



'Reducing Greenhouse Gas Emissions' study team testifies at legislature; first seminars held

Members of a research team studying greenhouse gas (GHG) emissions testified at a meeting of the Minnesota House of Representatives Transportation Finance Division Committee on March 4. The team is investigating public policy and technology options for reducing greenhouse gases emitted from the transportation sector in Minnesota. CTS received an appropriation from the legislature last summer to conduct the study.

About 15 committee members attended the hearing, including committee chair **Bernie Lieder** and the co-authors of the bill that funded the study—Rep. **Melissa Hortman**, House assistant majority leader, and Rep. **Frank Hornstein**. The committee will hear the final results of the study in June.

CTS associate director **Laurie McGinnis**, who is providing interdisciplinary leadership for the project, testified at the hearing



David Kittelson



Elizabeth Wilson



Julian Marshall

along with Professor **David Kittelson** of the Department of Mechanical Engineering, one of the leaders of the research team. Other team members at the hearing were **Elizabeth Wilson** of the Humphrey Institute of Public Affairs and **Julian Marshall** of the Department of Civil Engineering. A number of students involved in the research also attended.

The research team is looking into technical and policy options such as higher fuel-economy standards, lower-carbon biofuels, and shifts in land use and transportation infrastructure to reduce transportation energy

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Elected officials attend transportation seminar

CTS offered a half-day seminar for Minnesota elected officials on February 25. The seminar, held on the Minneapolis campus, gave officials an overview of transportation trends and an opportunity to discuss policy implications with University and other experts.

Robert Johns, CTS director, moderated the CTS-sponsored seminar, which was taught by five instructors: **Lee Munnich**, senior fellow and director of the Humphrey Institute of Public Affairs State and Local Policy Program; **Adeel Lari**, research fellow at the Humphrey Institute; **Natalio Diaz**, former director of transportation planning with the Metropolitan Council; **Norman Foster**, executive budget officer with the Minnesota Department of Finance; and **John Williams**, former legislative analyst with the Minnesota House Research Department.

The first portion of the seminar examined transportation funding in Minnesota, including



Wendy Wulff of the Lakeville City Council and Mayor Marvin Johnson of Independence were among the participants.

the historical development of funding formulas as well as current sources and allocation of funds for roads, transit, and other uses. The second portion explored future approaches for transportation finance and looked at financing mechanisms and experiences in other states and countries, including various pricing strategies and technologies. **CTS**

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Spring Luncheon: 'Lowering Our Carbon Footprint'

Efficiency and mass transit are the most-often suggested approaches for lowering the carbon footprint of the transportation sector. However, can high technology alone—for example, plug-in hybrids—do the job, or will we need to put our big cars on a diet? What incentives are there for using mass transit sufficiently, and for the public to perceive it as safe and convenient? Can downtown areas be made attractive enough to help reduce sprawl? Can airplanes ever lower their carbon "airprints"?



Stephen H. Schneider

Stephen H. Schneider will attempt to answer these questions at the CTS Spring Luncheon at the Saint Paul RiverCentre. It will be held May 20 as part of the 19th Annual CTS Transportation Research Conference (see page 2). The luncheon also serves as the concluding seminar of the "Reducing Greenhouse Gases" study (see article above).

Schneider is the Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, professor of biological

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Annual research conference to open with panel session on national congestion strategy

In 2006, the U.S. Department of Transportation announced a major initiative to reduce transportation system congestion. **Tyler Duvall**, assistant secretary for transportation policy at the U.S. Department of Transportation, has been invited to discuss this initiative in the opening general session of the 19th Annual CTS Transportation Research Conference. The event will be held May 20–21 at the Saint Paul RiverCentre.

The National Strategy to Reduce Congestion on America's Transportation Network provides a blueprint for federal, state, and local officials to consider as they work together to reverse the alarming trends of congestion. Following Duvall's keynote presentation, two panelists will give their reactions: **Bernie Arseneau**, director of Mn/DOT's Office of Traffic, Security and Operations, and **Arlene McCarthy**, director of metropolitan transportation services with the Metropolitan Council.

The May 20 luncheon will feature **Stephen H. Schneider**, who will present "Transportation Options in a Greenhouse: Alternative Strategies to Lowering Our Carbon Footprint" (see page 1).

In one of the concurrent sessions, researchers from the CTS Moving

Communities Forward study will share their findings. The interdisciplinary study, sponsored by the American Institute of Architects, looked at how well-designed transportation projects can enhance communities (see www.movingcommunitiesforward.org).

Another highlight this year is a two-part session on roundabouts, covering crash statistics, agency approvals, and public buy-in. Other concurrent sessions will touch on topics ranging from driver behavior to rural safety to precast bridge girders. A selection of projects will also be on display as posters during the morning and afternoon breaks on May 20.

Program and registration information is available on the CTS Web site at www.cts.umn.edu/Events/ResearchConf. For questions, contact **Sarah Van Essendelft**, 612-624-3708, cceconf5@umn.edu. **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 2007. **CTS**

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sciences, and senior fellow in the Woods Institute for the Environment at Stanford University.

In his presentation, Schneider will highlight incentives to bring about a transition to cleaner transport, along with promising technology and policy options that other states and countries are pursuing to reduce the impacts of climate change from the transportation sector. He will also compare the transport sector with the industry and building sectors to predict how much can feasibly be done.

Schneider is internationally recognized for research, policy analysis, and outreach in climate change. Since 1988 he has been involved with the Intergovernmental Panel on Climate Change (IPCC); he and four generations of IPCC authors received a collective Nobel Peace Prize for their joint efforts in 2007. He has consulted for federal agencies and White House staff in six administrations.

For more information, contact **Sara Van Essendelft**, 612-624-3708, cceconf5@umn.edu. **CTS**

Report examines diversity in DOT workforce

Minorities and women are projected to make up a growing portion of the U.S. labor force, yet the data available on transportation industry employees by gender and race are limited.

A 2007 report by Dr. **Samuel Myers** and **Lawrencina Mason Oramalu** of the Humphrey Institute of Public Affairs addresses this information need. The report, *Racial and Gender Diversity in State DOTs and Transit Agencies: A Benchmark Scoping*, is a joint report of the Transit Cooperative Research Program (TCRP report 120) and the National Cooperative Highway Research Program (NCHRP report 585).

The report documents and analyzes racial and gender diversity in state depart-

ments of transportation and transit agencies. This information is needed by state DOTs and transit agencies to assess the current diversity of their workforce; establish a benchmark against which to measure and track efforts to recruit, promote, and retain a diverse workforce; and identify successful practices being applied throughout the industry.

The objectives of the project were to identify sources of existing data; assess the quality of the data; identify gaps and determine what additional data need to be collected to establish a credible benchmark; and establish a baseline reflecting the current status of racial and gender diversity in state DOTs and transit agencies.

Overall, the researchers found that the

existing data are not comprehensive. As a result of the analysis, they propose five key recommendations:

- Make it easier for agencies to submit their data electronically.
- Provide standardized training and facilitate the sharing of information and best practices among agencies.
- Communicate the key elements of an effective affirmative action plan.
- To promote greater accuracy, improve agencies' internal monitoring and tracking systems.
- Make diversity an agency priority by holding everyone accountable for achieving diversity goals.

To download the report, visit www.trb.org/news/blurb_detail.asp?ID=8027. **CTS**

Conference speakers offer a green approach to pavement

Asphalt is black and concrete is gray, but “green” is becoming the new look for pavement as environmental concerns grow in importance. Speakers at the 12th Annual Minnesota Pavement Conference described emerging areas such as green roads and greenways, warm-mix asphalt, and sustainable innovations in concrete pavements.

The conference, held February 14 in St. Paul, was sponsored by Mn/DOT, the Minnesota Local Technical Assistance Program (housed at CTS), and a number of other organizations. The event began with opening comments by **Lisa Freese**, Mn/DOT deputy commissioner.

Current road-building and road-use practices are primary sources of environmental degradation, said **Joe Mahoney**, a civil engineering professor at the University of Washington. He provided an overview of “Green Roads,” a proposed rating system being developed by the University of Washington and CH2M Hill to improve the sustainability of roadway design and construction practices.

Ramsey County commissioner **Victoria Reinhardt** and staffer **Bridget Beck** described components of a short but vital segment of a bike and pedestrian trail in the Twin Cities’ trail system. The project used a number of recycled products, including tear-off roofing shingles in the bituminous mix, recycled plastics in the retaining wall and benches, and reused sand in rain gardens.

Dave Newcomb, vice president of research and technology with the National

Asphalt Pavement Association (and former MnROAD research director and professor with the University of Minnesota’s Department of Civil Engineering), explained how construction using “warm-mix” asphalt—as opposed to the standard hot mix—decreases both fuel usage and emissions.

Mark Snyder, an engineering consultant with Geotech Innovations (and another former CE faculty member), gave an update on an FHWA-sponsored study of concrete pavements constructed using recycled concrete aggregate.

Several University of Minnesota researchers reported on their work. **Gene Skok**, retired from the CE department, described a project he and **Shongtao Dai** of Mn/DOT conducted with funding from the Minnesota Local Road Research Board (LRRB). The objective was to lay out best practices for the selection of asphalt concrete recycling techniques. The report, *MnPavement Rehabilitation Best Practices* (2008–06), will be available on the LRRB Web site: www.lrrb.org.

Professor **John Nieber** of the Department of Biosystems previewed another LRRB-funded project, this one a subsurface drainage manual for pavements. The project was based on an idea from **Tim Anderson** and **Glenn Engstrom** of Mn/DOT’s Maintenance Research Office submitted through the CTS problem statement process, Nieber said. The manual is scheduled for publication this fall.

Michael Darter, director of the

chair of the Department of City and Regional Planning at the University of California, Berkeley, presented “Transit-Oriented and Balanced Growth: Traffic and CO₂-Reducing Potential.” He described work showing that compact, mixed-use development reduces vehicle-miles traveled and correspondingly, CO₂ emissions.

The second seminar featured Professor **Mark Z. Jacobson** of the Department of Civil and Environmental Engineering at Stanford University, who presented “A Renewable-Energy Solution to Global Warming.” He discussed how wind, solar, hydroelectric, and geothermal power



The home page for the “Green Roads” rating system

Pavement Research Institute at the University of Minnesota, discussed a major project funded through the second Strategic Highway Research Program (SHRP 2) that will investigate the design and construction of new composite pavements (see January 2008 *CTS Report* for details).

The conference also included the presentation of the annual **Jerry Rohrbach** Pavement Conference Award to **Doug Schwartz** of Mn/DOT’s Concrete Engineering Unit.

The conference planning committee included several University representatives: **Jim Grothaus**, director of Minnesota LTAP; Darter and Skok; and **Lori Graven** and **Teresa Washington** from the College of Continuing Education.

Coverage will be published later this spring in the 2008 *Minnesota Pavement Conference Session Summaries*, available for download on the Minnesota LTAP Web site at www.mnltap.umn.edu/Publications. **CTS**

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consumption. It is evaluating these options within a larger framework that attempts to identify potential externalities and risks as well as potential policy drivers. The final report, which CTS will issue in June 2008, will identify short-term (up to 2015), medium-term (2015–2025), and long-term (beyond 2025) technologies, strategies, and policies.

Also last month, CTS initiated a GHG study seminar series to hear from national experts in the field and learn how their work could influence Minnesota’s efforts. The seminars were aired live and are available for viewing on the study’s new Web page.

At the first seminar, **Robert Cervero**,

could be used to power electric vehicles in a smart electric grid.

Two additional seminars are still to come. On April 16, **Alan C. Lloyd**, president of the International Council on Clean Transportation, will present “What States Can Do to Reduce Greenhouse Gas Emissions.” The final GHG seminar will be held May 20, doubling as the CTS Spring Luncheon (see page 1).

For more information about the study, please contact **Jan Lucke** at 612-625-8401, jlucke@cts.umn.edu, or see the study Web page at www.cts.umn.edu/Research/GreenhouseGas. **CTS**

Career Expo, ITSO conference attract students

Speakers from the public and private sectors shared advice with students at the annual Transportation Career Expo, held March 13 in Minneapolis. Sessions covered three career tracks:

- Engineering and intelligent transportation systems (ITS) careers, moderated by **Jim Grothaus** and **Linda Preisen** of CTS, with panelists **Amber Blanchard** (Mn/DOT), **Bob Moberg** (City of Plymouth), and **Jeff Lutz** (SEH, Inc.)
- Transportation planning and policy careers, moderated by **Shannon Tyree** (WSB & Associates, and chair of the CTS Education and Outreach Council), with panelists **Sam O'Connell** (Dakota County) and **Joe Barbeau** (CTS)
- Transportation logistics careers, moderated by **Judy Hartmann** (Fairview Hospital), with panelists **John Larsen** (Target) and **Meg Duncan** (Koch Logistics)

CTS hosted the event in cooperation with the Minnesota Local Road Research Board, Minnesota LTAP, WTS Minnesota, the ITS Institute, and the Council of

Supply Chain Management Professionals.

The expo followed the fourth annual Interdisciplinary Transportation Student Organization (ITSO) Student Paper Conference. Papers covered topics such as route choice behavior after the I-35W bridge collapse, cell phone traffic data, and bicycle facilities.

Following the paper sessions, student scholarships and awards were presented by ITS Minnesota, WTS Minnesota, ITSO, and CTS.

The conference concluded with a luncheon sponsored by the North Central chapter of the Institute of Transportation Engineers (NCITE). It featured a keynote discussion on speed management in Minnesota with panelists **Sue Groth** of Mn/DOT, Lt. **Mark Peterson** of the Minnesota State Patrol, and **John Bloomfield** of the Center for Human Factors Systems Research and Design at



Shannon Tyree (at podium) moderated one of the sessions.

the University of Minnesota. Bloomfield and **Kathleen Harder** evaluated the effectiveness of the Minnesota Speed Management Program (MSMP), also known as Highway Enforcement of Aggressive Traffic (HEAT), in reducing speeding and crashes on Minnesota highways (see www.cts.umn.edu/Research).

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Upcoming events

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

Apr. 15–16	Minnesota Spring Maintenance Training Expo, St. Cloud. Contact Shirley Mueffelman , 612-624-4754, cceconf2@umn.edu .	Apr. 23–25	Minnesota Alcohol and Traffic Safety Association 34th Annual Conference, St. Cloud. See www.MATSA.us or call 1-800-362-3667, ext. 7307 or 7309.	May 20–21	CTS 19th Annual Transportation Research Conference, St. Paul. Contact Sara Van Essendelft , 612-624-3708, cceconf5@umn.edu .
Apr. 16	Greenhouse Gas Seminar: “What States Can Do to Reduce Greenhouse Gas Emissions,” Minneapolis. Contact Shawn Haag , 612-625-5608, haag0025@cts.umn.edu .	Apr. 26	2008 Minnesota Bike Summit, Quality Bicycle Products (QBP) Training Center, Bloomington. See mnbikesummit@visi.com .	Oct. 1–2	Fall Maintenance Expo, St. Cloud, Minn. Contact Kathy Warren , 651-351-7432, kwarren@usinternet.com .
Apr. 23–25	Minnesota Council of Airports Annual Conference, Bloomington. Contact Judy Meyers , 651-234-7232, 1-800-657-3922, judy.meyers@dot.state.mn.us .	May 20	CTS Spring Luncheon: “Alternative Strategies to Lowering Our Carbon Footprint,” St. Paul. Contact Sara Van Essendelft , 612-624-3708, cceconf5@umn.edu .	Oct. 7–8	Toward Zero Deaths Conference, Rochester, Minn. Contact Shirley Mueffelman , 612-624-4754, cceconf2@umn.edu .
				Oct. 14–15	2008 AirTAP Fall Forum, Breezy Point, Minn. CTS