

**COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY**  
**GOOD NEWS**  
**MAY 2003**

**AUTOMOTIVE & MANUFACTURING ENGINEERING TECHNOLOGY**

The Department of AMET has received a genset from Katolight for our Ediesel research. The value of the gift is \$6500.

Our CSET ExSEL Lectureship took place on Thursday, April 3. Mr. Robert Kochie, a graduate of the Automotive Engineering Technology program, was our guest speaker. There was an excellent turnout of students and faculty for this event.

**BIOLOGICAL SCIENCES**

*Dr. Keith Klein* presented a talk at North Dakota State University on April 22. The presentation was entitled: Sex and recombination in an imperfect world: evidence of both in *Fusarium oxysporum*.

Publication: Helsel, D., *J. Madsen* and B. James. 2003. Changes in sediment, water quality, and aquatic plants: Shifting Big Muskego Lake from a turbid to clear water state. *LakeLine* 23(1):29-32. Spring 2003.

Presentations: *Madsen, J.D.* A suggested protocol for standardized lakewide aquatic plant management plans for the State of Wisconsin. Wisconsin Lakes Convention, Green Bay, WI. 11 April 2003.

*Madsen, J.D.* Importance of Vegetation in Northern Lakes: Natives vs. Exotics. Michigan Lake and Stream Association, Shanty Creek, MI. 26 April 2003.

*Dr. Brock McMillan* and his graduate student received the following competitive equipment grant from Sandpiper Technologies, Inc. The value is approximately \$1,700. Gorman, T.A., and B.R. McMillan. Use of the Peeper™ Video System to Evaluate Female Behavior and Neonate Survival of River Otter in Southeastern Minnesota.

Response of terrestrial ecosystems along the Antarctic Peninsula to a changing climate. Thomas A. Day, *Christopher T. Ruhland* and Jeffery M. Klopatek. National Science Foundation Office of Polar Programs.

MSU hosted the Elementary Regional Science & Engineering Fair on Saturday, April 26. The activities were in the Taylor Center, Myers Field House and Trafton Science Center buildings here on campus. From southern and central Minnesota there were 1,548 students participating with their projects from 133 schools. We had 450 volunteer judges!

All students received the purple and gold Regional Science Fair Ribbon. Grand Awards, including a check and a medallion, were given to 420 students. An additional 420 students received Golden Guide Books as Special Book Awards. Eight local groups gave

special awards, including the Alfalfa Centauri Center for Experiential Learning, Astronomy Awards sponsored by James Ballard (Physics Department) and Dave Schultz; the Margaret A. Santo Memorial Botany Awards sponsored by Terry Salerno (Chemistry Department); and the MSU Department of Speech, Hearing and Rehabilitation Services. Since March, HickoryTech has contributed \$1,000 to the Regional Science Fair.

Benjamin Jilek, undergraduate research assistant in the laboratory of *Dr. Marilyn Hart*, was offered a position in the following summer undergraduate research programs: Mayo Clinic, the University of Chicago, the University of North Carolina-Chapel Hill, Emory University, and the University of Minnesota. In addition, he was offered a position in the Marine Biological Laboratory Summer Course (Woods Hole, Massachusetts): Advanced Cell Physiology. He accepted the later position.

Benjamin Jilek, Aja Bjerke, Ryan Peck, Justin Peltola, and Janice Haala, undergraduate research assistants in the laboratory of Dr. Marilyn Hart, presented their research at the Minnesota State University Undergraduate Research Conference and at the Minnesota Academy of Science Undergraduate Research Conference, St. Paul, MN. Benjamin Jilek was awarded best oral presentation in the Biological Science category at the Minnesota State University Undergraduate Research Conference.

### **COMPUTER AND INFORMATION SCIENCES**

Dr. Ann Quade, Professor, has been selected to participate in the NSF sponsored 'Scaffolding Research in Computer Science Education Project' during 2003-2005 at the University of Washington. Additionally, she also received funding from NSF to support the cost associated with her participation. As part of this project, she will be engaged in summer institutes as well as collaborative research during the academic years. Professor Quade is one of twenty computer science educators nation-wide chosen to participate in this endeavor.

Professor Steve Case's paper titled 'An Indoor Positioning System Using Bluetooth Ad Hoc Networks' has been accepted for presentation and publication at the Emerging Technologies Conference at ISA EXPO 2003, 21-23 October 2003 in Houston, TX.

The Center for Pervasive Computing and Communication held its first annual symposium highlighting the successful research activities of the undergraduate and graduate students associated with the Center. A total of 12 papers or projects in four separate tracks were presented and an informal gathering was held afterwards, which included additional project demonstrations and a poster session. The Center for Pervasive Computing and Communication is co-directed by Bill Hudson (ECET) and Steve Case (COMS).

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

On April 25, *Dr. Paul Lindfors* made an invited presentation to 100+ students at the new engineering center at Itasca Community College in Grand Rapids, MN. The new engineering center represents a very large source of future upper division engineering students and promises to be an exciting source of improved teaching of pre-engineering curricula. They are integrating lectures, labs and living and learning as never before,

while pioneering block module teaching of calculus, physics, chemistry, circuits, statics, dynamics, computer science and mechanics of materials.

### **MATHEMATICS AND STATISTICS**

*Prof. Sam Peterson* has co-authored a paper which has been accepted for publication in the *SIAM Journal of Applied Mathematics*. The paper was co-authored along with Victor Reiner (Prof. of Math at U of M, Twin Cities), James Stout (Prof. of Geology at U of M, Twin Cities), and Paul Edelman (Prof. of Math at Vanderbilt University). The title is "Geochemical phase diagrams and Gale diagrams." Date of publication as yet undetermined.

*Dr. Namyong Lee*, Assistant Professor, was accepted in a summer visiting program at MBI (Mathematical Bioscience Institute), which is based at Ohio State University. Dr. Lee will be at the Institute for one month this summer for the purpose of both research and curriculum development. The visiting program will be supported by both NSF and MBI.

*Rahman, Mezbahur* (2003). "Testimation of a Probability Density: The Exponential Case", has been accepted for publication in the special volume of the *Journal of Statistical Research* to mark the 70th Birthday of Professor A K Md E Saleh.

*Dr. Gary Rockswold*, Professor, coauthored four textbooks this past year:

*A Graphical Approach to College Algebra*

*A Graphical Approach to College Algebra and Trigonometry*

*A Graphical Approach to Precalculus*

*A Graphical Approach to Precalculus with Limits*

This series of textbooks is in its third edition and was published by Addison Wesley, located in Boston. Addison Wesley is the largest publisher of collegiate mathematics textbooks.

Dr. Gary Rockswold has given several workshops and sessions at the local, regional, national, and international levels. These presentations discussed NCTM and AMATYC national standards and their implications for teaching mathematics courses below the level of calculus. Some locations where these presentations have been given are Spokane, Denver, Austin (TX), Orlando, Charlotte (NC), Salt Lake City, Tucson, Baltimore, Washington D.C., Phoenix, Duluth, and Mankato.

### **PHYSICS AND ASTRONOMY**

Publication: *Eskridge, P.B.*, Frogel, J.A., Taylor, V.A., Windhorst, R.A., Odewahn, S.C., Chiarenza, C.A.T.C., Conselice, C.J., de Grijs, R., Matthews, L.D., O'Connell, R.W., & Gallagher, J.S., III, (2003) "UV-Optical Pixel Maps of Face-On Spiral Galaxies - Clues for Dynamics and Star Formation Histories," *The Astrophysical Journal*. 586, 923. (April 1, 2003 pub date)

*P. Eskridge* and *I. Radtke* (astronomy/computer science undergraduate) will attend the Spring 2003 meeting of the American Astronomical Society May 25-29, and will present the following paper: *Radtke, I.R., Eskridge, P.B., & Pogge, R.W., (2003) "Oxygen*

Abundances in the Rings of Polar Ring Galaxies.” This paper is based in part on work done by Ian Radtke and Dr. Eskridge as part of Dr. Eskridge’s Faculty Research Grant. Ian Radtke’s travel costs are kindly being covered by support from the College of Science, Engineering and Technology.

The 4th Annual Physics Show was held on Tuesday, April 29, in Trafton C-121 to an overflow crowd of approximately 400, mostly elementary school children and their parents. The show, sponsored by the Department of Physics and Astronomy and the College of Science, Engineering & Technology, featured a number of popular physics demonstrations which were performed by Profs. James Ballard, Igor Kogoutiuk, Louis Schwartzkopf, Hai-Sheng Wu, and Mr. Michael Peters of the Physics Department, and Mr. Eric Koser, a physics teacher at Mankato West High School.

*Dr. Mark Pickar*, Professor, is a lead investigator in a nuclear physics experiment recently completed at the Indiana University Cyclotron Facility which was featured in the science weekly *Science News*. The experiment is significant because it sheds new light on the regularities, or symmetries, which govern the behavior of matter at the subatomic, nuclear level.

*Dr. James Pierce*, Professor, was awarded the prestigious MSU Outstanding Teacher of the Year award at the inauguration ceremony for the newly elected members of the student government on April 24. The faculty member honored is selected from nominations from students.

*Dr. Igor Kogoutiuk*, Associate Professor, is a co-author of an article, “The Energy of an Exciton in the Composite Flat Semiconductor Heterosystem in the Presence of Transition Layers with a Coordinate Dependable Dielectric Permittivity.” The article was published in the journal *Collected Physics Papers*, v.5, 2002, p. 128-140, Kiev, Ukraine.

*Dr. Robert Herickhoff*, Professor, has been awarded a Faculty Improvement Grant to attend a National Science Foundation Chautauqua Short Course, “Archaeoastronomy in the Maya Ruins of Copan San Pedro Sula/Copan.”

### **CSET**

On Thursday, May 1, the College of Science, Engineering and Technology hosted a Scholarship Reception for our award recipients, some of our donors, and the CSET faculty and staff. Over 80 of our students received scholarships, which ranged from \$50 to \$2,500 for a single award. During this event we also honored the recipients of our CSET Excellence Awards. These recipients are: *Outstanding Support Staff* – Ms. Dianne Robbins, secretary in the Department of Chemistry and Geology; *Excellence in Faculty Research* - Dr. Marilyn Hart, Assistant Professor in the Department of Biological Sciences; *Excellence in Teaching* – Professor Scott Fee, Assistant Professor in the Department of Interior Design and Construction Management; *Excellence in Student Advising and Leadership* – Dr. Theresa Salerno, Associate Professor in the Department of Chemistry and Geology.