

**COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY  
SEPTEMBER 2007**

**GOOD NEWS**

**BIOLOGICAL SCIENCES**

Dr. Steve Mercurio, Professor, was accepted to go to Dallas for the Society of Toxicology Undergraduate Focus Group to discuss undergraduate education in the field. This group includes faculty from diverse institutions with varying professional experience, which creates opportunity for rich conversations. The event takes place on October 12-14, 2007.

Daghini, E., X.Y. Zhu XY, D. Versari, **M.D. Bentley**, C. Napoli, A. Lerman, & L.O. Lerman. 2007. Antioxidant vitamins induce angiogenesis in normal pig kidney. *Am J Physiol Renal Physiol*. 293:F371-F381.

Zhu, X.Y., **M.D. Bentley**, A.R. Chade, E.L. Ritman, A. Lerman, & L.O. Lerman. 2007. Early changes in coronary artery wall structure detected by micro computed tomography in experimental hypercholesterolemia. *Am J Physiol Heart Circ Physiol* 293:H1997-2003.

**COMPUTER SCIENCE**

Drs. Rebecca Bates, Computer Science, and Cheryl Radeloff, Women's Studies, presented "A Feminist Genealogy Project: Integrating Technology with Feminist Scholarship" at the National Women's Studies Association 28th Annual Conference in St. Charles, IL, June 28-July 1, 2007.

**ELECTRICAL AND COMPUTER ENGINEERING AND TECHNOLOGY**

Dr. Gale Allen presented a paper, "Hands-On Hardware and Simulation Experiences Used to Improve an Analog Communications Technology Course", at the 2007 ASEE North Midwest Regional Conference, Houghton, MI, September 20-22, 2007.

Qun Zhang and M. Imran Hayee, "Symmetrized SSF scheme to control global simulation accuracy in fiber optic communication systems", to appear, Vol. 25, No. 1, *IEEE/OSA Journal of Lightwave Technology*, January 2008.

Qun Zhang and Han-Way Huang, "On the use of Gaussian approximation for reliable performance evaluation in optical DPSK systems", to appear, *International Journal of Performance Engineering*, Vol. 3, No. 4, pp. 501-503, October 2007

**INTERIOR DESIGN AND CONSTRUCTION MANAGEMENT**

Farid Jean Sabongi, Assistant Professor, was in the United Kingdom in August where he visited the University of Bath and the University of Westminster-London. He conferred with faculty and staff at both universities and toured the campuses to learn about their courses, facilities and research, especially course

materials and research opportunities he can bring to MSU. The University of Westminster-London offers an Honours Construction Management program for undergraduates. The University of Bath has a Centre in Innovative Construction Materials, which includes an international management program and research center.

### **INFORMATION SYSTEMS AND TECHNOLOGY**

Dr. Christophe Veltsos completed a three-day workshop entitled Security and Forensics Education offered by Minneapolis Community and Technical College and funded by the U.S. Department of Justice's Bureau of Justice Assistance. The workshop provided hands-on training in computer forensics and digital investigation tools and techniques, as well as legal issues surrounding cyber crime, identity theft, and other information security threats.

### **MECHANICAL AND CIVIL ENGINEERING**

Drs. Jin Park and Namyong Lee gave a presentation/publication at CANCAM 2007 (21st Canadian Congress of Applied Mechanics), Toronto Canada: Park, J. Y. and Lee, N., "A Micromechanical Modeling Technique Applied to Pultruded Composites Containing Clay Particles," *Proceedings of CANCAM 2007, Toronto, Canada, 2007*.

A paper submitted by Dr. Jin Park and his graduate students, Timothy Fay and Tye Davis, was accepted by ASME International Congress 2007 as a full technical paper: Park, J. Y., Fay, T. and Davis, T., "A Study on Clay Particle Effect to the Mechanical Properties of Polymer Composites under Shear Loading," ASME International Congress and Exposition, Seattle, WA, 2007.

### **MNCEME**

Project Lead the Way, of which MNCEME is the driving force in Minnesota, was chosen as the Minnesota High Tech Association Tekne Award finalist for Innovative Collaboration awards.

<http://www.tekneawards.org/>

### **PHYSICS AND ASTRONOMY**

Dr. Russ Palma has had a paper entitled "Helium and Neon Abundances and Compositions in Cometary Matter" accepted for publication in *Science*. Undergraduate physics major Jake Simones is a co-author.

Dr. Paul Eskridge presented a seminar on 9/27 as part of the Clint Crosby/Lockheed Martin Physics & Astronomy Seminar Series. The seminar was entitled: "Galaxy evolution up close--using image dissection to study the histories of nearby galaxies".

### **WATER RESOURCES CENTER**

*The Water Resources Center has two new staff members:*

Rick Moore started on September 24 as our new GIS Specialist. Rick comes from the Mid-Minnesota Regional Development Commission and will be assisting on several WRC/Cooperator projects, including drainage records preservation,

interactive watershed tools development, and the Cannon River Clean Water Partnership. Rick is a MSU Mankato graduate, having received a M.S. degree in Geography and GIS. CSET faculty, staff, and students in need of GIS consultation are certainly welcome to contact Director Fisher and inquire about Rick's availability to provide assistance.

Scott Bohling will start on October 1 as our new TMDL Research Analyst. Scott comes from the Lily-Center Creek Clean Water Partnership and has been employed as the Martin County Water Planner for the past several years. Scott will be working on the Blue Earth River Turbidity TMDL Study, assisting with the Cottonwood and Redwood River TMDL projects, providing support on the Lake Crystal TMDL study, and working on several erosion models.

In the July, 27, 2007 issue of the *North American Journal of Aquaculture*, WRC Director Shannon Fisher co-authored a paper entitled "Environmental Influences on Walleye Fingerling Production in Southwestern Minnesota Shallow Lakes." This paper was a product from three years of research he completed while working for DNR Fisheries prior to coming to MSU, Mankato.

The WRC has been notified that a 319 grant proposal to the Minnesota Pollution Control Agency for approximately \$215,000 has been approved and will arrive some time this winter. As part of the project, staff and a graduate assistant will evaluate nutrient and bacterial transport via agricultural tile lines in areas fertilized with manure applications. In addition, the WRC has received a \$220,000 grant to continue monitoring efforts in the Great Blue Earth River basin.

### **CSET**

Minnesota State University, Mankato and 15 other Minnesota colleges and universities has received a \$2.45 million National Science Foundation grant to increase the number of under-represented minority students who complete undergraduate degrees in science, technology, engineering and mathematics.

The statewide alliance, along with the Science Museum of Minnesota and the Minnesota High Tech Association, will receive the \$2.45 million grant over the next five years as part of the NSF's Louis Stokes Alliances for Minority Participation program. The program is a federal education initiative aimed at increasing the number of under-represented minorities who complete baccalaureate degrees in science, technology, engineering and mathematics.

In the next five years the North Star STEM Alliance aims to double the number of baccalaureate degrees earned by minority groups that are historically under-represented in science, technology, engineering and mathematics. These include African American, Hispanic/Latino American, and Native American students.

The alliance will focus on the critical transition points for students, including high school to first year of college, from two-year colleges to four-year colleges,

from lower division baccalaureate programs to specific STEM majors, and from a baccalaureate degree to STEM graduate study. The alliance's objectives include:

- Increasing the level of interest in STEM careers by secondary and postsecondary minority students;
- Increasing the number of minority students who complete a college preparatory/STEM preparatory high school program;
- Increasing the number of high school minority seniors who enroll in alliance pre-college STEM and STEM baccalaureate degree programs; and
- Increasing the number of minority students who complete an associate's degree and transfer to the four-year alliance schools, while increasing the number of minority students who persist to completion of a STEM baccalaureate degree.

The North Star STEM Alliance will provide comprehensive, long-term initiatives to address these objectives at the critical transition points. The initiatives will include alliance-wide community building conferences, programs to help students bridge from high school to college and university programs, peer-to-peer learning, undergraduate research opportunities, industry internships and professional development, and college prep science and engineering courses in high schools.

Members of the North Star STEM Alliance include the University of Minnesota-Twin Cities (lead institution); University of Minnesota-Duluth; University of Minnesota-Morris; Augsburg College; Carleton College; Gustavus Adolphus College; Macalester College; St. Olaf College; Metropolitan State University; Minnesota State University, Mankato; St. Cloud State University; Fond du Lac Tribal and Community College; Anoka-Ramsey Community College; Century College; Minneapolis Community and Technical College; North Hennepin Community College; Science Museum of Minnesota; and the Minnesota High Tech Association (MHTA).

The Stokes initiative covers 37 states, the District of Columbia and Puerto Rico. Since its inception, minority enrollment in science, technology, engineering and mathematics programs at more than 450 participating institutions has increased from 35,670 in 1991 to more than 205,000 in 2003. Annually almost 25,000 baccalaureate degrees are conferred to minority students as a result of the initiative.