

A monthly report on transportation research, education, and information activities at the University of Minnesota

SECOND ANNUAL RESEARCH CONFERENCE PLANNED FOR MAY 7-8

The Center's Second Annual Transportation Research Conference will be held May 7-8, 1991, at the Radisson Hotel Saint Paul. The conference planning committee, chaired by **Judy Hollander**, will use feedback from the Center's first conference to help develop the second meeting. The conference will again serve as a forum for transportation researchers and practitioners from Minnesota and the Upper Midwest to share their research findings, and will include general sessions with keynote speakers and concurrent sessions covering many topics. In addition, the Center's spring luncheon speaker presentation will be held on the first day of the conference, and will feature **Anthony Kane** of the Federal Highway Administration. A Call for Presentations will be issued in October's *Monthly Report*. Please consider sharing any transportation-related research conducted by your organization.

CENTER EVENTS ANNOUNCED FOR 1990-91

In addition to the annual research conference, the Center provides other opportunities for academicians, students, and practitioners to share information. The enclosed brochure announces three types of CTS events scheduled for the 1990-91 academic year: a Luncheon Speaker Series featuring national transportation experts; a Faculty Seminar Series by U of M faculty; and a Transportation Careers Series featuring presentations to students by transportation executives. Dates and locations will be announced in upcoming issues of the *Monthly Report*.

LOCAL ROAD RESEARCH BOARD HEARS ABOUT UNIVERSITY RESEARCH

The summer meeting of the Local Road Research Board (LRRB) featured a field visit to the University, where the Center arranged demonstrations of four current transportation-related research projects. The LRRB, chaired by **Mike Wagner**, heard a status report of the Mn/ROAD project, which involves Professor **Dave Newcomb** and other civil engineering faculty. Members then visited the Human Factors Research Laboratory, where they tested a driving simulator that uses an automobile hooked to a computer graphics system. Current research at the laboratory includes work on driver behavior by Professor and Director **Peter Hancock**, and research on driver information systems by Computer Science Professor **Shashi Shekhar**. The Board then visited a laboratory developed by Professor **Bruno Franck** for research on timber bridges, which are increasingly being considered for local roads with short bridge spans. The Board's final stop was the laboratory and field site for research by Professors **Willard Koukkari** and **David Biesboer** of Plant Biology, who are developing new techniques for managing noxious weeds in highway right-of-way. The Local Road Research Board considers funding University research projects as part of its annual research program.

NATIONAL ORGANIZATION FORMED TO PROMOTE IVHS

Intelligent Vehicle/Highway Systems (IVHS) technology in the United States has taken another stride forward with the establishment of a national IVHS organization. Called the Intelligent Vehicle-Highway Society of

America, or "IVHS America," the organization is being formed by a coalition of business, government, and academic leaders to advance a national IVHS program. The new organization, based in Washington, D.C., is a nonprofit, public-private scientific and educational corporation. It succeeds Mobility 2000, an ad hoc group which will continue in operation as the technical arm of IVHS America. CTS Director **Dick Braun**, a member of Mobility 2000, will attend a meeting this month of the IVHS America steering committee to discuss the role of Mobility 2000 and other issues relating to the new organization. One of the first goals of IVHS America will be to establish a set of measurable and attainable goals for IVHS in the United States, and to develop a plan to achieve these goals.

MACHINE VISION SYSTEM WILL BE INSTALLED ON I-394

Mn/DOT and the Federal Highway Administration (FHWA) will use a traffic detection technology developed at the University on a segment of I-394 in Minneapolis. This technology uses video cameras and machine vision software to automatically detect and analyze traffic flows. A patented product, AutoscopeTM, has been developed from this technology and will be installed initially at 15 sites on I-394 as a *GuideStar* Intelligent Vehicle/Highway Systems demonstration project. The data collected will be used by Mn/DOT's Traffic Management Center to improve management of traffic flows, and by the University in its research and development of expert systems and other new tools for managing traffic. Professor **Panos Michalopoulos** and **Blake Wolf** of the University have helped develop the specifications for this installation, working closely with Mn/DOT's **Rich Lau**, **Gary Thompson** and their staffs, and **Steve Bahler** of FHWA. The construction contract letting will be in October, with work scheduled to begin in early 1991.

AUTO, ELECTRONICS COMPANIES INTERESTED IN MINNESOTA'S IVHS PROGRAMS

Several companies have recently taken a high degree of interest in Minnesota's Intelligent Vehicle/Highway Systems (IVHS) programs. Representatives from Ford Motor Company and General Motors spent a day in Minnesota last month to learn about Mn/DOT's *GuideStar* program and the University's AutoScopeTM technology. Also in August, **Gene Ofstead**, **Leo Korth**, and **Dick Stehr** of Mn/DOT, and CTS Director **Dick Braun** visited the Apple Valley research laboratory of E.F. Johnson, an electronics company with an interest in IVHS. Most major automobile manufacturers and electronics companies are determining how to position themselves for the IVHS program expected to be developed by the USDOT. It is anticipated that funding on a national level will increase appreciably during the next fiscal year, and more importantly, a dramatic funding increase is expected in the Federal Highway Act of 1992.

TRANSPORTATION DISCUSSED AT URISA MEETING

The annual conference of the Urban and Regional Information Systems Association (URISA), held in Edmonton, offered several sessions related to transportation. An increasing number of transportation agencies are integrating geographic information systems (GIS) with transportation planning models. GIS vendors, who have worked closely with government agencies on natural resources and census applications, are now turning to the transportation market, and several displayed products at the URISA exhibition. Minnesota was well-represented at the conference. **Will Craig**, assistant director of the Center for Urban and Regional Affairs (CURA) at the University, led a GIS research session and moderated several others. **Linda Tomaselli** of the Metropolitan Council and **Al Robinette** of State Planning each presented papers. **Bob Johns** of the Center presented a paper on "Transportation Information Systems Using Machine Vision Technology," which discussed the implications of IVHS on transportation data systems.

EFFORTS UNDERWAY TO ATTRACT STUDENTS TO ENGINEERING CAREERS

Several national organizations are developing education programs to increase the overall supply and quality of students in the sciences and engineering. One such effort is TRACE (Transportation and Civil Engineering Career Centers), a national program created by the American Association of State and Highway Transportation Officials (AASHTO). A primary goal of TRACE is to develop and manage outreach programs, especially at the high school level, to attract students to transportation-related fields. Center Director **Dick Braun** attended a TRACE meeting in Washington, D.C., last month, and will be involved in developing criteria for choosing pilot outreach programs. The TRACE meeting also featured discussion of other education efforts including programs by the American Public Works Association (APWA) and the American Society of Civil Engineers (ASCE). APWA has created a task force to develop a comprehensive education outreach program, and ASCE is planning a multiyear marketing campaign to encourage the best-qualified students to consider a career in civil engineering.

HUMAN FACTORS PRESENTATIONS

Professor **Peter Hancock**, director of the University's Human Factors Research Laboratory, presented a plenary paper in June to the NATO Advanced Study Institute on Automation and Systems Performance in Air Traffic Control, in Maratea, Italy. The paper was titled "Discourse Between Two Towers: The Application of Stress and Workload Principles to the Air Traffic Controller." In addition, two papers by Hancock were published in journals recently: "Driver Workload During Differing Driving Maneuvers," in *Accident Analysis and Prevention*, and "Motorcycle Conspicuity: An Evaluation and Synthesis of Influential Factors," in the *Journal of Safety Research*.

REGISTRATION FOR FALL QUARTER TRANSPORTATION CLASSES

September 12 is the last day to register without a late fee for most fall quarter classes at the University. One of the four courses established through the Institute on Advanced Transportation Systems, "Topics in Planning: Transportation Policy and Planning," is being held this fall on Tuesday evenings at the Humphrey Center. In addition, three other transportation-related courses are available this fall through Extension. For further details concerning these courses, please contact the Extension Office at (612) 625-3333.

UPCOMING TRANSPORTATION EVENTS

If you have an event you would like publicized, please call the Center at (612) 626-1077.

- September 11 North Central Institute for Transportation Engineers (ITE) Monthly Meeting, Lido's, Roseville, Minnesota. Contact **Stephen Alderson** at (612) 291-6337.
- October 3 CTS Faculty Seminar: "Prestressed Bridge Girder Reusability," by Professors **Roberto Leon** and **Catherine French**, 3:30-4:40 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Open to the public. Contact CTS at (612) 625-3019.
- October 10 Annual Meeting, Minnesota Transportation Alliance, St. Paul Radisson, St. Paul, Minnesota. Contact **Jerry Anderson** at (612) 379-7227.
- October 10 Regional Transit Board Annual Conference, Holiday Inn North, Brooklyn Center, Minnesota. Contact **Suzanne Hanson** of the RTB at (612) 229-2720.

- October 11 CTS Transportation Careers Series--transportation leaders speaking to U of M students on career opportunities. **Eugene Ofstead**, Assistant Commissioner, Minnesota Department of Transportation, 12:15-1:15 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Contact CTS at (612) 625-3019.
- October 11 North Central Institute for Transportation Engineers (ITE) Monthly Meeting, Charthouse, Lakeville, Minnesota. Featuring a tour of the air traffic control center in Lakeville. Contact **Stephen Alderson** at (612) 291-6337.
- October 11-12 Minnesota Public Transit Association's Annual Conference, Holiday Inn North, Brooklyn Center, Minnesota. Contact **Janice Hennings** at (612) 884-7439.
- October 17 CTS Faculty Seminar: "The Role of Transportation and Communication Linkages in Enabling Communities to Adapt to Economic and Social Change," by Professor **Robert Einsweiler**, 3:30-4:40 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Open to the public. Contact CTS at (612) 625-3019.
- October 18 CTS Transportation Careers Series--transportation leaders speaking to U of M students on career opportunities. **Terrence Stone**, Executive Director, Region Nine Development Commission, 12:15-1:15 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Contact CTS at (612) 625-3019.
- October 31 CTS Faculty Seminar: "Simulation Software for Modeling Pavement Response at the Minnesota Road Research Project (Mn/ROAD)," by Professor **Marius Poliac**, 3:30-4:40 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Open to the public. Contact CTS at (612) 625-3019.
- November 8 CTS Transportation Careers Series--transportation leaders speaking to U of M students on career opportunities. **Larry McCabe**, Vice President, Mesaba Airlines, 12:15-1:15 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Contact CTS at (612) 625-3019.
- November 15 Center for Transportation Studies Fall Quarter Luncheon and Speech: **Marcia Lowe**, "Alternatives to Automobile Dependency." Radisson University Hotel, Minneapolis. Contact CTS at (612) 626-1077.
- November 28 CTS Faculty Seminar: "Rural Transit Service Design," by Professor **Yorgos Stephanedes**, 3:30-4:40 p.m., 205 Civil and Mineral Engineering, University of Minnesota, Minneapolis. Open to the public. Contact CTS at (612) 625-3019.