



## A NOTE FROM THE DIRECTOR – JOHN J. MYERS

Good news to report from UMR's National Center for Transportation Infrastructure and Safety. In June 2007, the USDOT Research and Innovative Technology Administration (RITA) officially informed UMR that our 5-year Strategic Plan for the Center was officially approved. This officially lifted the "initial limitation on funding" under our UTC grant agreement, and we are now able to use the full amount of funding awarded to date in accordance with the UTC grant terms and Federal regulations. Naturally, we want to thank so many of the Project Investigators (PIs) that have been patiently waiting for your University Transportation match funding to be released. Should you have any questions or concerns about the status of your UTC request, please feel free to contact myself at [jmyers@umr.edu](mailto:jmyers@umr.edu) or our Administrative Assistant, Ms. Gayle Spitzmiller at [spitz@umr.edu](mailto:spitz@umr.edu) at any time.

Another item to note in this newsletter is that very soon our website (<http://www.utc.umr.edu>) will be taking on a new appearance to represent the National Center status. Please feel free to check it regularly for updates. The website provides a great forum for all of the center's activities including all of the technology transfer reporting. I should also note that some changes in the UTC funding request forms will occur and will be posted shortly at <http://campus.umr.edu/utc/fundgrms/index.htm>. A UTC faculty forum on the Rolla campus will be held in a few weeks after fall semester classes resume informing faculty and interested parties on some of the changes that are occurring with our National Center stature.

I would also like to remind faculty members of our UTC Graduate Fellowship Program at UMR entitled "Graduate Studies & Research in Transportation Areas" to support the next generation of Ph.D. students with transportation interests and the long-term

goal to work in academia. Applications are currently being accepted for Spring of 2008. Research assistantships, consisting of financial aid of \$22,000 per year, are available for outstanding students. Please use the link above to obtain information on minimum requirements and how to apply.

I now invite you to read about some of the highlighted activities in this quarter's newsletter that have been at least partially supported by our UTC. Thanks go out to all of our UTC partners and project investigators that have made a difference by making a positive impact on so many lives around the region and within the US.

Warm Regards, John

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## UPCOMING EVENTS

**Sixth International Conference on Case Histories in Geotechnical Engineering**

August 11–16, 2008

Arlington, VA

[www.6icchg2008.org](http://www.6icchg2008.org)

**6th National Seismic Conference on Bridges and Highways**

July 27–30, 2008

Charleston, SC

[www.scdot.org/events/6NSC](http://www.scdot.org/events/6NSC)

*\*See page 3 for important updates on both conferences*



## BEST PRACTICES FOR IMPLEMENTING A BIODIESEL PROGRAM



**Scott E. Grasman**

Based on state legislation, 75 percent of all diesel used by the Missouri Department of Transportation's (MoDOT) diesel fleet shall be biodiesel (20 percent biodiesel blend, referred to as B20). MoDOT used five to six million gallons of diesel annually, which results in approximately 4.5 million gallons of B20 each year.

However, implementing the use of biodiesel has been challenging. Issues with pricing and availability, fuel quality, and winter operability have made it difficult to meet the requirements of state legislation. Although there are states that use biodiesel with year-round success, MoDOT currently only uses biodiesel from April through October because of cold weather challenges. In addition, fuel efficiency and impact on equipment, including vehicle life and repair and maintenance costs, are additional areas that need to be addressed.

In accordance with this need, UMR researchers are reviewing policies and procedures of other state governments, DOTs, or agencies to provide best practices for implementation of a biodiesel program. The objective of the UTC sponsored project is to establish best practices for implementation of biodiesel programs, including best practices for pricing and availability, recommendations for ensuring fuel quality and year-round operability, as well as maintenance procedures and documentation of reported vehicle problems due to biodiesel.

For more information on this program, please contact Scott Grasman at [grasmans@umr.edu](mailto:grasmans@umr.edu).

## HIGH SCHOOL GIRLS "WALK ON THE WISE SIDE" AT UMR'S SUMMER SOLUTIONS ENGINEERING, SCIENCE, AND TECHNOLOGY CAMP

### Who says girls and women aren't cut out for science or engineering?

June 18–22, 2007, 35 girls from high schools across the nation were on the campus of the University of Missouri-Rolla to participate in UMR's Women In Science and Engineering (WISE) annual Summer Solutions Camp, which is designed to introduce young female students to careers in science, engineering, and technology. "We are trying to continue to increase the number of female students in the fields of science and engineering at UMR," says Cindi Vogt, coordinator of UMR's WISE program.

During the camp, students interacted with UMR professionals and got an introduction to the various fields of study. The program prepares students for college and also gives them a better understanding of what it will take to pursue engineering or science as a profession, Vogt says.

The girls, who will be freshmen or sophomores in high school, came from nine states, including Missouri. They also experienced campus life during the week, staying in one of UMR's residence halls. "The girls participated in fun, hands-on learning activities," Vogt says. "They also learned what kinds of jobs, salaries, and benefits come with science and engineering. They interacted with professors and current students, competed in team design projects, learned about college admissions and financial assistance, and had a lot of fun."

UMR's 2007 Summer Solutions Camp was coordinated by UMR's Women in Science and Engineering program and the Women's Leadership Institute at UMR. Sponsors of the camp included UMR and the University Transportation Center.



## 6TH NATIONAL SEISMIC CONFERENCE ON BRIDGES AND HIGHWAYS

### SEISMIC TECHNOLOGIES FOR EXTREME LOADS



#### Call for Abstracts

Conference Organizers are pleased to announce the sixth in a series of biennial seismic conferences. The Technical Committee is soliciting abstracts of papers that can help others understand and mitigate damage to the nation's highway infrastructure from earthquakes and other natural hazards (e.g., hurricanes). Papers will be judged and selected on merit for presentation during plenary sessions, technical sessions grouped according to topic, and an interactive poster exhibit. It is anticipated that 65 papers will be selected for oral presentation during the conference and approximately 25 papers will be selected for the Poster Session. Two awards will be presented for best papers.

An abstract submission form can be found on the conference web site, [www.scdot.org/events/6NSC](http://www.scdot.org/events/6NSC). Abstracts (200 words maximum) are due no later than October 1, 2007. The Technical Committee will complete the selection process and notify authors of acceptance by December 15, 2007. Final papers will be due no later than March 15, 2008. Please send abstracts to: [6NSC@scdot.org](mailto:6NSC@scdot.org)

#### For more information about sponsoring or exhibiting:

Jerome O'Connor, P.E., MCEER, Conference Coordinator  
[jso7@buffalo.edu](mailto:jso7@buffalo.edu)

#### Charleston Convention and Visitors Bureau:

[www.charlestoncvb.com/visitors/index.html](http://www.charlestoncvb.com/visitors/index.html)

#### Conference Hotel: Francis Marion

[www.francismarioncharleston.com](http://www.francismarioncharleston.com)

Conference Website: [www.scdot.org/events/6NSC](http://www.scdot.org/events/6NSC)



### 6ICCHGE UPDATE

Arlington, VA (USA) ~ August 11-16, 2008

Over 350 papers from 50 countries have been accepted for the Sixth International Conference on Case Histories in Geotechnical Engineering and symposium in honor of professor James K. Mitchell. All information on registration, exhibition, the short course on "Soil Dynamics in Engineering Practice," and the spouses program are listed on the conference website: [www.6icchge2008.org](http://www.6icchge2008.org). For more information, please contact Dr. Shamsheer Prakash, conference Chairman, at [Prakash@umr.edu](mailto:Prakash@umr.edu).



## FREIGHT OPTIMIZATION AND DEVELOPMENT IN MISSOURI – WATERWAYS AND PORTS MODULE

**Scott E. Grasman and Ganesh Kumar Venayagamoorthy**

The Missouri Department of Transportation (MoDOT) seeks to achieve a greater role in national freight movement by capitalizing on its central location within the freight transportation system and the extensive infrastructure within Missouri. Current trends in domestic and international freight movement will impact Missouri as a freight handling center. Other emerging trends (*e.g.*, production of alternative fuels) will impact Missouri's port infrastructure since many of the raw materials and by-products of biofuels are ideally suited for barges and river ports. How those trends and impacts can be incorporated into a freight and logistics development model that supports efficient allocation of public investment resources is the focus of a current UTC sponsored study. In conjunction with TranSystems, UMR researchers are working to developing a freight and logistics prioritization model for Missouri that initially focuses on ports and waterways but is compatible with other modes. The model is expected to provide decision support for prioritized

investment and development decisions related to the increased freight and logistics development in Missouri.

Investigators are analyzing the Missouri Planning Framework for Transportation Decision-Making to understand current needs identification and prioritization processes, as well as reviewing Missouri's freight and logistics status, focusing on criteria required to prioritize projects for port and waterways, including business and structural relationships, policy issues, commodity movements and potential commodity/product movement, along with overall efficiencies. The relevance of successful freight and logistics development models/frameworks is being used to develop a prioritization model consistent with Missouri's planning and decision-making processes. Collaborative partners are ensuring that the models are consistent with relevant data related to industry and economic trends and assisting with application of the multicriteria decision making models.





IT'S

A

GIRL

THING



**In the lab**

For three days this summer, 7th and 8th grade girls got a chance to learn how math and science can be fun, cool, and not just for boys. From freezing marshmallows in the chemistry lab to observing controlled explosions in UMR's experimental mine, these middle-school girls experienced science and technology in a way they won't soon forget.

"It's A Girl Thing" is co-sponsored by UMR's Women in Science and Engineering Program (WISE) and the University Transportation Center (UTC). The camp is in its second year and was created after the popularity and success of UMR's 9th and 10th grade girls' summer camps. Science, Technology, Engineering, and Math (STEM) careers are traditionally underrepresented when it comes to minorities and women. The key to increasing their numbers in these fields is exposing young women early on to the excitement and benefits of STEM careers—a cause many female faculty and staff are quite passionate about. Therefore, the campus is particularly pleased about the great turnout from all over the country. In fact, considering the great turnout this year, the camp is expected to expand to a week-long program next year.



**In UMR's Experimental Mine**

**For more information,  
contact WISE at  
[wise@umr.edu](mailto:wise@umr.edu).**

**Outside the mine, sporting  
brightly colored hardhats**





## University of Missouri-Rolla (UMR) to become Missouri University of Science and Technology (Missouri S&T)

Rolla, Missouri – Effective Jan. 1, 2008, the University of Missouri-Rolla (UMR) will become Missouri University of Science and Technology (Missouri S&T).

The University of Missouri Board of Curators approved the name change on April 6, 2007.

The new name offers significant advantages to the university.

- To reflect our national mission. The name Missouri University of Science and Technology (Missouri S&T) will better define the university as one of the nation's leading technological research universities.
- To differentiate the university from the other University of Missouri campuses. "We are unique among the four campuses because of our technological mission," says Chancellor John F. Carney III. "We believe the new name will help to differentiate this university in a highly competitive university market and provide a national competitive advantage."
- To better recruit the best and brightest science and technology students. With fewer than 5 percent of our nation's college-bound high school seniors expressing an interest in engineering, our university must recruit on a national – and global – scale to attract the most talented students for these fields.
- To enhance the university's reputation. While the name UMR is known in much of the Midwest and in specialized circles, it is less well known nationally and internationally. A more descriptive name that reflects our mission as a technological research university should help us achieve greater national visibility.

The university will continue to offer the same great academic programs in science, engineering, the liberal arts and humanities, and business and management – from undergraduate to the Ph.D. levels.

For more information about the name change, read the position paper, "The Case for a Name Change," online at [www.umn.edu/namechange](http://www.umn.edu/namechange).

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