



## 'Destinations Count' at 2009 research conference

The Access to Destinations Study will be the subject of the opening plenary session at the 20th annual CTS Transportation Research Conference. The conference will be held May 19–20 at a new location: the Sheraton Bloomington Hotel in Minneapolis.

Access to Destinations is an interdisciplinary research and outreach effort coordinated by CTS that takes a new approach to understanding how people use the transportation system and how transportation and land use interact. (For more about the study, see [www.cts.umn.edu/access-study](http://www.cts.umn.edu/access-study).)

The opening session—"Destinations Count"—will include a presentation of findings from study co-leaders **David Levinson**, the Richard P. Braun/CTS Chair in Transportation Engineering, and **Kevin Krizek**, an associate professor at the University of Colorado (previously with the University of Minnesota's Hubert H. Humphrey Institute of Public Affairs).

The implications of the findings will then

be discussed by a panel of transportation experts: **Tim Henkel**, modal planning and program management division director with the Minnesota Department of Transportation; **Curt Johnson**, president of Citistates Group; and **Maria Zimmerman**, vice president for policy with Reconnecting America, a national organization focused on the link between transportation and community development.

The conference luncheon on May 19 will feature a presentation by **Tom Vanderbilt**, the *New York Times* best-selling author of *Traffic: Why We Drive the Way We Do (and What It Says About Us)*. Vanderbilt's talk, "Objects in Mirror Are More Complicated Than They Appear," will present highlights from his book related to the dynamics of traffic flow, the social interactions of drivers, the perceptual illusions and cognitive biases that humans behind the wheel are prone to, and the

*Conference continued on page 4*



Tom Vanderbilt

## Inside

- Legislative seminars ..... 2
- Pavement conference..... 2
- Bike center ..... 3
- ITS Minnesota forum ..... 3
- Career Expo ..... 4
- Student conference ..... 4

## Leaders discuss road pricing

CTS convened a special meeting on March 13 with U.S. Congressman **James Oberstar** and a number of Minnesota transportation leaders to discuss the potential of distance-based road pricing as an alternative to the gas tax. The meeting was held at the University's Humphrey Institute of Public Affairs in Minneapolis.

In his opening remarks, CTS director **Robert Johns** described the relationship of this meeting to the legislative seminars CTS had sponsored in February (see page 2). Legislators were interested in sharing views with Congressman Oberstar.

The meeting began with a presentation by **Ferrol Robinson**, principal of SRF Consulting, about challenges to the gas tax and the potential benefits of distance-based pricing. Oberstar then shared his vision for the next surface transportation authorization bill. (SAFETEA-LU, the bill enacted in 2005, expires later this year.) The new bill may include distance-based pricing pilot programs.

The meeting then turned to a round-robin of the gathered leaders including **Tom Sorel**, commissioner of the

*Pricing continued on page 2*

## CE researchers to evaluate I-35W bridge data

**Catherine French**, along with co-investigators **Carol Shield** and **Henryk Stolarski**, will receive more than \$235,000 over 40 months from the Minnesota Department of Transportation (Mn/DOT) to evaluate data from instrumentation on the new I-35W bridge. All three are professors in the Department of Civil Engineering; French and Shield are CTS Faculty Scholars.

The new bridge was instrumented with "smart bridge technology" to monitor the performance of the structure during service. Instrumentation includes vibrating wire and resistive strain gages and thermistors in the foundation, bridge piers, and superstructure. The bridge superstructure also incorporates fiber optic sensors, string potentiometers, and accelerometers.



Catherine French

The role of the University is to evaluate the data to be obtained from the instrumentation and provide an annual report to Mn/DOT regarding the bridge's performance. The study will also provide valuable information regarding the evaluation of the instrumentation technology for consideration in other bridge-monitoring applications in the state.

The research was discussed in the March 2 issue of *BusinessWeek* in an article titled "The Bridge to Smart Technology."

The researchers also played a consulting role in reviewing and commenting on the instrumentation plan for the new I-35W bridge and participated in a truck test of the bridge prior to its opening. **CTS**

## CTS holds funding seminars for legislators

CTS offered three seminars for Minnesota legislators in February. The seminars allowed officials to learn about funding trends affecting transportation and to participate in discussions with experts about the implications for transportation policy and finance.

The seminars were sponsored by CTS in cooperation with the Minnesota Senate and House Transportation Committees.

The first seminar, held February 4, covered the historical development of state transportation funding as well as current road funding. Instructors were **John Williams**, former legislative analyst with the Minnesota House Research Department; **Matt Burress**, legislative analyst with the Minnesota House Research Department; and **Norman Foster**, executive budget officer with the Minnesota Department of Finance.

The second seminar, held February 11, addressed current transit funding and the future of transportation finance. Instructors were **Natalio Diaz**, former director of transportation planning with the Metropolitan Council; **Adeel Lari**, research fellow with the Humphrey Institute of Public Affairs; and **Lee Munnich**, senior fellow and director of the State and Local Policy Program at the

Humphrey Institute.

The February 27 seminar focused on alternatives to the gas tax—specifically, distance-based pricing. Instructors were **Ferrol Robinson**, principal with SRF Consulting Group; **Max Donath**, director of the Intelligent Transportation Systems (ITS) Institute at CTS; and Munnich. Gas tax revenues in Minnesota and nationally are not keeping up with transportation infrastructure needs, Robinson explained, and the growing number of more fuel-efficient vehicles is further decreasing revenues. Pricing offers an alternative that can consider distance traveled and number of trips, vehicle weight, emissions level, and fuel efficiency, he said.

A panel discussion followed the presentations. Panelists were Sen. **Steve Murphy**, chair of the Senate Transportation Committee; Rep. **Bernie Lieder**, chair of the House Transportation Committee; **Bernie Arseneau**, director of the Policy, Safety and Strategic Initiatives Division at Mn/DOT; **Bob McFarlin**, a member of the Metropolitan Council; and **Peter McLaughlin**, commissioner of the Hennepin County Board.

**Robert Johns**, CTS director, moderated the seminars. About 30 legislators and staff attended each event.

*Pricing from page 1*

Minnesota Department of Transportation; Mayors **Chris Coleman** of St. Paul and **Jim Hovland** of Edina; Sen. **Steve Murphy** and Reps. **Bernie Lieder** and **Frank Hornstein** of the Minnesota Legislature; and **Bob McFarlin** of the Metropolitan Council. **Jim Kolb**, the committee staff person for the U.S. House Transportation and Infrastructure Committee, also attended.



*James Oberstar*

Following the discussion, Professor **Max Donath**, director of the Intelligent Transportation Systems (ITS) Institute at CTS, gave a demonstration of a specially equipped research vehicle. Donath and **Lee Munnich** of the State and Local Policy Program at the Humphrey Institute are members of a National Cooperative Highway Research Program team that is studying road user charges. **CTS**

### New research reports available

The enclosed insert lists research reports written by University researchers and published by CTS, Mn/DOT, the Minnesota Local Road Research Board, and other sponsors since December 2008. **CTS**

## Pavement conference: innovation, investment

The Minnesota Statewide Transportation Plan for 2009–2028 projects a growing gap between performance targets and available funds, said Mn/DOT's **Tim Henkel** at the 13th Annual Minnesota Pavement Conference, held February 12 in St. Paul. Other speakers described how innovation and wise investment can help close the gap.

New this year, the conference was sponsored by the Transportation Engineering and Road Research Alliance (TERRA). Cosponsors were Mn/DOT, the Minnesota Local Technical Assistance Program, the Department of Civil Engineering at the University of Minnesota, Minnesota City Engineers Association, Minnesota County Engineers Association, Minnesota Street Superintendents Association, Minnesota Public Works Association, State Aid for Local Transportation at Mn/DOT,

Minnesota Local Road Research Board, and Pavement Research Institute at the U of M. It was hosted by CTS.

Henkel, the director of the Planning, Modal, and Data Management Division at Mn/DOT, said Minnesota will require \$65 billion over the next 20 years to achieve the highway system performance targets set forth in the plan. (For more information about the plan, see [www.dot.state.mn.us/planning/stateplan/index.html](http://www.dot.state.mn.us/planning/stateplan/index.html).)

Conference topics included transportation investment strategies, risk analysis, intelligent compaction, and trends in the concrete and asphalt industries.

**Tim Worke**, TERRA co-chair and director of the highway and transportation division of the Associated General Contractors of Minnesota, opened the conference and moderated the morning plenary sessions. He introduced **Tom**

**Sorel**, Mn/DOT commissioner, who gave welcoming remarks.

**Mark Maloney**, a member of the TERRA Board, received the 2009 Gerald Rohrbach Minnesota Pavement Conference Award. Maloney is the public works director/city engineer of Shoreview.

A summary of conference presentations will be posted on the Minnesota LTAP Web site ([www.mnltap.umn.edu](http://www.mnltap.umn.edu)) later this spring. **CTS**



*Doug Schwartz presented the Rohrbach Award to Mark Maloney.*

## New bike center to support campus transportation needs

The new University Bike Center is among the biking and walking improvements announced March 10 by Transit for Livable Communities (TLC), the nonprofit organization that administers Bike Walk Twin Cities. University of Minnesota president **Robert Bruininks** and Minneapolis mayor **R.T. Rybak** spoke at a special announcement ceremony at the site of the future center in the Oak Street Parking Ramp.



Robert Bruininks



R.T. Rybak



Lea Schuster

Bike Walk Twin Cities is a federally funded initiative to increase biking and walking and reduce driving in Minneapolis and neighboring communities.

Following introductions from TLC executive director **Lea Schuster**, Bruininks said the investment supports the University Regents' sustainability policy

and is part of a "systematic, strategic approach to our long-term transportation needs." Rybak added that biking is an important part of the transportation system and "isn't just for recreation anymore."

Rybak also noted that Minneapolis was the only large city chosen for study under the Nonmotorized Transportation Pilot Program (NTPP), which was authorized by Congress in the 2005 transportation bill. The pilot program provides funding to four communities to construct a network of nonmotorized transportation facilities for a before-and-after investigation of the merits of nonmotorized infrastructure investment. CTS is leading the overall program evaluation of the NTPP. (For more, see [www.cts.umn.edu/Research/ProjectDetail.html?id=2007026](http://www.cts.umn.edu/Research/ProjectDetail.html?id=2007026).)

The bike center is expected to serve 6,000 cyclists on campus as well as other commuting cyclists. It will include a first-of-its-kind rider frequency program powered by a radio frequency identity system, as well as an electronic bike-trip-planning kiosk, 24-hour-accessible secure bike storage, changing facilities, repair service,



Attendees viewed plans for the bike center.

and bike retail opportunities. Construction could start this summer.

Faculty are already exploring potential research related to the center. **Steve Sanders**, campus bicycle coordinator at the University's Parking and Transportation Services, is working with CTS Scholars **Jason Cao** and **Yingling Fan** of the Humphrey Institute, professor and associate dean **Greg Lindsey** of the Humphrey Institute, and geography associate professor **Francis Harvey** to develop topics for study. **Linda Preisen**, director of research administration at CTS, coordinated their initial meeting. **CTS**

## ITS Minnesota highlights University research, public service

University of Minnesota researchers described technologies aimed at keeping teen drivers safe, improving transit service, and monitoring traffic flows at the 15th annual ITS Minnesota annual meeting and information exchange March 10.

**Janet Creaser**, a research fellow in human factors engineering with the HumanFIRST Program, described the development of a prototype teen driver support system based on a cellular "smartphone" platform. The system monitors the position of a vehicle using the smartphone's GPS capability and connects to external resources including digital road maps and speed limit databases. Young drivers using the system receive warnings when infractions such as speeding or failure to stop at stop signs are detected; teens can also be warned about potential hazards such as upcoming sharp curves or inclement weather conditions. In addition to immediate feedback, the system can notify parents via text messaging and create a record of driving performance.

Minnesota Traffic Observatory senior systems engineer **Chen-Fu Liao**

discussed his work on a system to provide signal priority to buses using onboard GPS units and wireless networking. Dynamically changing the timing of traffic signals to allow buses to pass through more easily has the potential to improve the performance of bus transit systems, Liao said. The new system enables buses to communicate directly with the hardware that controls individual traffic signals. Signal timing can be changed in response to a number of factors, including the distance of a bus from a designated stop and whether or not the bus is running behind schedule.

Graduate student **Guruprasad Samasundaram** presented his current work with Professor **Nikolaos Papanikolopoulos** of the computer science and engineering department on machine vision techniques for traffic

detection. The ongoing project is developing algorithms that allow computers to automatically count and track pedestrians and vehicles in video. The technology has a wide range of applications, from counting cars at busy intersections to monitoring suspicious activity in public places.

**Linda Preisen**, director of research administration at CTS, moderated the research session. The event also featured presentations by other organizations.

CTS is a founding member of ITS Minnesota, the state chapter of the Intelligent Transportation Society of America. **CTS**

### ITS Institute director honored

ITS Minnesota honored ITS Institute director Max Donath with its 2009 Minnesota Public Sector Recognition award. ITS Minnesota president Ray Starr presented the award, citing Donath's "outstanding contributions" to intelligent transportation systems in Minnesota. **CTS**



Ray Starr, Max Donath

## Career expo draws strong interest

Eighty-two students attended the 2009 Transportation Career Expo to learn about transportation-related careers and job-hunting tips and to network with potential employers.

The early-evening event, held February 5 on the Minneapolis campus, featured a new, shorter format with a single general-session

panel discussion. After opening remarks from CTS assistant director **Gina Baas**, the panel was moderated by **Shannon Tyree** of the City of St. Paul, who also chairs the CTS Education and Outreach Council. Panelists were **Cathy Anderson** from CH Robinson, **Ann Johnson** from Professional Engineering Services and the Department of Civil Engineering, **Matt Gjersvik** from Mn/DOT, and **Jack Broz** from HR Green.

The speakers discussed their backgrounds in transportation and offered tips and advice to the attendees. Panelists emphasized the unexpected, and encouraged students to be open and willing to try anything, especially in the current economic environment. "Things move fast and you have to be open to change," Johnson said. "There's so much out there, and we just don't think about all of the opportunities." Tyree agreed and encouraged students to think long term. "Where you start is not where you finish," she said.



*Students networked with employers at the reception.*

Also new this year, each of the 20 exhibitors introduced themselves to the full group and said a few words about their organizations.

Many students brought their résumés and received suggestions from volunteers **Amber Nord** of Jacobs Engineering Group, **Michael Corbett** of HDR Engineering, Inc., **Darren Kaltved** of the U of M Institute of Technology Career Center, and **Joe Barbeau** and **Christina Miller** of CTS.

A closing reception offered networking and employment-seeking opportunities with the exhibitors. Representatives from both public- and private-sector transportation companies were on hand.

The annual event is sponsored by the CTS Education and Outreach Council, the Women's Transportation Seminar, the Minnesota Local Road Research Board, Minnesota LTAP, the Intelligent Transportation Systems Institute, and the Council of Supply Chain Management Professionals. **CTS**

## Transportation students hold annual paper conference

The University of Minnesota Interdisciplinary Transportation Student Organization (ITSO) held its fifth annual student paper conference on March 6 in Minneapolis. Students presented papers on topics ranging from traffic simulation to CO<sub>2</sub> emissions.

The conference closed with a lunch sponsored by the North Central Section of the Institute of Transportation Engineers featuring keynote speaker **Khani Sahebjam**, deputy commissioner and chief engineer with the Minnesota Department of Transportation. Several scholarships and awards were also presented during the lunch. CTS provides annual funding for ITSO. **CTS**

### *Conference* from page 1

relationship between the built environment and our behavior, among other aspects of this complex—yet overlooked—everyday activity.

The conference's Bridge Workshop will include results from a University of Minnesota study comparing different types of technology and systems for monitoring critical structural components, as well as updates about the instrumentation incorporated into the new I-35W bridge.

The program and registration information are posted at [www.cts.umn.edu/Events/ResearchConf](http://www.cts.umn.edu/Events/ResearchConf). For more information, contact **Sara Van Essendelft**, 612-624-3708, [cceconf5@umn.edu](mailto:cceconf5@umn.edu). **CTS**

## Upcoming events

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

May 19	CTS Spring Luncheon featuring <b>Tom Vanderbilt</b> , Sheraton Hotel, Bloomington. Contact <b>Sara Van Essendelft</b> , 612-624-3708, <a href="mailto:cceconf5@umn.edu">cceconf5@umn.edu</a> .	June 15–16	International Transport Economics Conference, Minneapolis. Contact <b>Sara Van Essendelft</b> , 612-624-3708, <a href="mailto:cceconf5@umn.edu">cceconf5@umn.edu</a> .
May 19–20	20th Annual CTS Transportation Research Conference, Sheraton Hotel, Bloomington. Contact <b>Sara Van Essendelft</b> , 612-624-3708, <a href="mailto:cceconf5@umn.edu">cceconf5@umn.edu</a> .	June 18–20	First Transatlantic Network on Communications and Transport Activities Research Conference, Arlington, Virginia. See <a href="http://nectar.gmu.edu">http://nectar.gmu.edu</a> . <b>CTS</b>