

COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY

October 2006

GOOD NEWS

AUTOMOTIVE AND MANUFACTURING ENGINEERING TECHNOLOGY

Prof. Gary Mead, Assistant Professor, and Dr. Bruce Jones, Professor, have received two grants for the E20 research. The first is a two-year 100K grant from the Minnesota Corn and Research Promotion Council and the second is a 50K grant from the Minnesota Department of Agriculture. The focus of the research is on the material compatibility issues associated with 20% blends of ethanol.

CHEMISTRY AND GEOLOGY

Dr. Brian Groh, Associate Professor, attended the 19th Bicentennial Conference on Chemical Education at Purdue University in Lafayette, IN last August, where he presented a paper entitled *New and Improved Green Experiments for the Organic Chemistry Lab*. This presentation described new green chemistry experiments developed by undergraduates Jason F. Pendleton, Duane M. Anderson, and Joel Heuton who were co-authors of this presentation.

Dr. Danae Quirk Dorr, Assistant Professor, presented "Novel exocyclic adducts of 1,2,3,4-diepoxybutane" *Poster Presentation*. (abstract #TOXI 57) at the American Chemical Society in San Francisco, CA in September 2006. Coauthors were: Sergey Antsyovich, Rebecca Guza, Crystal Pitts, Brock Matter and Natalia Tretyakova

Dr. John Thoenke, Associate Professor, and Dr. Marie Pomije, Associate Professor, attended the 232nd American Chemical Society National Meeting held in September in San Francisco, CA to present their invited submission entitled "*Making the connections: An integrated approach to physical and inorganic chemistry laboratory: Use of literature-based projects in advanced inorganic laboratory.*" The presentation was part of a symposium on National Science Foundation Catalyzed Innovations in the Undergraduate Chemistry Curriculum.

Dr. Brian Groh, Associate Professor, in collaboration with Dr. Robert Gregory (Department of Chemistry, Indiana University Purdue University Fort Wayne) presented a paper entitled, *Whoosh bottle safety, again: A new issue arise*, at the National Meetings of the American Chemical Society in San Francisco, CA in September. This work established that a considerable variety of compounds are produced at significant levels from the isopropanol in the energetic combustion of this experiment. More than half of them are considered carcinogenic or likely carcinogens. Implications for safety and performing this demonstration were addressed.

COMPUTER AND INFORMATION SCIENCE

Dr. Mike Wells, Associate Professor, had a paper, "Using Microsoft's Academic Alliance to Ease the Financial Burden on IS Educators and Students", accepted in the proceedings of the Information Systems Education Conference (ISECON).

Dr. Rebecca Bates, Assistant Professor, Dr. Marilyn Hart, Associate Professor, Dr. Deborah Nykanen, Assistant Professor, and Dr. Mezbah Rahman, Associate Professor, have been awarded \$500,000 from the National Science Foundation for “MAX Scholarships: Mentored Academic EXperience for Success in Biology, Computer Science, Engineering and Math.”

Dr. Rebecca Bates was selected to participate in the 2006-07 Institute for Scholarship in Engineering Education “Advancing Engineering Education Research to Meet the Needs of the 21st Century.” She received funding to attend a week-long workshop at Howard University in July 2006 and will be conducting research on learning styles.

Rebecca Bates, Mari Ostendorf, & Richard Wright, “Symbolic Phonetic Features for Pronunciation Modeling,” was accepted for presentation at the 152nd Meeting of the Acoustical Society of America, Honolulu, HI, November 28-December 2, 2006.

ELECTRICAL AND COMPUTER ENGINEERING AND TECHNOLOGY

Dr. Han-Way Huang, Professor, spent much of his summer preparing new book manuscripts. To gain further insights as to Microchip's product plans, Professor Huang attended a week long Master's Conference hosted by Microchip.

Dr. Mark Dvorak, Assistant Professor, spent the summer investigating the statistics of RF propagation and antenna diversity for NextNet. The research conducted last summer for NextNet on an electronically steerable antenna is now to be used to develop a product to support mobile high speed data.

Dr. Gale Allen, Associate Professor, attended several classes over the summer months including Project Lead the Way, Digital Engineering in Milwaukee for two weeks, and then attended courses provided by Rockwell Automation for another two and a half weeks. In addition to the classes, Professor Allen spent a great deal of the remaining summer building the new department automation laboratory made possible through Center of Excellence funding.

Dr. Tom Hendrickson, Professor, spent one month of the summer traveling with Bob Herickhoff, Rajiv Kapadia, and Hai-Sheng Wu in China, Mongolia, and Tibet visiting a number of universities, solar power sites, and hydro projects. Professor Hendrickson completed work on a \$250 million IP Medical lawsuit and issued a final expert opinion. Professor Hendrickson has started work on a new \$500 million IP lawsuit where he will provide expert witness support over at least the next few years.

Dr. Muhammad Khaliq, Professor attended training hosted by IEEE which provided insight as to successful high school recruiting strategies. Professor Khaliq also invested significant time and effort in the setup and integration of the new oscilloscopes in the department's electronics laboratory. The purchase of

these scopes was made possible through a grant Professor Khaliq prepared for the Center of Excellence.

Dr. Bill Hudson, Professor, completed and had published an article in the *The Scene, Journal of the Association for Crime Scene Reconstruction*, entitled - An Examination of Police Mental Chronometry with J. Bumgarner, W. Lewinski, and C. Stapp. Also during the summer, Professor Hudson continued work on the ongoing patent efforts for a trigger training system and method. Preliminary designs were completed during the summer for a system that can accurately determine trigger pull resistance at all points in a the trigger pull continuum..

Dr. Julio Mandojana, Professor, continued his efforts in support of the off campus course offerings at Goodrich. Additionally, Professor Mandojana has been involved in the relocation of the department networking lab, made necessary by the creation of the department automation lab.

INTERIOR DESIGN AND CONSTRUCTION MANAGEMENT

Professor Ryan Langemeier has recently received professional status as a registered architect in the state of Wisconsin.

MATHEMATICS AND STATISTICS

Dr. In-Jae Kim, Assistant Professor, was invited to a research workshop, sponsored by the American Institute of Mathematics (AIM) and the National Science Foundation (NSF), which will be held at the AIM Research Center, Palo Alto, CA from October 23 to October 27. He will have great opportunities to collaborate with well-known researchers from several countries to make progress towards conjectures on spectra of families of matrices described by graphs, digraphs and sign patterns.

Dr. In-Jae Kim is hosting a departmental visitor, Ms. Eunha Song, who is from South Korea, beginning September 25 for a period of four weeks. This research trip for Ms. Song, a graduate student at the Kyungpook National University in South Korea, is supported by a grant associated with the Korean government science project BK21. She will have opportunities to work with faculty members in the department of Mathematics and Statistics.

Publication: The paper "Inertially arbitrary sign patterns with no nilpotent realization" by In-Jae Kim and co-authors D.D. Olesky (Department of Computer Science, University of Victoria, BC, Canada), P. van den Driessche (Department of Mathematics and Statistics, University of Victoria) has been accepted to the journal *Linear Algebra and Its Applications*. The electronic version of the paper is now available on the website of the journal.

Dr. Namyong Lee, Associate Professor, had a poster presentation "Patterns of multiallelic polymorphism maintained by migration and selection" at the Midwest Quantitative Biology Conference in Michigan on September 29-October 1, 2006.

MECHANICAL AND CIVIL ENGINEERING

Dr. Jin Park, Assistant Professor, will make the following presentation on October 18, 2006: Park, J. Y., "Effect of Nanofillers and Void to the Shear Properties of Pultruded Composites," ACMA, Composites and Polycon 2006, St. Louis, MO.

Dr. Park also recently made two poster presentations in France: Park, J. Y., "Evaluation of properties of polymer nanocomposites under shear loading," 12th European Conference of Composites Materials (ECCM), Biarritz, France, 2006.

Park, J. Y., "Analytical Evaluation of the Properties of Polymer Clay Nanocomposites," ASME CANEUS 2006, Toulouse, France, 2006.

PHYSICS AND ASTRONOMY

Dr. Igor Kogoutiuk, Associate Professor, has received the CSET "Excellence in Advising and Student Leadership" award. Dr. Igor Kogoutiuk has recently published two papers in prestigious physics journals *Physica B*, and the *International Journal of Modern Physics*. The co-author of both articles is a former MSU-Mankato graduate student Hanna Terletska. A third paper of Dr. Kogoutiuk's was accepted for publication in the *Journal of Magnetism and Magnetic Matters*.

Dr. Hai-Sheng Wu, Professor, was an invited speaker for the session of Energy Technology and Sustainable Development on the subject of Photovoltaics at the *2006 Biennial ROC-USA Business Conference and the Modern Engineering & Technology Seminar 2006*, which was held on September 22-27, 2006 in Taipei, Taiwan. Dr. Wu's paper was accepted for publication. The title of the paper and the speech given at the conference was, "*Recent Development in Producing High-Efficiency Flexible Thin-Film Silicon-Based Solar Cells.*" Dr. Wu and his wife were also invited, along with several other invited conference speakers and their spouses, to have a conducted tour of the Presidential Palace on September 27. The group met with Taiwan President Chen Shui-Bian, and the visit concluded with the usual photo-op.

Dr. Hai-Sheng Wu was invited as a special guest to the *5th China Scientists Conference* which was held on September 28 - 30 at the People's Great Hall in Beijing, China

Dr. Hai-Sheng Wu is an invited speaker at the 2006 Annual Conference of Chinese American Academic & Professional Association in Minnesota (CAAPAM) which will be held on October 15, 2006 in St. Paul, Minnesota. Dr. Wu's speech title will be, "*Alternative Source of Energy: Recent Progress of Solar Photovoltaics in China.*"