

# MTC Asset

MIDWEST TRANSPORTATION CONSORTIUM ~ SUMMER 2000 ~ Vol. 1, Issue 1



David Plazak

Welcome to the first issue of *MTC Asset*, the newsletter for the Midwest Transportation Consortium (MTC).

The MTC is a new partnership of six universities in two states dedicated to building a community of interest around an important, emerging issue: transportation asset management. This partnership was established to compete for one of the regional university transportation center grants made available every five years by the US Department of Transporta-

tion. We were successful in the 1999 competition and began operations in late fall of that year as the university transportation center for US Department of Transportation region 7.

The region that the MTC serves, including the states of Iowa, Kansas, Missouri, and Nebraska, contains a very extensive and complex

that provides information and tools helpful for better managing existing assets such as pavements, bridges, public transit vehicles, railroad tracks, rail cars, aircraft, and barges. The idea behind asset management is to get the best possible return on investments in the existing transportation system by using information systems and decision-support tools.

ment to the table. For example, Iowa State and Missouri-Columbia both have extensive experience with pavement and bridge management systems for the public sector. The University of Missouri at St. Louis has considerable expertise working with private sector transportation asset management and business logistics issues. Faculty and staff from a variety of disciplines, including civil engineering, urban and regional planning, business logistics, geography, and industrial technology are involved in the MTC.

The MTC has several roles to play in developing the asset management community of interest in region 7:

• **Education.** The major focus of the MTC is in developing human capital for the public and private sector transportation organizations in

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## From the Director

transportation system worth tens of billions of dollars. Some of the busiest interstate highways, commercial airports, railroads, and inland waterways in the nation are located in this region. Their efficient functioning is critical to our economy and our quality of life. The state departments of transportation and others in the region currently are making a transition from building transportation systems to more effectively managing those systems. Asset management is an approach

The six university partners in the MTC are

- Iowa State University
- The University of Missouri at Columbia
- The University of Northern Iowa
- The University of Missouri at St. Louis
- The University of Missouri at Kansas City
- Lincoln University of Missouri

Each of the partner institutions brings different expertise and levels of experience with asset manage-

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MTC Asset, published twice a year, promotes the Midwest Transportation Consortium's research, outreach, and education programs for developing sustainable transportation asset management principles and techniques. This free newsletter is financed by the MTC.

The MTC is the US Department of Transportation's university transportation center for federal region 7. It is located at and managed by Iowa State University's Center for Transportation Research and Education (CTRE).

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Center for Transportation Research and Education

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**T**hrough a rigorous, merit-based prospectus review process, the MTC supports research projects that add to the knowledge base regarding sustainable asset management, contain a significant technology transfer component, and include matching funds.

Each year, the MTC issues a call for prospectuses to all research universities in federal region 7. Recent applicants for the first round of project funding underwent the following assessment procedure:

Prospectuses were evaluated by a review panel consisting of David Plazak, the MTC's director; Charles Nemmers, the associate director; Paul Toussaint, University of Kentucky Transportation Center;

and Frank Bothello, Office of Asset Management, Federal Highway Administration.

Selected prospectuses were developed into full proposals.

Proposals were screened and prioritized by research directors at the four region-7 state transportation agencies.

for *Management of Slope Construction and Repair Activities—An Asset Management Building Block*. Principal Investigators: J. Erik Loehr and Kristen Sanford Bernhardt, University of Missouri–Columbia (matching funds from Missouri Department

## MTC sponsors regionwide research

The original prospectus review panel assessed the prioritized proposals and finalized funding decisions.

Of the 11 original prospectuses submitted for consideration, the following six have been selected for funding, subject to availability of matching funds:

- *Addressing Integration Issues and Developing a Protocol for Integration of Global Positioning Systems Data with Linear Referenced Data in an Asset Management System*. Principal Investigator: Shauna Hallmark, Iowa State University (matching funds pending from the Iowa Department of Transportation)

- *GIS-based Integrated Rural and Small Urban Transit Asset Management System*. Principal Investigators: Carl Kurt and Joel Lee, University of Kansas (matching funds from the University of Kansas)

- *Decision-Support System*

of Transportation and University of Missouri–Columbia)

- *Roadway Asset Management System Manual for Local Governments*.

Principal Investigators: Ali Roohanirad, Stanley Niu, and Anil Misra, University of Missouri–Kansas City (matching funds from Missouri's Local Technical Assistance Program, University of Missouri–Kansas City, and private supporters)

- *Artificial Intelligence-Based Optimization of Management of Snow Removal*. Principal Investigators: Mohammed Salim, Marc Timmerman, Tim Strauss, and Michael Emch, University of Northern Iowa (matching funds from University of Northern Iowa)

- *Development of a Model Asset Management Strategic Plan*. Principal Investigators: Omar Smadi and Tom Maze, Iowa State University (matching funds pending from Iowa Department of Transportation) •

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region 7. State DOTs, metropolitan planning organizations, consulting firms, and other employers are now facing critical shortages of trained professionals. The MTC is providing enhanced educational experiences for students and building better connections between members universities and potential employers.

•**Research.** The MTC is funding a focused program of university research on topics vital to implementing transportation asset management. Several research projects are already underway. Others will be soon.

•**Outreach and Technology Transfer.** The MTC will distribute the results of its research program around the region and the nation. It is also working on a variety of outreach programs related to asset management, including programs on Government Accounting Standards Board Statement No. 34 (affectionately

known as GASB 34). GASB 34 is an accounting standard that will effectively promote the adoption of asset management by many transportation organizations.

•**Distance Education and Sharing.** The MTC is planning to aggressively use the World Wide Web and other telecommunications and information technologies to carry out its mission. For example, a seminar course (partly on asset management topics) was jointly offered at three of the partner universities via videoconferencing during the spring semester 2000. The MTC is also developing online transportation research and distance education clearinghouses for region 7.

If you wish to collaborate with the MTC or need more information, please feel free to contact me or Associate Director Charlie Nemmers (see contact information on page 2). •



David White

Iowa State University graduate student David

White claimed the \$1,000 prize for best research paper at the

1999 region 7 Fall 2000 Transportation Scholars Conference at Iowa State University. David received the award for his paper "Rapid Soil Identification and Classification for Highway Embankment Construction."

The conference is part of region 7's Transportation Scholars program for exceptional students in transportation-related fields.

David was also named the MTC's Transportation Scholar of the Year for 1999–2000. He received his award from US Department of Transportation Secretary Rodney Slater at the Transportation Research Board meetings in Washington, DC, in January 2000. •

## Scholar's prize

## MTC goals

### Education

- Establish Transportation Scholars Program at all member institutions with 40 students participating annually.
- Establish an online Virtual Transportation University with real-time and non-real-time distance learning programs for region 7.
- Increase diversity by working closely with Lincoln University and partnering with partner university offices of minority student affairs.

### Research

- Develop a body of research in the theme area (transportation asset management) by researchers in a variety of disciplines within region 7.

- Assure regionwide, quality research through a solicitation process and two-tiered, unbiased peer review of prospectuses.
- Coordinate research with region 7 universities and other US Department of Transportation–sponsored university transportation centers.

### Technology Transfer and Outreach

- Provide project-level reports, manuals, software, and other research products.
- Provide program-level, regional/national workshops, conferences, and seminars.
- Establish regional, online Virtual Transportation Community (the "TransHub" to provide online research briefs, threaded electronic forums, etc., to serve region 7. •

**E**nsuring that the MTC lives up to the promise of its ambitious strategic plan is the undertaking of the consortium's **directors:**

Director David Plazak, associate director for policy at Iowa State University's Center for Transportation Research and Education (CTRE), is dedicated to enhancing transportation research, education, and technology transfer programs at MTC partner universities and promoting sustainable asset management within region 7. David received his MA in urban and regional planning from The University of Iowa.

MTC's Associate Director **Charles Nemmers** is the director of the Transportation Infrastructure Center at the University of Missouri-Columbia, where he helps coordinate the university's Transportation Scholars program. He actively



**Charles Nemmers**

works with other consortium universities in Missouri, encouraging them to participate actively and take advantage of the programming assistance available through the MTC. Charles received his master's degree in public administration from Ohio State University.

The MTC's **education coordinators** are responsible for developing or enhancing Transportation Scholars programs at their respective universities, as well as working to improve the breadth of their transportation-related curricula:

**Linda Bickel** is dean of the College of General Studies at **Lincoln University**. Because Lincoln does not yet have a transportation curriculum, she is focusing on interesting students in transportation careers and strengthening their connections to professionals in the field. She received her PhD in higher and adult education from the University of Missouri-Columbia.

**Ray Mundy** is the recently appointed director of the Center

for Transportation Studies and the Barriger professor of transportation and logistics at the **University of Missouri-St. Louis**. Ray appreciates how funding from MTC has already enabled the center's first graduate student class to begin its studies, primarily researching chain management and asset utilization. He received his PhD in business administration with an emphasis in transportation and logistics from Pennsylvania State University.

of a transportation program at UNI and promotes collaborative research and education efforts with other universities in the region. Tim earned a PhD in geography from the University of Washington.

**Gary Thomas** is an assistant professor in **Iowa State University's** Department of Civil and Construction Engineering and a transportation engineer at CTRE. His goals for the MTC's educational program include exploring ways to expand the distance learning

## Meet our key staff

**Stanley Niu** is the associate chairman of the Department of Civil Engineering at the **University of Missouri-Kansas City**. He coordinates faculty research with other MTC institutions, encourages students to participate in transportation-related seminars and graduate study in transportation, and offers transportation-related short courses to local and state employees. Stanley received his PhD from the University of Wisconsin.

**Tim Strauss** is an assistant professor in the **University of Northern Iowa's** (UNI) Department of Geography. He supports the establishment and development

capabilities in region 7 and helping to generate interest in Lincoln University's new transportation program. Gary has a PhD in civil engineering with an emphasis in transportation from Arizona State University.

**Mark Virkler** is a soon-to-be professor of civil and environmental engineering at the **University of Missouri-Columbia**. Mark plans to ensure the Transportation Scholars program at UMC continues to produce high-quality graduate students who have learned from a wide variety of out-of-classroom educational experiences. He holds a PhD in civil engineering from the University of Virginia. •