of traffic fatalities
Researchers in the Center for Excellence in Rural Safety (CERS) mapped out every traffic-related fatality in the nation for 2006 with details on each death. Users can type in an address at SafeRoadMaps.org to see a map or satellite image of all of the road fatalities that have occurred in the area. Plus, users have the ability to narrow down their search to see the age of the driver, whether speeding or drinking was a factor, and if the driver was wearing a seat belt. The new tool, says CERS research director Tom Horan, also illustrates which life-saving public policies, such as strong seat belt laws, are in the chosen area. CERS, established by the 2005 federal transportation act, is a joint program between the State and Local Policy Program at the Hubert H. Humphrey Institute of Public Affairs and CTS.

Smoothing traffic flow
A system was implemented on 11 signals along busy France Avenue in Edina and Bloomington, Minnesota, that may one day allow traffic signals on arterial streets to adjust automatically based on traffic conditions. The system, called SMART-Signals (short for “Systematic Monitoring of Arterial Road Traffic Signals”), was developed by a team led by assistant civil engineering professor Henry Liu. The effort was funded by the ITS Institute and the Minnesota Local Road Research Board, with significant in-kind support from Hennepin County.
Designing technology to aid drivers
Driver-assistive technologies—including head-up displays, vibrating seats, and steering control developed by director Craig Shankwitz and research staff in the Intelligent Vehicles Laboratory—were installed in snowplows and buses. For example, three vehicles (and a fourth planned) have been deployed in Alaska, where high snowfall rates and dry, blowing snow routinely cause whiteout conditions and zero visibility. Two snowplows in St. Louis County, Minn., are also instrumented with the technologies.

Monitoring public spaces
The Department of Homeland Security and the Transportation Security Administration deployed a mass transit surveillance and early warning system developed by Professor Nikolaos Papanikolopoulos and program director Vassilios Morellas of the Department of Computer Science and Engineering. The system, in the Amtrak Station in Philadelphia, Penn., uses computer vision techniques to monitor activities. Papanikolopoulos is the director of SECTTRA (Security in Transportation Technology Research and Applications), a joint effort of the Department of Computer Science and Engineering and CTS.

Rating bridges
The Mn/DOT Bridge Office implemented a procedure and an associated computer program for ranking steel bridges with fatigue- or fracture-critical details. The procedure was developed during a research project led by Professor Art Schultz in the Department of Civil Engineering.

Research funds—and sources—have grown over time, a sign of the increased interest in addressing transportation challenges through research. In FY08, 45 diverse sources provided nearly $13.5 million for transportation research.
Major awards/grants received in FY08

Understanding the causes and costs of the collapse
The National Science Foundation (NSF) awarded a two-year, $300,000 grant to University of Minnesota researchers to study travel behavior changes after the collapse of the I-35W bridge in August 2007 and its reopening in September 2008. The research team consists of principal investigator Henry Liu, assistant professor in the Department of Civil Engineering (CE), and co-investigators David Levinson, Braun/CTS Chair in Transportation Engineering, and Kathleen Harder, research associate with the Center for Human Factors Systems Research and Design. The project is a continuation of their previous NSF Small Grants for Exploratory Research project (see page 6). CE assistant professor Nikolas Geroliminis is also involved with this new project, which will analyze how an extensive traffic system responds to a sudden, major network disruption.

The Minnesota Department of Transportation is also funding a project related to the bridge collapse. Using data collected from in-vehicle GPS units, David Levinson and other researchers are developing models of travel behavior before and after the bridge reopening. Using these models and observations of travel pattern changes, the researchers will attempt to estimate road-user costs associated with the collapse.

In addition, NSF funded a study of the structural factors that may have contributed to the collapse. The team includes civil engineering faculty Taichiro Okazaki, Roberto Ballarini, Art Schultz, and Ted Galambos.

Financing infrastructure investments
The state legislature appropriated funding to CTS to study the public policy implications of value capture, a transportation financing mechanism. Similar to the Reducing Greenhouse Gases study (see page 5), CTS has assembled an interdisciplinary research team for the investigation. Principal investigators are David Levinson, the Braun/CTS Chair in Transportation Engineering; Zhirong (Jerry) Zhao, assistant professor in the Humphrey Institute of Public Affairs; and Adeel Lari, research fellow in the Humphrey Institute. The team also includes Michael Iacono, a research fellow in the Department of Civil Engineering.
Reducing congestion
The Intelligent Transportation Systems (ITS) Institute received $5.3 million to help Minnesota Valley Transit Authority (MVTA) buses better navigate shoulder lanes using lane-guidance technology and improve traffic flow on Cedar Avenue (Trunk Highway 77) and I-35W. The money is part of a $133.3 million award to the state through the USDOT’s Urban Partnership Agreement program. Two units of the ITS Institute—the Intelligent Vehicles Lab, led by Craig Shankwitz, and the HumanFIRST Program, led by Mike Manser—are collaborating in the work. The IV Lab will deploy lane-guidance technology, which it had developed and tested in earlier research, on 10 MVTA buses. The HumanFIRST Program will help the MVTA procure and prepare a driver training simulator and develop the training protocol.

Another UPA research element is a study of telecommuting by Adeel Lari, research fellow with the Humphrey Institute of Public Affairs.

Collecting and archiving traffic data
CE assistant professor Henry Liu received $111,000 to extend his work on “SMART-Signal” technologies and algorithms for oversaturated signalized intersections. This research is drawing national attention for its promising new approach to collect and archive real-time traffic data on arterials (see page 8). The research is part of a $600,000 grant from the National Cooperative Highway Research Program to consultant Kimley-Horn.

Planning for disaster evacuation
Shashi Shekhar, a McKnight Distinguished University Professor of Computer Science, and Henry Liu, a civil engineering assistant professor, received a $450,000 grant from the National Science Foundation to investigate an interdisciplinary approach for “Spatio-Temporal Network Databases for Transportation Science.” The grant is to further research into scalable computational methods for determining routes, schedules, and traffic management plans for evacuating metropolitan areas. Shekhar’s research team previously completed a system to coordinate local emergency evacuation plans in multiple communities.

Designing better pavements
The University’s Pavement Research Institute (PRI) partnered with Mn/DOT, Applied Research Associates, and the University of California, Davis to attract $4 million from the second Strategic Highway Research Program (SHRP 2) to conduct a research study on composite pavement systems in Minnesota. Team members are PRI director Mike Darter, CE associate professors Lev Khazanovich and Mihai Marasteanu, and PRI associate director Derek Tompkins.
Research reports published in FY08

These reports are available in PDF format at www.cts.umn.edu/Publications/ResearchReports.

**Transportation and the Economy research**
- Local Road Funding History in Minnesota
  Barry Ryan, Thomas Stinson
  Mn/DOT 2007-26

- Transportation as Catalyst for Community Economic Development
  John S. Adams, Barbara J. VanDrasek
  CTS 07-07

**Transportation Safety and Traffic Flow research**
- Access to Destinations: Travel Time Estimation on Arterials
  Gary A. Davis, Hui Xiong
  Mn/DOT 2007-35

- Access to Destinations: Twin Cities Metro-wide Traffic Micro-simulation Feasibility Investigation
  John Hourdos, Panos Michalopoulos
  Mn/DOT 2008-15

- Benefit-Cost Analysis for Intersection Decision Support
  Mike Corbett, David M. Levinson, Xi Zou
  Mn/DOT 2007-32

- Cross Median Crashes: Identification and Countermeasures
  Gary A. Davis
  Mn/DOT 2008-17

- Developing Driving Support Systems to Mitigate Behavioral Risk Patterns Among Teen Drivers
  Shawn Brovold, Nic Ward, Max Donath, Stephen Simon
  CTS 07-05

- Driving Performance During 511 Information Retrieval: Cell Phone 2
  Mick Rakauskas, Nic Ward
  Mn/DOT 2007-48

- Employment of the Traffic Management Lab for the Evaluation and Improvement of Stratified Metering—Phase IV
  Henry Liu, Xinkai Wu, Panos Michalopoulos, John Hourdos
  Mn/DOT 2007-51

- Evaluation of Minnesota's Operation NightCAP Program
  Janet Creaser, William Affleje, Flavia Nardi
  Mn/DOT 2007-29

- Freeway Network Traffic Detection and Monitoring Incidents
  A. Joshi, Stefan Atev, D. Fehr, A. Drenner, Robert Bodor, Osama Masoud, Nikolaos P. Papakolopoulos
  Mn/DOT 2007-40

- Freight Performance Measure Systems (FPMS) System Evaluation and Data Analysis
  Chen-Fu Liao
  CTS 08-01

- Integration of Infrared Imaging for a Head Up Display Lane Keeping and Collision Avoidance System
  Pi-Ming Cheng, Craig Shankwitz
  CTS 08-09

- Intersection Decision Support Surveillance System: Design, Performance and Initial Driver Behavior Quantization
  Lee Alexander, Pi-Ming Cheng, Max Donath, Alec Gorjestani, Arvind Menon, Craig Shankwitz
  Mn/DOT 2007-30

- Intersection Decision Support: An Overview
  Max Donath, Craig Shankwitz, Nic Ward, Janet Creaser
  Mn/DOT 2007-33

- Multi-Camera Monitoring of Human Activities at Critical Transportation Infrastructure Sites
  Evan Ribnick, A. Joshi, Nikolaos P. Papakolopoulos
  CTS 08-08

- Review of Georgia's Rural Intersection Crashes: Application of Methodology for Identifying Intersections for Intersection Decision Support (IDS)
  Howard Preston, Richard Storm, Max Donath, Craig Shankwitz
  Mn/DOT 2007-28

- Review of Iowa's Rural Intersection Crashes: Application of Methodology for Identifying Intersections for Intersection Decision Support (IDS)
  Howard Preston, Richard Storm, Max Donath, Craig Shankwitz
  Mn/DOT 2007-27

- Rural and Urban Safety Cultures: Human-Centered Interventions Toward Zero Deaths in Rural Minnesota
  Mick Rakauskas, Nic Ward, Susan G. Gerberich, Bruce H. Alexander
  Mn/DOT 2007-41

- A Simulator-Based Evaluation of Smart Infrastructure Concepts for Intersection Decision Support for Rural Through-STOP Intersections
  Janet Creaser, Mick Rakauskas, Nic Ward, Jason Laberge
  Mn/DOT 2007-31

- Traffic Safety Methodologies
  Gary A. Davis
  CTS 07-11

- Using Archived ITS Data to Improve Transit Performance and Management
  Ahmed M. El-Geneidy, Jessica Horning, Kevin Krizek
  Mn/DOT 2007-44

**Transportation Infrastructure research**
  Iliya Yut, Shariq Husein, Carly Turgeon, Lev Khazanovich
  Mn/DOT 2007-23

- Automated Winter Road Maintenance Using Road Surface Condition Measurements
  Gurkan Erdogan, Lee Alexander, Piyush Agrawal, Rajesh Rajamani
  Mn/DOT 2007-37

- Cone Penetration Testing in Pavement Design
  William Dehler, Joseph F. Labuz
  Mn/DOT 2007-36

- Determination of Optimum Time for the Application of Surface Treatments to Asphalt Concrete Pavements—Phase II
  Mihai O. Marasteanu, Raul Velasquez, William Herb, John Tweet, Mugur Turos, Mark Watson, Heinz G. Stefan
  Mn/DOT 2008-16

- Development of Improved Test Rolling Methods for Roadway Embankment Construction
  J. P. Hambleton, Andrew Drescher
  Mn/DOT 2008-08

- Development of a PC-Based Eight-Channel WIM System
  Taek Mu Kwon, Bibhu Aryan
  Mn/DOT 2007-45

- Effects of Seasonal Changes on Ride Quality at MnROAD
  Lev Khazanovich, Peter Bly, Atika Shamin, Randal J. Barnes
  Mn/DOT 2008-23

- Implementation of Ground Penetrating Radar
  Yueqian Cao, Shongtao Dai, Joseph F. Labuz, John Panteles
  Mn/DOT 2007-34

- Incorporation of Fatigue Detail Classification of Steel Bridges into the Minnesota Department of Transportation Database
  Adam Y. Lindberg, Arturo E. Schultz
  Mn/DOT 2007-22
Generating royalties

A patent for a “virtual mirror” was granted to Professor Max Donath, Intelligent Vehicles Lab director Craig Shankwitz, and research staff Pi-Ming Cheng and Sameer Pardhy of the Department of Mechanical Engineering. The technology, originally developed to help bus drivers operate on narrow road shoulders, has also been applied on snowplows. The virtual mirror uses a lidar (laser-based) side-scanning unit to detect vehicles, which are then tracked by the onboard computer and displayed as icons on a small electronic panel display.
20 years...

70 faculty in 25 departments

www.cts.umn.edu/FacultyStaff
Researchers

CTS Faculty and Research Scholars Program

- CTS works with CTS Faculty and Research Scholars from a variety of University of Minnesota departments to address transportation issues. Scholars have joint appointments at CTS as well as in their own departments.

2008 Faculty and Research Scholars

Bridge Engineering

- Catherine French
  Professor, Civil Engineering

- Arturo Schultz
  Professor, Civil Engineering

- Carol Shield
  Professor, Civil Engineering

- Taek Kwon
  Professor, Electrical and Computer Engineering (Duluth)

- Chen-Fu Liao
  Educational Systems Manager, Minnesota Traffic Observatory, ITS Institute

- Vassilios Morellas
  Director, Safety, Security, and Rescue Research Center; Computer Science and Engineering

- Nikolaos Papanikolopoulos
  Professor, Computer Science and Engineering

Economics and Management

- Shashi Shekhar
  Professor, Computer Science and Engineering

- Saif Benjaafar
  Professor, Mechanical Engineering

- Karen Donohue
  Associate Professor; Operations and Management Sciences, Carlson School of Management

- Jerry Fruin
  Associate Professor, Applied Economics

- Diwakar Gupta
  Professor, Mechanical Engineering

- Robert Johns
  Director, Center for Transportation Studies

- Alfred Marcus
  Professor, Carlson School of Management

Human Factors

- Gerard McCullough
  Associate Professor, Applied Economics

- Zhirong (Jerry) Zhao
  Assistant Professor, Humphrey Institute of Public Affairs

- Karen Donohue
  Associate Professor, Operations and Management Sciences, Carlson School of Management

- Paul Bloom
  Professor, Soil, Water, and Climate

- John Gulliver
  Professor, Civil Engineering

- John Bloomfield
  Research Associate, Center for Human Factors Systems Research and Design, College of Design

- Kathleen Harder
  Senior Research Associate, Center for Human Factors Systems Research and Design, College of Design

- Michael Manser
  Director, HumanFIRST Program, ITS Institute

- Michael (Mick) Rakauskas
  Research Fellow, HumanFIRST Program, ITS Institute

- Andrew Drescher
  Professor, Civil Engineering

Data Systems

- Data Systems

- Economics and Management

- Environmental Impacts

- Pavement Engineering

- Human Factors
Four new faces with transportation experience were added to the University talent pool: Yingling Fan, assistant professor in the Humphrey Institute of Public Affairs; Nikolas Geroliminis, assistant professor in the Department of Civil Engineering; Keith Knapp, research manager with the Center for Excellence in Rural Safety; and Greg Lindsey, associate dean of the Humphrey Institute and professor in the urban and regional planning program.
Awards & Honors

- Access to Destinations study faculty David Levinson (the Braun/CTS Chair in Transportation Engineering) and Kevin Krizek (now with the University of Colorado, formerly with the Humphrey Institute of Public Affairs) co-authored their first book, Planning for Place and Plexus. The book aims to take many of the ideas emerging from recent research beyond the university classroom and into contemporary policy discussions.
- Assistant Professor Henry Liu of the Department of Civil Engineering was the recipient of the 2007 New Faculty Award from the Council of University Transportation Centers and the American Road and Transportation Builders Association.
- Professor Rajesh Rajamani of the Department of Mechanical Engineering received the Ralph R. Teeter Award from the Society of Automotive Engineers for contributions to automotive research and education.
- Elizabeth Wilson, assistant professor at the Humphrey Institute, was a recipient of a 2008 McKnight Land-Grant Professorship.

Affiliated Faculty

Aerospace Engineering and Mechanics
- Demoz Gebre-Egziabher
- William Garrard
- Yiyuan Zhao

Agronomy and Plant Genetics
- Roger Becker
- Nancy Ehike
- Donald Wyse

Applied Economics
- Jerry Fruin
- William Gartner
- Gerard McCullough
- Tom Stinson
- Douglas Tiffany

Civil Engineering
- Albert Yonas
- Herbert Pick
- Robert Bryson
- Shashi Shekhar

College of Design
- John Bloomfield
- John Carmony
- Lance Neckar
- Robert Sykes
- Mary Vogel

Computer Science and Engineering
- Mats Heimdahl
- Vassilios Morellas
- Nikolaos Papanikolopoulos
- Shashi Shekhar
- Richard Voyles

Economics
- Patrick Bajari

Electrical and Computer Engineering
- Vladimir Cherkassky
- Ahmed Tewfik

Environmental Science
- Craig Stedinger

Geography
- Francis Harvey
- Rod Squires
- Barbara Van Drasek

Horticulture Science
- Susan Galatowitsch

Humphrey Institute of Public Affairs
- John Adams
- Richard Bolan
- John Bryson
- Jason Cao
- Barbara Crosby
- Frank Douma
- Yingling Fan
- Tom Horan
- Keith Knapp
- Adeel Lari
- Barbara Lukermann
- Lee Plunnich
- Carissa Schively Slotterback
- Melissa Stone
- Elizabeth Wilson
- Zhirong (Jerry) Zhao

Kinesiology
- Mary Jo Kane
- Thomas Smith
- Michael Wade

Law School
- Stephen Simon

Mechanical Engineering
- Lee Alexander
- Saffahal Benjaafar
- Pi-Ming Cheng
- Janet Creaser
- Max Donath
- William Durfee
- Peter Easterlund
- Alec Gorjestani
- Diwakar Gupta
- David Kittelson
- Perry Li

Michael Manser

Plant Biology
- David Biesboer
- Iris Charvat

Public Health
- Judith Garrard

St. Anthony Falls Laboratory
- Jeff Marr
- Omid Mohseni
- Peter Weiss

Soil, Water and Climate
- Paul Bloom
- Peter Graham
- Satish Gupta
- Thomas Halbach
- Mark Seeley
- Dong Wang

Urban and Regional Affairs
- William Craig
- Thomas Scott

Wood and Paper Science
- Bob Seavey

University of Minnesota – Duluth

Chemistry and Biochemistry
- John Evans

Civil Engineering
- Eil Kwon

Computer Science
- Carolyn Crouch
- Donald Crouch
- Richard Maclin
- Peter Willensen

Electrical and Computer Engineering
- Stanley Burns
- Mohammed Hasan
- Taek Kwon
- Hua Tang
- Jiann-Shiou Yang

Geography
- Stacey Stark

Mathematics and Statistics
- Zhaungri Liu
- Harlan Steech

Mechanical/Industrial Engineering
- Robert Feyen
- Richard Lindeke
- Ryan Rosandich
- David Wyrick
- Xun Yu

Natural Resources Research Institute (NRRI)
- Brian Brashaw
- Kurt Johnson
- Ron Moen
- Gary Niemi
- Lawrence Zanko

Physics
- Michael Sydor

*denotes CTS Faculty and Research Scholars as of December 1, 2008
20 years...

12,000 students
(FY08, approx.)

www.cts.umn.edu/Education
K-12

- **Creating high school curricula**
  Pre-college students are being exposed to transportation engineering issues through an online intersection control game aimed at high school science classrooms. The game was integrated into a high school curriculum that was used and tested at the University of Minnesota’s Institute of Technology Summer Exploration in Engineering, Science and Math Camp. The camp, for women and diverse students, was held in the summer of 2008. The game was created by Chen-Fu Liao, the senior educational systems engineer with the Minnesota Traffic Observatory (a lab within the ITS Institute).

- **Sparking interest in transportation careers**
  A prototype narrow commuter vehicle being developed by University of Minnesota researchers with ITS Institute funding proved a popular attraction at the University’s Institute of Technology Alumni Society annual TechFest. The event, which aims to interest grade-school-age students in science and technology, is held every year at The Works, a “hands-on” science and technology museum for children aged 5 to 15. This year’s event drew more than 1,000 visitors—the largest one-day attendance in the museum’s history. Lee Alexander, a member of the team of engineers developing the vehicle, accompanied the prototype and explained the vehicle’s cutting-edge features to children and their parents.

- **Hosting teachers and potential students**
  Several groups visited the University to learn about careers in transportation and see demos of current research technologies, including approximately 75 high school students enrolled in a summer transportation camp through the Fond du Lac Tribal and Community College; students and teachers from the Blaine High School Center for Engineering, Math, and Science; and students in the St. Cloud Summer Transportation Academy.
Undergraduate and graduate students

- **Developing course modules**
  Chen-Fu Liao, the Minnesota Traffic Observatory’s senior educational systems engineer, developed several interactive course modules to help students understand complex ITS topics such as intersection signal control and vehicle guidance. The Online Application for Signal Intersection Simulation (OASIS) and Roadway Online Application for Design (ROAD) have been incorporated into the curriculum of the civil engineering department’s Introduction to Transportation Engineering course.

- **Strengthening undergraduate courses**
  Assistant Professor Henry Liu, Braun/CTS Chair David Levinson, and Chen-Fu Liao were funded by the National Science Foundation (NSF) to develop Web-based simulation modules to improve instruction in the Introduction to Transportation Engineering course that is a standard part of undergraduate civil engineering programs. The modules will be evaluated and tested in course offerings from civil engineering programs across the country and will be disseminated to the general public through interactive exhibits at venues such as the Minnesota Transportation Museum and the Minnesota State Fair.

### Graduate Certificate in Transportation Studies

**FY08 Recipients**

<table>
<thead>
<tr>
<th>William Chester</th>
<th>Thomas More</th>
<th>Xinkai Wu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rubeen Collins</td>
<td>Pavithra Kandadai</td>
<td>Feng Xie</td>
</tr>
<tr>
<td>Jose Fischer</td>
<td>Parthasarathi</td>
<td>Hui Xiong</td>
</tr>
<tr>
<td>Cole Hiniker</td>
<td>Andrew Schlack</td>
<td>Hongbing Zhang</td>
</tr>
<tr>
<td>Jessica Horning</td>
<td>HunWen Tao</td>
<td>Shanjiang Zhu</td>
</tr>
<tr>
<td>Yan Huang</td>
<td>Nebyiyou Tilahun</td>
<td></td>
</tr>
<tr>
<td>David Kmiec</td>
<td>Ryan Wilson</td>
<td></td>
</tr>
</tbody>
</table>

### Travel Awards

**ITS Institute Student Travel Award Recipients**

- Adam Danczyk
- Jordan Deckenbach
- Chinweike Eseonu-Fall
- Saif Jabari
- Wenteng Ma
- Parthasarathi
- Jory Schwach
- Nebyiyou Tilahun
- Carly Turgeon
- Ryan Wilson
- Xinkai Wu
- Feng Xie
- Zhiqiang Xing
- Hui Xiong
- Kelcie Young
- Shanjiang Zhu

**CTS Travel Award Recipients**

- Anil Singh Bika
- Fay Cleveland
- James Hambleton
- Jessica Horning
- Thomas More
- Roberto Piccinin
- Bereket Tewoldebrhan
- Mugur Turos

---

Research universities provide two resources crucial for today’s global economy: new knowledge and a pool of educated professionals.
STUDENT AWARDS

› ITS Institute Student of the Year:
  Michael (Mick) Rakauskas, a doctoral student in the University of Minnesota’s Cognitive and Biological Psychology program, was presented the ITS Institute’s 2007 Outstanding Student of the Year Award. The award is sponsored by the USDOT Research and Innovative Technology Administration.

› Huber Award: Nebiyou Tilahun, a student in the University’s civil engineering Ph.D. program under Braun/CTS Chair David Levinson, was one of two recipients of this year’s Matthew J. Huber Award for Excellence in Transportation Research and Education. Tilahun’s work on the value of different features of bicycle facilities, which made up his master’s thesis, was incorporated into National Cooperative Highway Research Program (NCHRP) report 552, Guidelines for Analysis of Investments in Bicycle Facilities.

  The other Huber winner this year was Raul Velasquez, who is also working toward his Ph.D. in civil engineering, under advisor Mihai Marasteanu. Velasquez has worked as a research assistant on many projects related to pavement engineering and pavement design and was a teaching assistant in civil engineering classes.

INTERDISCIPLINARY TRANSPORTATION STUDENT ORGANIZATION, CAREER EXPO

› CTS assisted the Interdisciplinary Transportation Student Organization in planning its Fourth Annual Student Paper Conference. The conference concluded with a luncheon sponsored by the North Central chapter of the Institute of Transportation Engineers, during which guest speakers discussed speed management in Minnesota. The annual CTS Transportation Career expo followed the conference.
FY08 CTS STUDENT AFFILIATES AND ADVISORS

UNDERGRADUATE STUDENTS
Lucas Andrulyk, BS, Wood Science, Iowa State (Brian Brashaw)
Emma Burgstahler, BS, Biomedical Engineering (William Durfee)
Brian Bell, BS, Civil Engineering (Omrid Mohseni)
Ryan Bowlds, BS, Mechanical and Industrial Engineering–UMD (Xun Yu)
Russell Delpydt, BS, Bioprocesses and Biosystems Engineering (John Nieber)
Nicole Dobmeier, BA, Statistics–Morris (Stephen Burks)
David Fick, BS, Biosystems Engineering (Jonathan Chaplin)
Derek Ganzhorn, BS, Economics–Morris (Stephen Burks)
Missy Gettel, BS, Civil Engineering (John Gulliver)
Angie Graham, BS, Bioprocesses and Biosystems Engineering (John Nieber)
Tegan Gulliver, BS, Civil Engineering (John Gulliver; Omrid Mohseni)
Baily Jones, BA, Liberal Arts (Frank Douma)
Cathie Joyce, BS, Mechanical Engineering (William Durfee)
Dave Klaseus, BS, Civil Engineering (Cathy French)
Geoffrey Kramer, BS, Bioprocesses and Biosystems Engineering (Bruce Wilson)
Jacob Krakum, BS, Industrial and Mechanical Engineering–UMD (Brian Brashaw)
Lisa Lenzmeier, BS, Economics–Morris (Stephen Burks)
Michael Levin, BS, Computer Science and Engineering (Vassilios Morellas)
Erik Lindholm, BS, Economics–Morris (Stephen Burks)
Grant Miller, BS, Computer Science and Engineering (Vassilios Morellas)
Nick Moore, BS, Bioprocesses and Biosystems Engineering (John Nieber)
Sarah Noe, BS, Civil Engineering (Cathy French)
Jason Novek, BS, Computer Science–UMD (Carolyn Crouch)
Michele Olson, BS, Computer Science–UMD (Peter Willemse)
Nicholas Olson, BS, Civil Engineering (John Gulliver)
Greta Schnalle, BS, Civil Engineering (John Gulliver)
Daniel Schobert, BS, Computer Science–UMD (Peter Willemse)
Jeffrey Sharkey, BS, Computer Science–UMD (Donald Crouch)
Matthew Verreaux, BS, Electrical and Computer Engineering–UMD (Brian Brashaw)
Chris Waynant, BS, Civil Engineering (Julian Marshall)

MASTER’S STUDENTS
Eddie Arpin, MS, Mechanical Engineering (Max Donath, Craig Shankwitz)
Bibhu Aryal, MS, Electrical and Computer Engineering–UMD (Taek Kwon)
Brian Ashman, MS, Bioprocesses and Biosystems Engineering (Bruce Wilson)
Prashita Bholekar, MS, Computer Science–UMD (Donald Crouch)
Esha Bhardwaj, MS, Mechanical Engineering (Janet Creaser)
Sundeep Bhimireddy, MS, Civil Engineering (Henry Liu)
Peter Bly, MS, Civil Engineering (Lev Khazanovich)
Sara Brekken, MPP, Humphrey Institute (Frank Douma)
Nihidi Chadda, MPP, Humphrey Institute (Frank Douma)

Haorong Chang, MS, Electrical and Computer Engineering (Hua Tung)
Fay Cleaveland, MURP, Humphrey Institute (Frank Douma)
Ajit Datar, MS, Computer Science–UMD (Donald Crouch)
Adam Danczyk, MS, Civil Engineering (Henry Liu)
Jordan Deckenbach, MPP/JD, Humphrey Institute and Ohio State (Frank Douma, Stephen Simon)
Greg DeGroot, MS, Civil Engineering (John Gulliver)
William Dehler, MS, Civil Engineering (Joseph Labuz)
Siddharth Deokar, MS, Computer Science–UMD (Peter Willemse)
Ozer Dereli, MS, Civil Engineering (Carol Shield, Cathy French)
Daniel Drew, MS, Mechanical Engineering (Janet Creaser)
Whitney Eriksson, MS, Civil Engineering (Carol Shield, Cathy French)
Chinmoy Esoen, MS, Engineering Management (Robert Feyen)
Brian Finstrom, MS, Chemistry and Biochemistry–UMD (John Evans)
Ryan Gaug, MURP, Humphrey Institute (Frank Douma)
Aaron Hagar, MURP, Humphrey Institute (Frank Douma)
Kyle Hoehn, MS, Civil Engineering (Lev Khazanovich)
Richard Hoglund, MS, Mechanical Engineering (Max Donath, Craig Shankwitz, Janet Creaser)
Feili Hong, MS, Civil Engineering (John Houriadou)
Shan Hu, MS, Mechanical and Industrial Engineering–UMD (Xun Yu)
Basil Iannone, MS, Horticultural Science (Susan Galatowitsch)
Priya S. Iyer, MS, Electrical Engineering (Chen-Fu Liao)
Saff Jabari, MS, Civil Engineering (Henry Liu)
Rachel Jordan, MURP, Humphrey Institute (Jason Cao)
Apeckshya Karki, MURP, Humphrey Institute (Frank Douma)
H. Katmale, MS, Engineering Management–UMD (Richard Lindeke)
Scott Klar, MS, Electrical and Computer Engineering–UMD (Taek Kwon)
Kate Ko, MURP, Humphrey Institute (Frank Douma)
Nikhil Krishnan, MS, Electrical and Computer Engineering (Ahmed Tewfik)
Dustin Kuchera, MS, Industrial and Systems Engineering (Diwakar Gupta)
Harish Loganathan, MS, Civil Engineering (Henry Liu)
E. Magisson, MS, Bioprocesses and Biosystems Engineering (Jonathan Chaplin)
Jason Menard, MA, Anthropology (Francis Harvey)
Katie Meyer, MPP, Humphrey Institute (Elizabeth Wilson)
Ki Hoon Moon, MS, Civil Engineering (Mihai Marasteanu)
Alec Moore, MPP, Humphrey Institute and Civil Engineering (Frank Douma)
Ginger Murphy, MURP, Humphrey Institute (Jason Cao)
Peter Nussbaum, MPP, Humphrey Institute (Elizabeth Wilson)
Tyler Patterson, MPP/MS, Humphrey Institute and Civil Engineering (Frank Douma)
Any Peterson, MS, Industrial and Systems Engineering (Diwakar Gupta)
Aditya Palometta, MS, Computer Science–UMD (Carolyn Crouch)
Reid Pulley, MS, Bioprocesses and Agricultural Engineering (Jonathan Chaplin)
Charles Roberts, MURP, Humphrey Institute (Carissa Schiely, Sloterback, Frank Douma)
Ryan Rohde, MS, Civil Engineering (Lev Khazanovich)
Kate Roth, MURP, Humphrey Institute (Frank Douma)
Brian Runzel, MS, Civil Engineering (Cathy French)
David Sadowski, MS, Civil Engineering (John Gulliver; Omrid Mohseni)
Andrew Sander, MS, Civil Engineering (Heinz G. Stefan)
Annika Schilke, MURP, Humphrey Institute (Jason Cao)
Matthew Schmitt, MURP, Humphrey Institute (Frank Douma)
Jory Schwach, MS, Civil Engineering (Panos Michalopoulos)
Atiko Shamim, MS, Civil Engineering (Lev Khazanovich)
Matt Smith, MS, Civil Engineering (Carol Shield, Cathy French)
HunWen Tao, MS, Civil Engineering (Gary Davis)
Bereket Teweldebrhan, MS, Civil Engineering (Lev Khazanovich)
Luke Thompson, MS, Civil Engineering (Joe Labuz)
Hoang Ton, MURP, Humphrey Institute (Frank Douma)
Mugurel Turos, MS, Civil Engineering (Mihai Marasteanu)
Kirti Vardhan Das, MPP, Humphrey Institute (Zhirong Zhao)
Madjivan Vasudervan, MS, Electrical and Computer Engineering (Ahmed Tewfik)
R Verma, MS, Engineering Management (Richard Lindeke)
Ashwarya Viyakumar, MS, Civil Engineering (Mihai Marasteanu)
Mark Watson, MS, Civil Engineering (Mihai Marasteanu)
Ryan Weidemann, MS, Electrical and Computer Engineering–UMD (Taek Kwon)
Ryan Wilson, MS/MURP, Humphrey Institute (Elizabeth Wilson, Kevin Krikel, David Levinson)
Linao Wang, MS, Applied Economics (Jerry Fruin)
Kalie Young, MURP, Humphrey Institute (Frank Douma)
Hui Xiang, MS, Civil Engineering (Gary Davis)
Hongbing Zhang, MS, Civil Engineering (Panos Michalopoulos)
Yi Zheng, MS, Electrical and Computer Engineering–UMD (Hua Tung)

DOCTORAL STUDENTS
Romeo Alhade, Ph.D., Aerospace Engineering and Mechanics (Diwakar Gupta)
Stefan Atev, Ph.D., Computer Science and Engineering (Vassilios Morellas)
Elena Beyhout, Ph.D., Soil, Water, and Climate (Peter Graham)
Adam Boies, Ph.D., Mechanical Engineering (David Kettleman)
Tyejian Cao, Ph.D., Civil Engineering (Bojan Guzina)
Hao-Wei Chen, Ph.D., Industrial and Systems Engineering (Diwakar Gupta)
Gurkan Erdogan, Ph.D., Mechanical Engineering (Ahmed Tewfik)
Hao-Wei Chen, Ph.D., Soil, Water, and Climate (Diwakar Gupta)
Duc Fehr, Ph.D., Computer Science and Engineering (Nikos Papanikolopoulos)
James Hambleton, Ph.D., Civil Engineering (Andrew Drescher)
Xiaozheng He, Ph.D., Civil Engineering (Henry Liu)
Heng Hu, Ph.D., Civil Engineering (Henry Liu)
Professional development

Linking alumni and students
CTS created a database of University of Minnesota transportation alumni who want to stay in touch with their alma mater and with each other. By joining the Transportation Alumni Group, members receive electronic updates about student activities, special events, and other transportation-related news at the University. Graduates of other institutions are welcome to join. Joining also gives alumni a way to support current students by becoming a mentor or speaking to student groups.

Providing lifelong learning
CTS launched its Fall Transportation Seminar Series in September 2007. The series combines the following:
- CTS Research Seminars, held as part of CTS research council meetings.
- Advanced Transportation Technologies Seminars, sponsored by the Intelligent Transportation Systems (ITS) Institute each fall semester. (The seminars are offered for credit and are required as a course for the Graduate Certificate in Transportation Studies.)
- Access to Destinations Study workshops, communicating findings of this interdisciplinary research effort.

Each seminar qualifies for one professional development hour (PDH). Seminars are broadcast live on the Web and are available for later viewing.

Educating the workforce
Technical assistance and customized training courses continue to be an important part of CTS. Professional development hours (PDHs) are offered at a number of events, workshops, and seminars.

The Minnesota Local Technical Assistance Program (LTAP) offered workshops on topics ranging from seal coat operations to bridge maintenance. Fifteen students graduated from LTAP’s Roads Scholar program, which has an enrollment of more than 1,800 students. The Circuit Training and Assistance Program (CTAP) delivered technical assistance and training to 2,964 state and local agency personnel in two topic areas: work-zone traffic control and flagger safety, and snow and ice material applications/environmental impacts.

CTS managed a number of customized training courses for Mn/DOT. Topics included advanced skills for project managers, context-sensitive design, and “hear every voice” public participation.
20 years...

22,000 newsletters (mailed in FY08, approx.)

www.cts.umn.edu/Events
www.cts.umn.edu/Publications
www.cts.umn.edu/LibraryServices
CTS 20th Anniversary Celebration

CTS celebrated its 20th Anniversary in October 2007 with a special half-day forum and reception. CTS director Robert Johns gave a brief timeline of CTS. (To download the timeline, see www.cts.umn.edu/About/History.)

Johns then introduced Genevieve Giuliano, who gave the event’s keynote presentation. Giuliano, a former chair of the Transportation Research Board Executive Committee, is a professor in the School of Policy, Planning, and Development and a senior associate dean for research and technology at the University of Southern California. She shared her outlook for the future of transportation research, predicting that dramatic changes under way in the policy environment may make it harder for research to shape transportation policy in the future.

Following the keynote, two University of Minnesota faculty panels reviewed how the University has contributed to state and national transportation issues in the past two decades and suggested future research possibilities.

The celebration concluded with a reception and program moderated by CTS associate director Laurie McGinnis. A highlight was the debut of a video that introduces CTS and its programs. The video is available on the CTS Web site.

Access to Destinations Conference

CTS sponsored the Second International Access to Destinations Conference on August 23 and 24, 2007. It brought together leading researchers from 10 countries whose work examines intersections of transportation, land use, and public policy. Speakers included David Levinson and Kevin Krizek, who lead the Access to Destinations study (see page 5). Thirty-five papers were presented and published in a proceedings; the document was downloaded more than 4,500 times from the study Web site.

Pictured at left: A faculty panel at the 20th anniversary—Mary Vogel, John Adams, Lee Munnich, and Gary Davis

The seventh Oberstar Forum, held on April 7, 2008, addressed potential directions for the next authorization of the federal transportation act, which is set to expire in 2009. The forum used as one source of information the report *Transportation for Tomorrow*, created by the National Surface Transportation Policy and Revenue Study Commission. The report recommends dramatic institutional reform and revamping of federal transportation programs and policy. U.S. Rep. Tim Walz was one of the forum speakers.

### Other transportation events

**July 2007**
- Center for Excellence in Rural Safety second Summer Institute

**September 2007**
- Toward Zero Deaths Conference

**October 2007**
- Fourth annual Airport Technical Assistance Program (AirTAP) Fall Forum

**November 2007**
- 11th Annual Freight and Logistics Symposium

**February 2008**
- CTS Winter Luncheon, featuring Ronald Medford, National Highway Traffic Safety Administration
- 12th Annual Minnesota Pavement Conference

**April 2008**
- Minnesota Spring Maintenance Training Expo

**May 2008**
- CTS 19th Annual Transportation Research Conference, with opening speaker David Horner, U.S. Department of Transportation, and the CTS Spring Luncheon, featuring Stephen Schneider, Stanford University

### Policy seminars

CTS continued to serve as an information resource for legislators and local elected officials. In January, a workshop was held for city and county elected officials on transportation finance. In June, CTS conducted a workshop for legislators and legislative staff that featured the results of the Greenhouse Gas study.
Digital resources

A new Web-based academic journal, *Journal of Transport and Land Use*, was initiated by David Levinson (Braun/CTS Chair) and Kevin J. Krizek (former faculty with the Humphrey Institute of Public Affairs). The journal includes work from the fields of engineering, planning, modeling, behavior, economics, geography, regional science, sociology, architecture and design, network science, and complex systems.

CTS expanded its offering of webinars to include all CTS, ITS Institute, Greenhouse Gas study, and Access to Destinations study seminars. One seminar, featuring research manager Keith Knapp of the Center for Excellence in Rural Safety, attracted more than 60 online participants, representing at least a dozen state DOTs.

CTS completed a major redesign of the LTAP Web site and developed Web sites for the Minnesota Traffic Observatory, the HumanFIRST Program, and the Intelligent Vehicles Laboratory. New features were added to the CTS Web site: the capability to search for research projects by topic area; a “Meet a Researcher” feature on the Research page; CTS capabilities and expertise in the “About CTS” section; and CTS non-research projects.

The Center for Excellence in Rural Safety, directed by Lee Munnich, and CTS were asked by the USDOT to develop and host a national Rural Highway Safety Clearinghouse Web site. Deputy Secretary Thomas Barrett participated in a media event to announce the site.
Awards and Participants

20 years...

675 council and committee volunteers

www.cts.umn.edu/About
Annual CTS awards

CTS presented the following awards at its Annual Meeting and Awards Luncheon on April 24 in Minneapolis.

**Richard P. Braun Distinguished Service Award:** Randy Halvorson, senior associate with Cambridge Systematics and former division director for program management at Mn/DOT

**Ray L. Lappegard Distinguished Service Award:** Connie Kozlak, systems planning and programming manager for the Metropolitan Council and chair of the CTS Transportation Planning and the Environment Council

**William K. Smith Distinguished ServiceAward:** Cathy Petersen, principal for CJ Petersen & Associates, a research, training, and consulting firm, and the author of three books on international trade

**Distinguished Public Leadership Award:** Fred Corrigan, executive director of the Aggregate & Ready Mix Association of Minnesota and chair of the CTS Executive Committee

**CTS Research Partnership Award**

A system for constructing bridges more quickly and with less impact on the environment garnered the 2008 CTS Research Partnership Award. The project—“Full-Depth Precast Concrete Bridge Deck System”— was sponsored by Mn/DOT. It focused on systems that eliminate the need to place and remove formwork, thus accelerating on-site construction and improving safety.

The partnership resulted in a new system that Mn/DOT can use in place of traditional cast-in-place slab superstructures. Thanks to the project, 5 more of these bridges have been constructed in Minnesota, and 11 are in the planning stage. In addition, Mn/DOT has presented the lessons learned from the project at workshops and to the Federal Highway Administration, and the Wisconsin DOT is using the system to build a bridge.

Project partners:
- University of Minnesota Department of Civil Engineering: Carol Shield, Cathy French, Matthew Smith, Charles Bell II (now with Opus)
- Mn/DOT Bridge Office: Dan Dorgan, Kevin Western, Erik Wolhowe, Paul Kivisto, Keith Molnau, Steve Ellis, Joe Fishbein, Kevin Hagen (now with Earth Tech), Jeff Erickson (now with Minnesota DNR)
- Mn/DOT Construction: Steve Kordosky, Jennifer Read
- Mn/DOT Research Services: Alan Rindels
- Federal Highway Administration: Romeo Garcia
- County Prestress: Don Hall, Don Lowe
- Lunda Construction: Dennis Behnke

Pictured left: Charles Bell, Paul Kivisto, Kevin Western, Kevin Hagen, Keith Molnau, Matthew Smith, Don Hall, Erik Wolhowe, Catherine French, Alan Rindels, and Linda Preisen
Awards and Participants

**CTS Executive Committee**

**Chair:** Fred Corrigan  
Executive Director, Aggregate & Ready Mix Association

**Andy Furco**  
Associate for Public Engagement, University of Minnesota

**Robert Kudrle**  
Professor, Humphrey Institute of Public Affairs, University of Minnesota

**Khani Sahebjam**  
Deputy Commissioner, Mn/DOT

**Debra R. Brisk**  
Transportation Program Manager, HDR Engineering, Inc.

**Jeff Hamiel**  
Executive Director, Metropolitan Airports Commission

**Larry Lair**  
General Manager, 3M Traffic Safety Systems Division

**Tom Sorel**  
Commissioner, Minnesota Department of Transportation

**Duane Crandall**  
Retired, AAA Minnesota

**Ronald Have**  
President, Freightmaster, Inc.

**Brian J. Lamb**  
General Manager, Metro Transit

**Richard Thomas**  
Director of Government Relations, Ames Construction

**Sen. D. Scott Dibble**  
Minnesota Senate

**James Hovland,**  
Mayor, City of Edina

**Colleen Landkamer**  
Commissioner, Blue Earth County

**Mary Hill Smith**  
District 3, Metropolitan Council

**Douglas Differt**  
Director of Engineering Development, URS

**Michael R. Huber,**  
Cardiovascular Health Consultant, BlueCross BlueShield of Minnesota

**Sen. Keith Langseth**  
Minnesota Senate

**Douglas Weiszhaar**  
Vice President for Special Projects, WSB & Associates, Inc.

**Rep. Ron Erhardt**  
Minnesota House of Representatives

**Robert Jones**  
Senior Vice President, System Academic Administration, University of Minnesota

**R. Timothy Mulcahy**  
Vice President for Research, University of Minnesota

**Donn Wiski**  
Transportation Advisory Board, Metropolitan Council

**Jim Erkel**  
Attorney and Program Director, Minnesota Center for Environmental Advocacy

**Linda Koblick**  
Commissioner, Hennepin County

**Richard Murphy Jr.**  
Murphy Warehouse Company

**Charles Zelle**  
CEO/President, Jefferson Lines

**Tom Fisher**  
Professor, College of Design, University of Minnesota

**Rick Krueger**  
Executive Director, Minnesota Transportation Alliance

**Left during FY08:**

Lisa Freese, Deputy Commissioner, Mn/DOT  
Carol Molnau, Commissioner, Mn/DOT
CTS Board of Advisors

Fred Beier, University of Minnesota (retired)
Bob Benke, Community Resource Partnerships, Inc.
Richard Braun, RPB
Carol Bufton, Minnesota Safety Council
Lyndon Carlson, Minnesota State Representative
Jim Denn, Former Mn/DOT Commissioner
Gary Eikaas, Dedicated Logistics, Inc.
Peter Fausch, SRF Consulting Group, Inc.
Carol Flynn, Value Pricing Advisory Task Force
David Frick, Minnesota Association of Townships
Bill Goins, Federal Express
John Gulliver, Civil Engineering, University of Minnesota
Randy Halvorson, Cambridge Systematics
John Hausladen, Minnesota Trucking Association
Ann Johnson, Professional Engineering Services
Curtis Johnson, Citistates Group
Rep. Bernie Lieder, Minnesota House of Representatives
Ronald Lifson, LDI Fibres, Inc.
Barbara Lukermann, Humphrey Institute of Public Affairs, University of Minnesota
Vince Magnuson, University of Minnesota Duluth
Marcia Marcoux, Rochester City Council
Jim Newland, Mn/DOT (retired)
Marthand Nookala, Hennepin County
Elliott Perovich, Anoka County
John Rodeberg, SEH
Bob Sands, Jacobs, Edwards, and Kelcey
Lea Schuster, Transit for Livable Communities

Thomas Scott, Center for Urban and Regional Affairs, University of Minnesota
Michael Sheehan, Olmsted County
Chuck Siggeurud, SEH (retired)
Jim Solem, Metropolitan Council (retired)
Richard Stehr, HNTB Corporation
Elwyn Tinklenberg, The Tinklenberg Group
Sandra Vargas, Hennepin County
Tom Weaver, Metropolitan Council
Matthew Zeller, Concrete Paving Association of Minnesota
Charleen Zimmer, ZAN Associates

Council Coordinating Committee
Chair: Douglas Weiszhaar, WSB & Associates, Inc.
Bernard Arsenau, Mn/DOT
Ken Buckeye, Mn/DOT
Connie Kozlak, Metropolitan Council
Michael Sheehan, Olmsted County
Shannon Tyree, City of St. Paul

Transportation and the Economy Council
Chair: Ken Buckeye, Mn/DOT
John Adams, Humphrey Institute of Public Affairs, University of Minnesota
Rabinder Bains, Mn/DOT
Deanna Belden, Mn/DOT
Mark Berndt, Wilbur Smith Associates
David Christianson, Mn/DOT
William Craig, Center for Urban and Regional Affairs, University of Minnesota
John Dean, SRF Consulting Group, Inc.
Karen Donohue, Carlson School of Management, University of Minnesota
Stephanie Eiler, CH2M Hill
Norman Foster, Minnesota Department of Finance
Jerry Fruin, Applied Economics, University of Minnesota
Bob Gale, Mn/DOT
William Gardner, Mn/DOT
Kate Garwood, Anoka County Highway Department
David Levinson, Civil Engineering, University of Minnesota
Alfred Marcus, Carlson School of Management, University of Minnesota
Gerard McCullough, Applied Economics, University of Minnesota
Lee Munnich, Humphrey Institute of Public Affairs, University of Minnesota
Betsy Parker, Mn/DOT
Perry Plank
Raymond Rought, Mn/DOT
Thomas Scott, Center for Urban and Regional Affairs, University of Minnesota
Jerry Zhao, Humphrey Institute of Public Affairs, University of Minnesota

Transportation Safety and Traffic Flow Council
Chair: Bernard Arsenau, Mn/DOT
John Bloomfield, College of Design, University of Minnesota
Dharam Boba, Hennepin County
Gary Davis, Civil Engineering, University of Minnesota
Max Donath, ITS Institute, University of Minnesota
Dave Engstrom, Mn/DOT
Nikolas Geroliminis, Civil Engineering, University of Minnesota
Susan Groth, Mn/DOT
Kathleen Harder, College of Design, University of Minnesota
John Hourdou, Civil Engineering, University of Minnesota
Amr Jabr, Mn/DOT
Keith Knapp, Humphrey Institute of Public Affairs, University of Minnesota
Dave Kopacz, Federal Highway Administration
James Krang, Mn/DOT
Eli Kwon, Civil Engineering, University of Minnesota
Taek Kwon, Electrical and Computer Engineering, University of Minnesota Duluth
Henry Liu, Civil Engineering, University of Minnesota
Michael Manser, HumanFIRST Program, University of Minnesota
James McCarthy, Federal Highway Administration
Panos Michalopoulos, Civil Engineering, University of Minnesota
Durga Panda, Image Sensing Systems, Inc.
Nikolaos Papanikolopoulos, Computer Science and Engineering, University of Minnesota
Howard Preston, CH2M Hill
Rajesh Rajamani, Mechanical Engineering, University of Minnesota
Steve Ruegg, PB Americas, Inc.
Bob Sands, Jacobs, Edwards, and Kelcey
Brian Scott, SRF Consulting Group, Inc.
Craig Shankwitz, Mechanical Engineering, University of Minnesota
Shashi Shekhar, Computer Science and Engineering, University of Minnesota
Al Smith, Minnesota State Patrol
Ray Starr, Mn/DOT
Daryl Taavola, URS
Linda Taylor, Mn/DOT
Michael Wade, Kinesiology, University of Minnesota
Nic Ward, HumanFIRST Program, University of Minnesota

Transportation Infrastructure Council
Chair: Michael Sheehan, Olmsted County
George Cochran
Dan Dorgan, Mn/DOT
Alan Forsberg, Blue Earth County
Cathy French, Civil Engineering, University of Minnesota
Romeo Garcia, Federal Highway Administration
Jim Grube, Hennepin County
Lee Guastaferro, City of Minnetonka
Bojan Guzina, Civil Engineering, University of Minnesota
Maureen Jensen, Mn/DOT
Lev Khazanovich, Civil Engineering, University of Minnesota
Mark Krebsbach, Dakota County
Joseph Labuz, Civil Engineering, University of Minnesota
Erland Lukansen, Mn/DOT
Mihai Marasteanu, Civil Engineering, University of Minnesota
Michael Marti, SRF Consulting Group, Inc.
Steve Olson, HNTB Corporation
Linda Pieper, Things with a Twist, Inc.
Robin Schroeder, Federal Highway Administration
Arturo Schultz, Civil Engineering, University of Minnesota
Keith Shannon, Mn/DOT
Carol Shield, Civil Engineering, University of Minnesota
Gene Skok, Civil Engineering, University of Minnesota (retired)
Linda Taylor, Mn/DOT
Jill Thomas, Minnesota Asphalt Pavement Association
Al Thorson, Minnowa Construction, Inc.
Curt Turgeon, Mn/DOT
Vaughan Voller, Civil Engineering, University of Minnesota
Erik Woldow, Mn/DOT
Matthew Zeller, Concrete Paving Association of Minnesota

Transportation Planning and the Environment Council
Chair: Connie Kozlak, Metropolitan Council
John Adams, Humphrey Institute of Public Affairs, University of Minnesota
Darryl Anderson, Mn/DOT
David Biesboer, Plant Biology, University of Minnesota
Larry Blackstad, Blackstad Consulting
Awards and Participants

Paul Bloom, Soil, Water, and Climate, University of Minnesota
Scott Bradley, Mn/DOT
Jason Cao, Humphrey Institute of Public Affairs, University of Minnesota
Elizabeth Colburn
Frank Douma, Humphrey Institute of Public Affairs, University of Minnesota
John Gulliver, Civil Engineering, University of Minnesota
Chris Hiniker, SEH
David Kitzelson, Mechanical Engineering, University of Minnesota
Barbara Lukermann, Humphrey Institute of Public Affairs, University of Minnesota
Julian Marshall, Civil Engineering, University of Minnesota
Susan Moe, Federal Highway Administration
Lance Neckar, College of Design, University of Minnesota
Frank Pafko, Mn/DOT
Jeffrey Peltoia, Central Regional Air Planning Association
Lea Schuster, Humphrey Institute of Public Affairs, University of Minnesota
Barbara VanDrasek, Geography, University of Minnesota
Mary Vogel, College of Design, University of Minnesota
Bruce Wilson, Bioproducts and Biosystems Engineering, University of Minnesota

Education/Outreach Council

Chair: Shannon Tyree, City of St. Paul
Gary Davis, Civil Engineering, University of Minnesota
Jan Ekern, Mn/DOT
Catherine Flannery, College of Continuing Education, University of Minnesota
Dale Grove, Bonestroo, Rosene, Anderlik, and Associates
Sheila Hatchell, Mn/DOT
Ann Johnson, Professional Engineering Services
Henry Liu, Civil Engineering, University of Minnesota
Michael Marts, SRF Consulting Group, Inc.
Sandy McCully, Mn/DOT
Clark Moe, Mn/DOT
Jane Prosch-Jensen, The JP Group
Micky Ruiz

ITS Institute Board

Chair: Robert Johns, CTS
Mike Asleson, Minnesota State Patrol
Deb Bloom, City of Roseville, Minn.
Mary Ellison, Minnesota Department of Public Safety
Tim Henkel, Mn/DOT
Mark Hoisier, Dakota Area Resources and Transportation for Seniors
Anthony Kane, American Association of State Highway and Transportation Officials
Mostafa Kaveh, Institute of Technology, University of Minnesota
Sue Lodahl, Mn/DOT
Beverly Miller, Minnesota Valley Transit Authority
Dan Murray, American Transportation Research Institute
Marthand Nookala, Hennepin County
Joe Peters, Office of Operations Research Development, Federal Highway Administration

James Riehl, College of Science and Engineering, University of Minnesota Duluth
Richard Rovang, Metro Transit
Rich Sanders, Polk County
Tom Sorel, Mn/DOT
Bob Winter, Mn/DOT

Minnesota LTAP Steering Committee

Chair: Julie Skallman, Mn/DOT
Philip Forst, Federal Highway Administration
David Frickie, Minnesota Association of Townships
Douglas Grindall, Koochiching County
Lee Gustafson, City of Minnetonka
Marcus Hall, St. Louis County
Gregory Iakson, Goodhue County
Robert Johns, CTS
Sue Lodahl, Mn/DOT
Shelly Pederson, City of Bloomington
Michael Sheehan, Olmsted County
Tom Sruve, City of Eagan
Linda Taylor, Mn/DOT

AirTAP Steering Committee

Chair: Peter Buchen, Mn/DOT
Gina Baas, Center for Transportation Studies
Dave Beaver, Owatonna Municipal Airport
Glenn Burke, South St. Paul Airport
Joe Harris, Metropolitan Airports Commission
Mark Hoyne, Grand Rapids Airport
Nancy Nistler, FAA
John Puckropp, GenAvCon
Bill Towlie, St. Cloud Regional Airport
Harold Van Leeuwen, Bemidji Regional Airport
Duane Wething, Detroit Lakes Airport

CTS staff partners

CTS works in partnership with the College of Continuing Education (CCE) to conduct many of its events. This partnership also allows CTS to offer an event-planning service for other organizations interested in holding a transportation-related event. CCE staff involved in the partnership are:

Lori Graven
Department Director
Catherine Flannery
Program Director

Gene Anderson
Program Director
Julie Bodurtha
Program Manager

Teresa Washington
Program Associate
Heather Dorr
Program Associate

Shirley Mueffelman
Program Administrative Specialist
Sara Van Essendelft
Program Administrative Specialist

Clair Daley
Program Administrative Specialist

CTS also works in partnership with CCE to administer the Graduate Certificate in Transportation Studies. CCE staff involved in the partnership are:

Judi Linder
Director, Credit Certificate Programs

Kelly Culhane
Associate Program Director

Teresa Fruen
Student Support Services Assistant
CTS staff

Robert C. Johns  
Director
Laurie McGinnis  
Associate Director
Cadie Wright Adhikary  
Graphic Designer
Gina Baas  
Communications and Outreach Director
Joe Barbeau  
Program Coordinator
Keith Carlson  
Operations Manager
Mindy Carlson  
Technical Transfer and Outreach Program Associate
Max Donath  
Intelligent Transportation Systems Institute Director
Amy Friebe  
Senior Editor
Jim Grothaus  
LTAP Director
Shawn Haag  
Program Coordinator
Penny Harris  
Contract Coordinator
C.J. Loosbrock  
Information Technology Professional
Jan Lucke  
Program Coordinator
Stephanie Malinoff  
Outreach and Education Coordinator
Arlene Mathison  
Information Manager/Librarian
Michael McCarthy  
Editor
Peter Park Nelson  
Editor
Linda Preisen  
Research Administration Director
Toni Prekker  
Web Coordinator
Pam Snopl  
Managing Editor
Mary Snyder  
Executive Assistant
Dawn Spanhake  
Financial Strategy and Administration Director

Left during FY08:  
Charlie Grussing-Neitzel  
Tom Helms  
Chad Rathmann

CTS student interns during FY08

Mike Anderson  
Jakub Dajc  
Sandeep Dhull
Leah Brink  
Grace Gathaara  
Victor Gauto
Meagan Buechel  
Nyssa Gesch  
Marni Ginther
Emily Buhrow  
Kate Croswell  
Liz Giorgi
Krystel Calubayan  

Jim Hammerand  
Sarah Hennes  
Heather Hoffman  
Danielle Janis  
Emily Kaiser  
Ron Kelleman  
Michael Kruckow  

Mallory Kurkoski  
Jennifer Matejka  
Amber Melaney  
Alec More  
Margaret Ostrander  
Matt Rogers  
Jay Roth
Katrina Sanders  
Marie Schneider  
Bala Sivakumar  
Nate Steffan  
Greg Summins  
Max Yang