

**COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY  
JANUARY 2009**

**GOOD NEWS**

**BIOLOGICAL SCIENCES**

Ryan Peck, Biology graduate student, and Dr. Marilyn Hart, Associate Professor, presented Identification of Proteins Interacting with the Beta1 and Beta2 Subunits of Actin Capping Protein at the 7th Annual Life Science Alley Conference and Exposition, Minneapolis MN.

Warner L, Gomez SI, Bolterman R, Haas JA, **Bentley MD**, Lerman LO, Romero JC (2009). Regional decreases in renal oxygenation during graded acute renal arterial stenosis: a case for renal ischemia. Am J Physiol Regul Integr Comp Physiol 296:R67-R71.

**CHEMISTRY AND GEOLOGY**

The following CSET students will be attending the National Conference of Undergraduate Research in LaCrosse, WI in April. The students' faculty mentors and respective departments are also listed. Abstract acceptance is very selective for NCUR, so this is a great accomplishment for our students and faculty. Students were selected to apply to NCUR based on the strength of their Undergraduate Research Conference grant proposal. Funding for student travel is provided through the College of Graduate Studies and Research.

Title: Vasculature Regrowth Following Partial Hepatectomy in the Rat

Student Researchers: Brittany Frank and Sarah Karalus

Research Advisor: Dr. Michael Bentley

Department: Biology

Title: Comparing the Potential Cellulosic Ethanol Production of Six Prairie Grasses

Student Researchers: Alex Cahlander-Mooers and Janet Wood

Research Advisor: Dr. Christopher Ruhland

Department: Biology

Title: PCR-SSCP Analysis of ABO Variant Alleles

Student Researcher: Yohani KG Vidana Gamage

Research Advisor: Dr. Theresa Salerno

Department: Chemistry and Geology

Title: Identifying the Specific DNA Sequence that is a Target for Potential Anti-Cancer Agent "SOS"

Student Researcher: Elizabeth Gripentrog

Research Advisor: Dr. Danae Quirk Dorr

Department: Chemistry and Geology

**COMPUTER SCIENCE**

Our Computer Science Department hosted an open round test site for the North American Computational Linguistics Olympiad on February 4, 2009. The Olympiad is a contest in which high-school students solve linguistic puzzles. In solving the problems, students learn about the diversity and consistency of

language while exercising logic skills. The top 100 scorers from the first round will be invited to the second round on March 11, 2009. The top 10 from the second round will be invited to represent the United States at the International Linguistics Olympiad held in Poland.

### **ELECTRICAL AND COMPUTER ENGINEERING AND TECHNOLOGY**

During winter break, Dr. Qun (Vincent) Zhang, Assistant Professor, gave a talk on "Optical Communication Market and R&D Trends" at Thin Film Technologies (TFT). The visit was organized by Patti Kramlinger and attended by Dr. Bill Hudson and TFT senior managers. In January 2009, Dr. Zhang and Ms. Kramlinger submitted a fund application to TFT for two commercial design automation software packages. Also, Dr. Zhang (first author) and Thin Film engineers submitted a co-authored paper in Performance Estimation of Optical Systems to the 43rd Annual Conference on Information Sciences and Systems.

Dr. Zhang served as a panelist on a two day NSF research proposal panel review in Washington DC.

### **INFORMATION SYSTEMS AND TECHNOLOGY**

Dr. Mahbubur R Syed, Professor, edited the following book.

Mahbubur R Syed (Ed): *Strategic Applications of Distance Learning Technologies*, Information Science Reference (an Imprint of IGI Global), USA, ISBN 978-159904480-4, copyright 2009, 336 pages.

More details of this book can be found at <http://www.amazon.com/Strategic-Applications-Technologies-Education-Reference/dp/1599044803/> OR at <http://www.igi-global.com/reference/details.asp?id=7962>

Dr. Syed has been invited to serve on the technical program committee for Sarnoff 2009 (IEEE Sarnoff Symposium 2009, March 30-April 1, Princeton, NJ, USA) sponsored by IEEE and cosponsored by IEEE Communications Society, Princeton University and Electron Devices Society.

Dr. Syed has also been invited to be a member of the International Program Committee (IPC) for the IASTED International Conference on Wireless and Optical Communications (WOC 2009), which is to take place in Banff, Alberta, Canada from July 6–8, 2009.

### **MATHEMATICS AND STATISTICS**

**I.-J. Kim** and B.L. Shader, Smith Normal Form and acyclic matrices, *Journal of Algebraic Combinatorics* 29 (2009), 63-80.

**I.-J. Kim** (with three other researchers, Drs. De Alba, Hogben and Shader) organized a special session entitled "Spectra of Matrix Patterns and Applications to Dynamical Systems" at the 2009 American Mathematical Society Joint Meetings in Washington DC, January 5-8. I.-J. Kim also gave a talk on "Low Rank Perturbations and Inertias of Full Symmetric Sign Patterns" and two other

joint works were presented by coauthors at the meeting (see [http://www.ams.org/amsmtgs/2110\\_program\\_ss40.html#title](http://www.ams.org/amsmtgs/2110_program_ss40.html#title)).

Drs. Mezbahur Rahman and Larry M. Pearson. Estimation of the Multivariate Box-Cox Transformation Parameters, is accepted for publication in World Scientific Review Volume.

Dr. Gary Rockswold, Professor, has published the textbooks entitled *Precalculus with Modeling and Visualization, Fourth Edition*, and *Algebra and Trigonometry with Modeling and Visualization, Fourth Edition*. These textbooks are published by Addison-Wesley Publishing Company, Boston.

**Deepak Sanjel**, John Haddad and Serge B. Provost, “Test Statistics for Discriminating Between Autoregressive Models of Consecutive Orders” South African Statistical Journal- Theory and Methods, V. 42, (1) pp. 1-15.

**Tsao, Y.L.** & Pan, T.R. (2009). Study on the Computational Estimation Ability Performance and Computational Estimation Attitude of Elementary School Fifth Graders. In Proceedings of the 2009 Hawaii International Conference on Education. Honolulu, HA.

#### **COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY**

MN Renewable Energy Marketplace (MNREM) awarded \$169,065 to MSU to develop and provide educational opportunities for preparing technicians and engineers for design and implementation of energy-efficient mechanical systems (e.g., heating and air conditioning) for public and private buildings. This includes new buildings and retrofitting existing buildings. The target jobs include four phases: energy auditor, contractor (design and implementation), commissioning (testing installed systems) and operation (continual tuning and maintenance).

This grant will draw upon CSET expertise in at least the following departments: Construction Management, Electrical and Computer Engineering and Technology, Mechanical and Civil Engineering and Physics and Astronomy. It will be administered through the College of Extended Learning.