COLLEGE OF SCIENCE, ENGINEERING AND TECHNOLOGY
~GOOD NEWS ITEMS~
I October 2000

AUTOMOTIVE AND MANUFACTURING ENGINEERING TECHNOLOGY

Ms. Ann Goebel, Assistant Professor in the Department of Automotive and Manufacturing Engineering Technology, was recently awarded a $370,665 grant by the Minnesota Job Skills Partnership for a training partnership with Mico, Inc. of North Mankato.

Dr. Bruce Jones, Professor of Automotive and Manufacturing Engineering Technology will spend his sabbatical year at OTC in Owatonna, Minnesota gaining industrial experience in automotive diagnostics.

BIOLOGY

Dr. John Krenz, Assistant Professor in the Department of Biological Sciences shares news of a recent oral presentation given at the annual meeting of the American Society of Ichthyologists and Herpetologists in June of 2000 at La Paz, Mexico. Krenz, John D., H.C. Gerhardt, and R.D. Semlitsch. Female mate-choice does not affect fecundity in the gray tree frog.

A new faculty member in the Department of Biological Sciences, Dr. John D. Madsen Shares news of recent publications. Peer-reviewed Journals: Madsen, J. D., P. A. Chambers, W. F. James, E. W. Koch, and D. F. Westlake. 2000. The interaction between water movement, sediment dynamics and submersed macrophytes. Hydrobiologia, special issue, in press. Government Reports: Madsen, J. D. 2000. Advantages and Disadvantages of Aquatic Plant Management Techniques. US Army Engineer Research and Development Center Miscellaneous Report ERDC-EL MP-00-X, Vicksbury, MS. 34 pp., In press. Madsen, J. D. and C. S. Owens. 2000. Factors Contributing to the Spread of Hydrilla in Lakes and Reservoirs. US Army Engineer Research and Development Center Technical Note ERCD TN-APCRP-EA-01, Vicksburg, MS 14 pp. Information to the General Public: Madsen, J. D. 2000. Advantages and Disadvantages of Aquatic Plant Management Techniques, Part II. Mechanical and Physical Management Techniques. Land and Water, September/October 2000. In press. Media Coverage: Interviewed by Carla Halt of KEYC-TV on story concerning toxic blue-green algal blooms that appeared on KEYC on the 6:00 pm news program on September 12, 2000.

CHEMISTRY/GEOLOGY

Dr. Shannon Long, Assistant Professor of Chemistry attended the 32nd Great Lakes Regional American Chemical Society meeting June 4-6 in Fargo, ND, and made a presentation of her entitled, "A kinetic investigation of heavy metal tolerance and hyperaccumulation in Indian Mustard."

Dr. Greg Long, Assistant Professor of Chemistry presented his research regarding the chemistry of electrodeposition of gold thin films at Great Lakes Regional Meeting of the American Chemical Society June 4-6 in Fargo, ND. Dr. Long also reports his paper entitled, "Microstructural and Mechanical Characterization of Electrodeposited Gold Thin-Films" was accepted for publication in the Proceedings of the American Society of Testing and Measurement (ASTM). This paper will be presented at the ASTM national meeting in December 00. Another paper entitled "Electrochemical Synthesis, Characterization and Magnetic Properties of Novel Nickel/TCNQ Thin-Films" accepted for publication in the Journal of Materials Chemistry.

COMPUTER AND INFORMATION SCIENCES

Dr. David J. Haglin, Associate Professor of Computer and Information Sciences, gave a talk on: "Message Minimizing Work Redistribution Problems," on September 13. Dr. Haglin recently spent six months conducting research with a high performance computing research group at the University of Manchester. Dr. Haglin has a diverse background including publications and presentations in theoretical research in Parallel Algorithms, Applied Data Mining research, industrial experience as a software engineer working on data communication software, and eight years of teaching experience at MSU.

Dr. Haglin has been awarded two NSF grants, one to purchase a massively parallel computer, and the other to equip a combined data communication, client/server, and distributed database laboratory for instructional and research purposes. He is also a Co-PI on a NASA grant to investigate and produce a Data Mining tool with particular emphasis on mining in Gamma-Ray Burst data.

Dr. Julio Sanchez and Ms. Maria Canton-Sanchez, of the Computer and Information Sciences Department, announce that their publication, "Direct X Bible" has been printed in several Chinese dialects and will be distributed throughout China.

Drs. Richard Roiger and David Haglin, of the Computer and Information Sciences, in conjunction with Astronomy's Dr. Jon Hakkila have published a substantial paper with regards to their NASA grant for Data Mining on the Gamma Ray Burst project.

Dr. Michael Wells, Assistant Professor of Computer and Information Sciences announced that his paper was published in the 2000 Decision Science Institute Proceedings: "Software Development Cost Estimation Software: A Practical Combination of the Function-based and Learning-based Models."

Dr. Ann Quade, Associate Professor in the Department of Computer and Information Sciences, chaired the panel, Factors that Encourage Women to Pursue Careers in Computer Science and presented her research findings on the same subject at the Grace Hopper Celebration of Women in Computing Conference at Cape Cod, Massachusetts September 14-16, 2000. Sponsors of the conference included Computing Research Association and the Institute of Women and Technology. Dr. Quade's research related to factors that encourage women to pursue degrees in computer and information science is a continuation of her earlier work presented as both oral and written testimony before the U.S. House of Representatives, Committee on Science, Subcommittee on Technology and Subcommittee on Basic Research in Washington, D.C. March, 1998. Her testimony was offered in support of the H.R. 30007, The Advancement of Women in Science, Engineering, and Technology Development Act sponsored by Representative Constance Morella of Maryland. This law established a commission to examine more closely all aspects associated with the under representation of women in the aforementioned areas.

ELECTRICAL AND COMPUTER ENGINEERING AND TECHNOLOGY

The Electrical Engineering Program received full accreditation by the Accreditation Board for Engineering and Technology in August 2000.

Dr. George O'Clock, Professor ECET and Dr. John Jarding, Southern Hills Vision Clinic, Hot Springs, SD have recently patented an electrotherapeutic device and protocol to treat patients who have wet and dry macular degeneration (U.S. Patent Office #6,035,236, Methods and Apparatus for Electrical Microcurrent Stimulation Therapy.) Several Internal Review Board (IRB) studies have been completed and FDA supervised double blind clinical trails are currently underway for this technique. Over a period of one year, approximately 78% of the macular degeneration patients treated with electrotherapy show one to nine line of visual acuity improvement on the Snellen chart. Some of the patients report significant improvements in their color vision. Approximately 75% of the macular degeneration patients not treated suffered a reduction in visual acuity of one to ten lines on the Snellen chart over the same one-year period of time.

INTERIOR DESIGN AND CONSTRUCTION MANAGEMENT

The fall resource trip planned for the students of the Interior Design program will take them to the International Market Square in Indianapolis, Indiana. The spring trip will be in Chicago, Illinois. The senior students will be holding a design show on campus in May of 2001. Additionally, Michael Lindstrom, Associate Professor of Interior Design is planning to take his historic restoration majors to Galena, Illinois and Mineral Point, Wisconsin during the fall semester and to High Point, North Carolina with a Winston-Salem side trip during spring semester.

The Department of Interior Design and Construction Management and, specifically, the Construction Management Program, has received some very generous gifts in recent months: 1) a job site trailer donated by Ryan Companies US and Stellar Concrete and Masonry, valued in excess of $10,000 when including high tech equipment housed within the trailer, 2) over $50,000 donated by Lungren Bros. Construction and participating companies involved in a new Wayzata, Minnesota home entered into the Parade of Homes 2000.

In addition to the gifts, Construction Management student Damon Miller, was one of only 15 students nationally to received the new Centex Homes "Build Your Future" scholarship award in the amount of $2,500. Also, the newly established Minnesota River Builders/National Association of Home Builders Scholarship will be awarded to 6 Construction Management students this fall. Each recipient will receive $500.

Board members Phil Bruner and Deb Mackay of Faegre & Benson LLP are already planning the Spring 2001 Construction Industry seminar. The April 7, 2000 seminar, "Technology in the Construction Industry," netted $1,116.38 for the Construction Management program. Mr. Todd A. Schilling of Knutson Construction Services was introduced as a new Board member. The 2001-01 issue of VANGUARD is going to the printer soon and should be mailed by December 1. For current developments in the Department visit our new website at http://www/mnsu/edu/construction.

MATHEMATICS AND STATISTICS

Mary Ann Lee, Professor of Mathematics and Statistics, with co-author Shelley Messner, had "Analysis of Concatenations and Order of Operations in Written Mathematics" published in the April 2000 issue of School Science and Mathematics. A Faculty Research Grant received by Dr. M. Lee supported Shelley Messner's initial work with the research as an undergraduate at MSU, M.

Dr. Mezba Rahman. Assistant Professor in the Department of Mathematics and Statistics and Dr. Larry M. Pearson, chair of the department, co-authored a publication as follows: Rahman, Mezbahur and Larry M. Pearson (2000). "Shapiro-Francia W' Statistic Using Exclusive Monte Carlo Simulation", Journal of the Korean Data & Information Science Society, Volume 11, Number 2.

A paper entitled " When a Component of a Vector Gaussian Markov Process is a Markov Process Itself" and written by Dr. Pavel Kitsul, Assistant Professor in the Department of Mathematics and Statistics, in co-authorship with Russian and Israeli mathematicians, was presented in a lecture format at the Annual Meeting of the Society for Industrial and Applied Mathematics (Section: Probability, Statistics, and Applications), Rio Grande, Puerto Rico, USA (July 10-14, 2000). His participation in the SIAM Annual Meeting provided also an opportunity to inform the US and international research communities about the recent achievements of the MSU Mathematics Genealogy Project. Dr. Kitsul also participated in a research project on statistics of random processes, Russian Academy of Sciences, Moscow, Russia (July-August, 2000).

MECHANICAL ENGINEERING

The Mechanical Engineering Department received full accreditation again by the Accreditation Board for Engineering and Technology in August 2000.

Dr. Saeed Moaveni, Chair of the Department of Mechanical Engineering gave the following presentation at the recent ASME 2000 Design Engineering Technical Conferences and Computers and Information in Engineering Conference in Baltimore, Md. Sept 10-13. His paper was titled: Metal Belt CVT's - Performance Parameters.
Paper No: DETC2000/PTG-14404

The Mechanical Engineering Department is pleased to introduce Associate Professor, Dr.Vojin Nikolic. Dr. Vojin Nikolic was born in Yugoslavia. He received a Dipl. Ing. degree (equivalent to MS degree in the U.S.) from the University of Belgrade and graduated from Yugoslav Air Force Academy in Sarajevo and Superior Air Force Academy in Belgrade. He was involved in the design and development of several military aircraft both in Yugoslavia and United States. He earned a Master of Science degree from the United States Air Force Institute of Technology and a Ph.D. from the University of Notre Dame. His areas of specialty include aerodynamics, computer aided design, and jet propulsion. He has

accumulated sixteen years of industrial experience in design mostly Aero Space applications. He has taught a wide variety of mechanical engineering courses, both undergraduate and graduate level.

PHYSICS/ASTRONOMY

This summer a proposal for a major new experiment, in which Dr. Mark Pickar, Associate Professor in the Department of Physics and Astronomy, is a key collaborator, was submitted to the Indiana University Cyclotron Facility, in Bloomington, Indiana, and was subsequently approved with an "A" rating. This major new project will search for a unique nuclear reaction (d + d ---> 4He + pi0) that is strictly forbidden by the principle of charge symmetry. Observation of this reaction will permit a quantitative determination of the role of the quark model in certain aspects of the strong force, the force dominating interactions within a nucleus. Mark Pickar spent the previous year and summer helping develop this new proposal, and this summer made major contributions to the final design of the experiment. He will continue as a key collaborator in the project, which will cost close to $4M to complete.

Louis Schwartzkopf, Chair of the Department of Physics and Astronomy, worked as a consultant at the Applied Superconductivity Center at the University of Wisconsin - Madison last July, where he continued his work on high-temperature superconducting wires that he began on sabbatical there during the 1998-99 academic year.