



## Interstate at age 50: a 'national treasure' faces challenges

The interstate highway system is the workhorse of the nation's transportation network, an engine for the economy, and a component of national defense. At age 50, however, the system faces a number of challenges. Speakers at a special transportation roundtable—"At 50: Economic Issues Facing an Aging Interstate System"—reviewed the history of the interstate and shared their predictions for the future.

Sponsors of the November 29 event were CTS, the Humphrey Institute's State and Local Policy Program, the Minnesota Department of Transportation (Mn/DOT), and the Federal Highway Administration (FHWA).

Following a welcome by CTS director **Robert Johns**, Lt. Gov. **Carol Molnau** gave opening remarks. "Not only is [the system] an impressive historical achievement," she began,



Carol Molnau



Dan McNichol

"it is a vital backbone for the future transportation system as well."

Still, she continued, "having a well-used interstate system in Minnesota is really a blessing and a burden." Molnau, who also serves as Mn/DOT commissioner, said state funds available to construct and maintain the system are growing smaller while the roads grow older and maintenance needs keep increasing. "The interstate system is a national treasure," she said. "It has contributed enormously to U.S. worldwide economic dominance. We need to continue to treat the interstate with care and respect."

The story of how the interstate came to be was the topic of **Dan McNichol's** presentation. Author of *The Roads That Built America*, McNichol said the National System of Interstate and Defense Highways is "the largest infrastructure project in history." It consists of 62 super-highways crisscrossing the country, fed into by 2,000 beltlines and spurs, and including 55,500 bridges, 104 tunnels, and 14,500 interchanges.

Although the idea for a cross-country roadway stretches back to George Washington,

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## CTS receives ACRP grant to create airport guidebook

CTS has been awarded a grant from the Airport Cooperative Research Program (ACRP) to create a guidebook for managing small airports. The goal of the \$397,000 project is to deliver a concise, user-friendly guidebook to assist the managers of small airports throughout the United States.

ACRP is sponsored by the Federal Aviation Administration (FAA) and managed by the National Academies, acting through its Transportation Research Board (TRB). It is one of the TRB's applied, contract research programs that develop near-term, practical solutions to problems facing transportation agencies.

CTS submitted a proposal for the project in response to an RFP issued by the ACRP last summer for its FY07 research program.

For the project, CTS has assembled a research team of CTS staff members and transportation

consultant firms. CTS will provide overall leadership and management for the project as well as the editing and design of the final product.

The research team will solicit information from small airport managers around the nation through a survey and utilize its contacts within the Minnesota airport community to conduct focus groups. From this data collection effort, the team will prioritize a list of recommended issues and best practices for inclusion in the final product.

**Jim Grothaus**, director of technology and training at CTS, is the project's principal investigator.

Project completion is scheduled for June 2008. For more information, contact **Thomas Helms** of CTS at 612-626-1745, [helms032@cts.umn.edu](mailto:helms032@cts.umn.edu). **CTS**

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## Faculty Scholar receives award, federal grant

Civil engineering professor **Catherine Wolfgram French** is a recent recipient of the Institute of Technology (IT)



Catherine French

Distinguished Professorship at the University of Minnesota. This award honors exceptional faculty for their efforts in and contributions to teaching and scholarly research and for their genuine commitment to IT.

A CTS Faculty Scholar, French is an internationally recognized leader in the field of structural engineering. Her major contributions include understanding and improving the behavior of reinforced and precast concrete structural systems—including bridges—and dissemination of those results in practice. She was the principal investigator in the creation of the University of Minnesota Multi-Axial Subassemblage Testing (MAST) Laboratory, which is part of the National Science Foundation's Network for Earthquake Engineering Simulation.

Last year French was awarded a \$650,000 grant from the National Cooperative Highway

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## U of M researchers share findings at Toward Zero Deaths conference

After years of decline, the number of traffic fatalities nationwide is increasing—and the fatality rate has plateaued.

“We have to resolve nationally to do a lot better,” Congressman **James L. Oberstar** told the



*James Oberstar*

more than 500 attendees gathered at this year’s Toward Zero Deaths (TZD) conference, held November 2 and 3 in Duluth, Minn. The conference served as a forum for sharing information on how to reduce the number of fatalities and injuries on Minnesota roads.

“We have to set realistic goals, otherwise people will give up—and the Toward Zero Deaths initiative is a realistic goal,” he asserted.

Oberstar mentioned how SAFETEA-LU, the current federal transportation funding act, includes over \$3 billion for safety. For Minnesota, this means \$4.3 million for the state community highway safety program, \$2.1 million for the impaired driver prevention fund, and \$15.2 million to the state provided that the next legislature and the governor enact the primary seat belt law. “The single most important step the governor and the legislature can take is to pass this law,” he said.

Oberstar pointed out that a disproportionate number of traffic fatalities occur on rural roads. He expressed hope that the newly established Center for Excellence in Rural Safety (CERS) at the Humphrey Institute and CTS would “reduce the frequency of nighttime crashes, crash severity, run-off road injury, and fatalities and restore safety and sanity to rural driving,” he said.

**Nicholas Ward**, director of the HumanFIRST Program of the ITS Institute, gave a luncheon plenary presentation. He was one of several University of Minnesota faculty members and researchers who presented their safety research to conference attendees.

“If we really want a big push in traffic safety, we must concede that it will cost society—both in terms of money and changes in our safety culture and individual rights,” Ward told attendees. “But if we are really serious about making a significant improvement in safety, we need to think outside of the box, relax our political barriers, modify our safety culture, and accept the costs.”



*Nic Ward*

Ward highlighted some possible avenues for intervention to change people’s attitudes toward safety, including social approaches based on family and community, and technological approaches such as cameras to detect speeding and red-light running.

**Max Donath**, director of the University’s ITS Institute, highlighted emerging technologies, such as rural intersection decision support (IDS) systems, that may reduce intersection fatalities. The Institute’s IDS research focuses on giving drivers better information about gaps between vehicles when crossing a rural highway; the goal of the system is to reduce crashes without introducing traffic signals.

**Kathleen Harder** spoke about her work with fellow human factors researcher **John Bloomfield** evaluating the results of Minnesota’s Highway Enforcement of Aggressive Traffic (HEAT) Program. In a year-long federally funded effort, HEAT targeted a number of zones throughout the state with increased enforcement and education efforts. Harder and Bloomfield used speed data gathered by automated traffic detectors inside and outside enforcement zones to look for changes in driver behavior.

“This program has impacted individuals in their cars in a real way,” Harder said. “While we could just say that the program worked, we have the data to back it up.” In addition to reductions in speeding, Harder said, the number of crashes also declined during the study period relative to the previous five-year average.

**Janet Creaser**, a researcher with the HumanFIRST Program, analyzed the effects of the state’s Nighttime Concentrated Alcohol Patrol (NightCAP) program. Creaser and her team found that increasing the number of “saturation” enforcement actions in a given year resulted in a marginally significant decrease in the fatal alcohol-related crash rate. Overall, this analysis suggests that to increase deterrence, both visible enforcement and appropriate advertising are needed.

**Lee Munnich**, director of the State and Local Policy Program (SLPP) at the Humphrey Institute of Public Affairs,

along with SLPP researcher **Tom Horan** introduced the newly established Center for Excellence in Rural Safety, which was created from a directive in the SAFETEA-LU federal transportation legislation.

CTS’s **Gina Baas**, director of communications and outreach, and **Stephanie Jackson**, outreach and education coordinator, moderated several concurrent sessions.

Toward Zero Deaths is a multiagency partnership that includes representatives from Mn/DOT, the Minnesota Department of Public Safety, the Minnesota State Patrol, the Federal Highway Administration (FHWA), and CTS. The conference was hosted by CTS and sponsored by Mn/DOT, the Department of Public Safety, and the Minnesota TZD program.

A proceedings of the conference will be published early this year. To receive a copy, call CTS at 612-626-1077 or visit the CTS publications page. **CTS**

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## Associate director named for Pavement Research Institute

**Derek Tompkins** has been appointed associate director of the Pavement Research Institute (PRI), a joint program of the Department of Civil Engineering (CE) and CTS.



*Derek Tompkins*

Tompkins will report to the director of the institute, **Michael Darter** (see the November 2006 *CTS Report*).

Tompkins is a doctoral candidate in civil engineering at the University of Minnesota, advised by Professor **Lev Khazanovich**. His current research projects include a review of the first ten years of the MnROAD pavement research program; an analysis of dowel performance in jointed pavements using MinneALF, an accelerated loading facility; and his thesis project modeling early-age effects in concrete slabs.

In his new role, Tompkins will collaborate with faculty, staff, and funding organizations to strengthen materials and pavement research, building on the strong pavement research program already in place. **CTS**

roads were largely muddy paths even into the 1920s, McNichol said, and faced stiff competition from “roads of iron”—the railroad.

It took the experiences of **Dwight Eisenhower** in two world wars to move the system forward. A visionary, Eisenhower “saw how trucks changed the tide of World War I,” McNichol said. Nine months after war’s end, Eisenhower led the first motorized army convoy across the country. Eighty-one vehicles left the White House in July 1919 and reached San Francisco 62 days later, averaging 5 mph.

During World War II, Eisenhower developed an interstate system out of the dirt roads in Europe—even including rest stops and repair crews. “Everything was about movement and efficiency,” McNichol said.

As president, Eisenhower saw a pressing need for a national system. “The Cold War was getting warm,” McNichol said, “and Eisenhower worried about getting rescue teams into cities and getting survivors out” after a nuclear attack. He also wanted to improve road safety and stimulate the economy. The result was the “act that changed America,” signed by the president on June 29, 1956.

Following McNichol, a panel of leaders shared their perspectives. **Tom Sorel**, FHWA regional administrator, said the interstate “was an engineering marvel, but also an institutional marvel.” He cited five challenges for the future of the interstate:

1. Maintenance and preservation.
2. Funding, including alternative funding options, market approaches, the gas tax, and private sector involvement.



Tom Sorel



Ron Have

3. Pace of technology.
4. Organizational/institutional. “There is a lot of discussion about DOTs becoming ‘mobility companies,’ more like a utility instead of a public works agency,” he explained.
5. National transportation policy. A USDOT commission has begun development of a national transportation policy, he said. The commission has held two field hearings and will hold another in Minneapolis April 18–19.

Offering the state perspective, Molnau stressed the importance of the interstate system to the area’s quality of life. “We need to look at many alternatives and investment strategies to continue to support the economic viability of the state and region,” she said. All levels of government, she continued, will need to explore a more stable source of funding as federal resources begin to decline. She also advocated looking at system needs as a whole, rather than piecemeal through earmarks.

**Ron Have**, chair of the Minnesota Freight Advisory Committee, gave the perspective of the private sector. “All those goods and conveniences as a society that we demand require trucks,” he said. The rise of just-in-time delivery in the last 10 years cut business inventory costs dramatically, he said, benefiting consumers as well, but the approach has been a big burden on interstates and the trucking industry.

As users of the system, trucking firms see the lack of system uniformity as a “critical issue” and a “good reason for a national transportation policy,” Have added. Crossing a state line means different truck size and weight restrictions, speed limits, fuel taxes, and tolls.

“The interstate system is an outstanding asset for our country,” he said. “I have no idea where we would be without it.” **CTS**

## Freeways topic of ‘Compleat Scholar’ class

The University’s Compleat Scholar program is offering a short course this semester based on a project jointly sponsored by the Center for Urban and Regional Affairs (CURA) and CTS.

“Gridlock: Building Twin Cities Freeways” will be held in February on the St. Paul campus. **Patricia Cavanaugh**, a Ph.D. candidate in the Department of Political Science and a research assistant at CURA, is the course instructor. For the

course she will use her recently published report—*Politics and Freeways: Building the Twin Cities Interstate System*—a comprehensive look at the changing politics and participants in Twin Cities–area interstate decision making since the 1950s. The report is available online at [www.cts.umn.edu/publications/reports](http://www.cts.umn.edu/publications/reports).

For more information about the course, visit [www.cce.umn.edu/scholars](http://www.cce.umn.edu/scholars). **CTS**

## Martin Sabo honored for distinguished service

An array of leaders including former vice president **Walter Mondale** honored retiring Congressman **Martin Olav Sabo** at a special luncheon ceremony December 1 in Minneapolis. The State and Local Policy Program (SLPP) of the Humphrey Institute of Public Affairs hosted the event.



Walter Mondale



Martin Sabo

First on the agenda was Humphrey Institute dean **J. Brian Atwood**, who thanked Sabo for all he has done for the University. “I can’t think of a greater public servant,” he said.

**Lee Munnich**, senior fellow and SLPP director, moderated a panel retrospective of the Congressman’s career. Sabo “always seems to have a common-sense approach to politics, to government, to policy,” he said.

Mondale said Sabo is best described by a word he learned growing up in small towns in Minnesota—“the highest honor you can give to anybody... solid.” Sabo helped shape the “Minnesota Miracle” [in 1971] that “changed the state in a profound way,” he said. “In Washington, he continued to be a solid representative, leading our country in the right direction even in adversity.”

**Wendell Anderson**, former Minnesota governor and U.S. senator, declared that Sabo “had a greater impact on the lives of Minnesotans than any other elected official in a half century.”

**Mike Erlandson**, Sabo’s chief of staff from 1993 through 2006, gave an “abridged tour” of what Sabo’s work meant for Minnesota. “If you flew in and out of our airport, or any other airport in the country...you were most likely guided along the way by somebody who was trained at the MARC program that existed because of Congressman Sabo.” [MARC is the Mid-America Aviation Resource Consortium, which includes an air traffic controller program.] And “once you landed on the ground,” Erlandson continued, “you may have hopped on the light-rail line or ... into a clean-fuel bus,” again thanks to Sabo.

Other panelists were **Bill Kelly**, Minnesota state representative (1970–76), and **Eileen Baumgartner**, U.S. House

## Career Expo to follow ITSO conference

The 12th Annual Transportation Career Expo on March 1, 2007, has a new format and time. Registration begins at 1:15 p.m., followed by a brief opening session at 1:30 p.m. Students are encouraged to drop off their resumes for a critique by a volunteer and then head to one of three concurrent sessions to learn about specific career areas: engineering and intelligent transportation systems, transportation planning and policy, and transportation logistics.

Following the concurrent sessions, students can meet and network with employer representatives at the exhibits area. New this year is an optional interviewing/networking/resume-writing session from 3:00 to 3:30 p.m.

The expo is sponsored by CTS and several other organizations. For information, contact **Mindy Carlson** at 612-625-1813, [carlson@cts.umn.edu](mailto:carlson@cts.umn.edu).

The expo follows the Interdisciplinary Transportation Student Organization's third networking and paper presentation conference, which runs from 7:30 a.m. to 1:00 p.m. For details about the program, visit the ITSO Web site at [www.tc.umn.edu/~itso](http://www.tc.umn.edu/~itso). **CTS**

### Sabo from page 3

Budget Committee Democratic staff director (1971–1978).

In the event's closing, Sabo thanked everyone for their comments and for their support and encouragement over the years. "Forty-six years is a long time and lots of memories," he said. "If I had it to do all over again, I would."

The luncheon also included the presentation of the inaugural Martin Olav Sabo Fellowship to **Delores Stoffel**, a first-year public policy student, and a video review of the congressman's distinguished career in public service.

Sabo represented the University of Minnesota and the Fifth Congressional District since 1978. As a strong advocate

for education and research, he played a major role in bringing research dollars to the University. Through the Minnesota Guidestar program, Sabo was a vigorous supporter of transportation technology research at CTS and SLPP.

In 2006, Sabo brought new funding to the Computer Science and Engineering department and CTS for robotic research to enhance transportation security. His efforts also supported transportation policy research at the Humphrey Institute on such issues as transit, the environment, congestion pricing, and community-based transportation. **CTS**

### French from page 1

Research Program (NCHRP) for a multi-year research study of cast-in-place concrete connections for precast deck systems. **Carol Shield** and **Arturo Schultz** of the Department of Civil Engineering and **Z. John Ma** of the University of Tennessee-Knoxville are coinvestigators.

The focus of the NCHRP project is to

develop specifications, guidelines, and examples for the design and construction of durable cast-in-place (CIP) reinforced concrete connections for precast deck systems. For more information, please see the CTS research page: [www.cts.umn.edu/research/projectdetail.pl?id=2007052](http://www.cts.umn.edu/research/projectdetail.pl?id=2007052). **CTS**

## Upcoming events

To publicize your event, call CTS at 612-626-1077, fax 612-625-6381, or e-mail [snopl001@cts.umn.edu](mailto:snopl001@cts.umn.edu). Visit the CTS Web site—[www.cts.umn.edu](http://www.cts.umn.edu)—for more comprehensive event information.

Jan. 16–19	62nd Annual Minnesota County Engineers Conference, Brainerd. Contact <b>Oona Besse</b> , 612-624-3492, <a href="mailto:conferences3@cce.umn.edu">conferences3@cce.umn.edu</a> .	Feb. 15	11th Annual Minnesota Pavement Conference, St. Paul. Contact <b>Shirley Mueffelman</b> , 612-624-4754, <a href="mailto:conferences2@cce.umn.edu">conferences2@cce.umn.edu</a> .	Apr. 10–11	Spring Maintenance Training Expo, St. Cloud. Contact <b>Shirley Mueffelman</b> , 612-624-4754, <a href="mailto:conferences2@cce.umn.edu">conferences2@cce.umn.edu</a> .
Jan. 18	Roundtable on Minnesota's Stake in Plug-in Hybrid Vehicles, St. Paul. See <a href="http://cts.umn.edu/events">cts.umn.edu/events</a> .	Feb. 28	21st Annual Mn/DOT - ACEC/MN Consultant Conference, Brooklyn Center. Contact <b>David Oxley</b> , 952-593-5533, <a href="mailto:doxley@acecmn.org">doxley@acecmn.org</a> .	Apr. 22–25	2007 APWA North American Snow Conference, St. Paul. Contact <b>Brenda Shaver</b> , 816-595-5240, <a href="mailto:bshaver@apwa.net">bshaver@apwa.net</a> .
Jan. 31–Feb. 2	City Engineers Association of Minnesota (CEAM) Annual Conference, Brooklyn Center. Contact <b>Oona Besse</b> , 612-624-3492, <a href="mailto:conferences3@cce.umn.edu">conferences3@cce.umn.edu</a> .	March 1	Transportation Career Expo, Minneapolis. Contact <b>Mindy Carlson</b> , 612-625-1813, <a href="mailto:carlson@cts.umn.edu">carlson@cts.umn.edu</a> .	April 23–24	ITS Minnesota 13th Annual Meeting, Duluth. Contact <b>Electra Sylva</b> , 612-624-3708, <a href="mailto:conferences5@cce.umn.edu">conferences5@cce.umn.edu</a> .
Feb. 8	CTS Winter Luncheon with <b>Bruce Simons-Morton</b> , Minneapolis. Contact <b>Electra Sylva</b> , 612-624-3708, <a href="mailto:conferences5@cce.umn.edu">conferences5@cce.umn.edu</a> .	March 15–16	Concrete Paving Association of Minnesota Annual Conference, St. Cloud. See <a href="http://www.concreteisbetter.com">www.concreteisbetter.com</a> .	May 1–2	CTS Eighteenth Annual Transportation Research Conference, Saint Paul RiverCentre. Contact <b>Electra Sylva</b> , 612-624-3708, <a href="mailto:conferences5@cce.umn.edu">conferences5@cce.umn.edu</a> . <b>CTS</b>