

# Student news

## HR Green Scholars

Beginning in fall 2002, the MTC matched funding provided by the Howard R. Green Company to establish a graduate assistantship in transportation at Iowa State University. HR Green is a regional engineering and planning consulting firm based in Cedar Rapids, Iowa. The assistantship allows students who meet rigorous selection criteria to independently select and study transportation issues under the guidance of an



Molly O'Brien helps fly a helikite.

academic advisor. HR Green has been a major employer of graduating Iowa State University students in recent years and expressed a strong interest in assisting the university in the development of human capital for the region's transportation agencies and companies.

Two students were selected to share the first

graduate assistantship. Molly O'Brien and Jonathan Rees both worked at Iowa State University's Center for Transportation Research and Education (CTRE).

One of Molly's projects included researching the use of helikites (helium balloon kite combinations) as rapidly deployed unmanned aerial vehicles for surveillance, data collection, and infrastructure management. She also worked on a project involving a manual method of land use change detection to help determine locations for conducting traffic counts for the Iowa Department of Transportation. For her thesis Molly is investigating the effectiveness of all-red clearance time on intersection

accidents and violation trends. She plans to graduate in December 2003 and work in the consulting industry as a traffic engineer.

Jon's first project was to identify and map all winter-related accidents that occurred in the state of Iowa over the past decade. Jon has also been working on corridor management studies for the Iowa Department of Transportation concerning U.S. 20 in Dubuque County and Iowa 163 from Pleasant Hill to Monroe, just east of Des Moines. Jon's duties include identifying access-related crashes along each corridor, mapping them using ArcView and ArcGIS, and documenting the study. Jon is currently brainstorming ideas for a thesis topic, which will likely involve corridor management. He plans to graduate in May 2004 and work for either a private or public agency as a transportation planner.



Jon Rees

# Recent

## Mid-Continent Transportation Research Symposium

The MTC co-sponsored this symposium, which was held August 21–22, 2003, at Iowa State University. Two concurrent sessions addressed asset management topics. Papers, which are available online at [www.ctre.iastate.edu/pubs/midcon2003/](http://www.ctre.iastate.edu/pubs/midcon2003/), included the following:

- Local Government Adoption of Asset Management by Ernie Wittwer, Jason Bittner, and Char Kasprzak, Midwest Regional University Transportation Center at the University of Wisconsin-Madison
- GASB Statement 34—The On-Ramp to Transportation Asset Management or a Detour Leading to Business as Usual? by Tom Maze and Omar Smadi, CTRE at Iowa State University
- Transportation Asset Management Today: An Evaluation of an Emerging Virtual Community of Practice by Jeromie Winsor, Laxmi Ramasubramanian, and Sue McNeil, University of Illinois at Chicago; Lou

Adams, New York State DOT

- Utilization of LIDAR Technology for Highway Inventory by Huda Shamayleh and Aemal Khattak, University of Nebraska-Lincoln
- Extraction of Transportation Infrastructure from Hyperspectral Remote Sensing Data, James Gerjevic, University of Northern Iowa
- Application of GIS to Emergency Management, Cynthia Wilson Orndoff and Raman Deep Mata, University of Missouri-Columbia

## National Bridge Live Load Testing and Rating Workshop

Last March the MTC organized, developed, and hosted the first-ever “National Bridge Live Load Testing and Rating Workshop” in Kansas City, Missouri, where the University of Missouri-Columbia showcased its field bridge load-testing vehicle. Approximately 90 people attended and actively participated in the event.

## User Benefits of Winter Maintenance – Intercity Traffic During Winter Storms

(Tom Maze, Iowa State University)

Winter storm maintenance is generally understood to be beneficial. Comparing the value of investments in winter maintenance versus other things, such as roadside safety devices, is difficult because of the lack of analytical information. The objective of this project is to better quantify the logistics costs of reducing the level of service and of closing intercity highway routes because of winter weather. The project will also determine safety implications and traffic pattern changes due to weather-induced road closures, and if feasible, identify measures of user cost due to winter storm-induced road closures and severe winter storms.

## Roadway Alignments as Assets: Evaluating Alternatives for Valuing Major Highway Corridor Rights-of-Way

(David Plazak, Iowa State University)

In the United States, there are approximately 625 billion square feet of public roadway rights-of-way with a potential book (original) valuation of about \$3.5 trillion, or \$70 billion in an average-sized state. A series of short-sighted decisions about direct accesses, traffic signals, median breaks, or adjacent land development could significantly diminish the value of such assets. The main objectives of this project are to explore alternative means of valuing right-of-way, to understand what these different approaches to valuation imply, and to determine which one presents the best picture of the value of the assembled right-of-way.

## A Web-based Implementation of Winter Maintenance Decision Support System Using GIS and Remote Sensing

(Ramanathan Sugarman, University of Northern Iowa)

Winter maintenance, particularly snow removal and the stress of snow-removal materials on public structures, is an enormous budgetary burden on municipalities and non-governmental maintenance organizations in cold climates. Lately, geo-spatial technologies, chiefly involving the use of GIS for mapping and route-generation, are providing a valuable tool for planning snow removal operations. However, most are not constructed with a non-technical user in mind. The objective of this project is to implement a web-based winter maintenance decision support system that improves the ability of stakeholders to evaluate different procedures for optimally managing assets for snow removal. This will be accomplished by integrating geo-spatial analytical techniques, a snow removal asset management system developed with support from the MTC, and spatial decision support systems.