Department News

With 2009 almost half over and the school year already at an end, are you focused on the future? What are you looking forward to? Warm weather, summer school, a vacation, or perhaps a new job?

During the school year, it was hard not to focus on the future. So many exciting things were happening that students and faculty always had something to look forward to.

Our students looked forward to travel, presenting their research projects, hosting and participating in contests, winning awards, being involved in student clubs and organizations, and, for some, graduation!

Faculty and staff looked forward to new classes, new faces, attending conferences, having research published, traveling with students, and, for some, retirement! (see pg. 2)

Dr. Jailan Zalmai, who is stepping down after seven years as department head is now looking forward to having more time to devote to his research.

And, of course, faculty and students alike are looking forward to the new actuarial science major that we are hoping to offer next winter. (see story below)

Has 2009 already met your expectations or are you still looking forward to that special event to happen? What are you waiting for - make it happen! (continued on pg. 5)

“You don’t just stumble into the future. You create your own future.”

- Roger Smith

The Mathematics and Computer Science Department is in the process of developing a proposal for an undergraduate program in actuarial science. This will be accomplished in collaboration with the Walker L. Cisler College of Business.

According to our tentative plans, we will begin offering courses for a major in actuarial science in winter semester 2010. The primary objective of this major will be to prepare students for a successful actuarial career, and provide them with a strong background to pass the examinations administered by the Society of Actuaries and the Casualty Actuarial Society.

Due to its truly interdisciplinary nature, an actuarial science program will necessarily require courses from a variety of areas, including mathematics, especially probability and statistics, computer science, operations research, finance, accounting, management, and economics, as well as courses in the social sciences and humanities. Indeed, it is a meeting ground for a multiplicity of important disciplines.

Actuaries work in diverse professional arenas involving a wide range of responsibilities. They work for insurance companies, consulting firms, government insurance departments, colleges and universities, banks, investment firms, large corporations, and accounting firms, among others.

According to the Society of Actuaries Web site, the job “actuary” has been consistently rated one of the top four best jobs in the United States by the Jobs Rated Almanac for each of its six editions. In addition, Money Magazine recently ranked “actuary” as the second highest paying job that is currently in demand and will remain in demand for the next ten years.

For a wealth of information concerning various aspects of the actuarial profession, see www.BeAnActuary.org
**New Faculty**

**Michael R. Kowalczyk** joined the Mathematics and Computer Science Department in fall 2008. He received a master's degree in computer science in 2005 and a master’s degree in mathematics in 2008, both from the University of Wisconsin at Madison, where his dedication to teaching earned him the Outstanding Graduate Student Instructor award. Mike’s return to Northern Michigan University marks the seventh year since he graduated from our own department with highest honors as the Outstanding Graduating Senior. His research interests include computational complexity theory and algorithms. Mike is actively working on his doctorate; his dissertation is on holographic algorithms.

**Bao Truong** also joined the Mathematics and Computer Science Department faculty in fall 2008. He received his doctorate in applied mathematics from Wayne State University in 2008 and his bachelor’s degree in applied mathematics from the University of Sciences, Ho Chi Minh City, Vietnam. Bao worked as a lecturer for three years in the Department of Mathematics and Informatics at the University of Sciences in Vietnam before studying at Wayne State with a graduate teaching assistant scholarship. His areas of research interest include variational analysis, nonsmooth analysis, generalized differentiation, multiobjective optimization, and welfare economics.

**Faculty Retiring**

**David Powers** will retire from the Mathematics and Computer Science Department in August after teaching mathematics and computer science classes for nearly 25 years. He received his master of science degree from the University of Michigan and began his career at NMU in 1984. Dave served as the department’s internship coordinator, placing students in credit-earning internship positions; he was instrumental in creating and maintaining the “catCluster,” a parallel processing computer lab; and he created and taught the Web-based versions of two math courses.

Dave's plans for retirement will undoubtedly include lots of fishing!

**Larry Ellerbruch** retired in May after having taught mathematics and computer science at Northern for more than 26 years. He completed his student teaching in 1961 and has been involved in education ever since; teaching mathematics at the elementary, secondary and university levels. He has been involved in mathematics education since the 1960s and in computer science and computer education since 1971. After being in education for 48 years, it's about time he retired!

Larry plans on spending time fishing, boating, working with the Coast Guard Auxiliary, gardening, remodeling, landscaping, working in his shop, possibly hunting, and catching up on chores which have been postponed for years. Hobbies such as photography, cooking, brewing (wine, beer and mead), reading and sleeping will be indulged in regularly. He and his wife, Marion, also plan on traveling, going on cruises, riding trains, visiting family spread over the continent, spoiling grandchildren and basically enjoying life. Larry would like to thank the students, colleagues, support staff and especially the secretaries who have made this voyage something other than a job.
Jason D. Gregersen
Outstanding
Graduating Senior
2009

Jason Gregersen’s dedication to academics is evident not only in his high grade point average, but also in his extracurricular activities. He has presented twice at the Minnesota Council of Teachers of Mathematics annual teachers conference and also several times at NMU regarding the use of technology in the classroom. In 2008, Jason was the recipient of Northern Michigan’s TLC Award and the Michigan Council of Teachers of Mathematics’ Miriam Schaefer Award for excellence in education. He has also demonstrated his dedication to the student community through his volunteer tutoring in the Math Lab and by tutoring individuals privately.

Jason graduated in May, Summa Cum Laude, with a bachelor of science degree in secondary education mathematics. He will continue studying mathematics in graduate school and will pursue a doctorate in either pure or applied mathematics.

Angel R. Inglese
Outstanding
Graduate Student
2009

Angel Inglese is a mathematics teacher and the technology coordinator at North Dickinson High School in Felch, Mich. In 2008 she received recognition as an “Educator of Distinction” from the National Society of High School Scholars, and she was nominated for the 2008 Michigan Teacher of the Year award. She is a member of the National Council of Teachers of Mathematics and a teacher-leader in the Dickinson-Iron Intermediate School district where she conducts in-service training on technology uses for classroom teachers, most recently on the use of “clickers” in the classroom, which was also the subject of her master’s project. After graduating from Kingsford High School, Angel came to Northern Michigan University where she earned a bachelor of science degree in 1998 and a master of science degree in mathematics education in December 2008. She is married and the mother of three young children.

Graduate Program News

Three of our graduate students received their master of science degrees in mathematics education in 2008-09.

Terri L. Balzarini, Mathematics teacher at Marquette Senior High School.
Master’s project - “Implementing Relevance Curriculum into an Exponential Function Unit.” Peggy House, Adviser

Angel R. Inglese, Mathematics teacher at North Dickinson High School.
Master’s project - “A Study of the Use of Classroom Performance Systems and Their Impact on Attitude, Achievement and Participation in the Algebra I Classroom.” Peggy House, Adviser

Charlene L. Bendick, Mathematics teacher in international high schools (on leave this academic year).
Master’s project - “An Informative Project Describing the International Baccalaureate and the Advanced Placement Calculus Programs, and the Need for a Student Parent Web Page Explaining Higher Mathematical Choices for Mathematics Students.” Steve Smith, Adviser

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Mathematics education graduate student Cynthia Brooks was the recipient of an Excellence in Education award for summer 2009. The Excellence in Education program is a $1500 award established to support graduate student research in the summer. The awards are intended to assist graduate students in the conduct of scholarly research and creative works that will enhance their academic experience and professional growth.

In addition to our bachelor of science degree in secondary mathematics education, we offer a master of science degree in mathematics education.
The National Council of Teachers of Mathematics (NCTM) released the final books in its 35-volume “Navigations” series at the NCTM Annual Meeting in Washington DC in April. This largest single publication project in NCTM history was accomplished under the leadership of NMU mathematics professor Peggy House who chaired the Navigations steering committee and served as general editor for all 35 books and their accompanying CD-ROMs.

NCTM has led the education community’s efforts to develop standards for school curricula and instruction since its pioneering 1989 document *Curriculum and Evaluation Standards for School Mathematics*, followed in 1991 by *Professional Standards for Teaching Mathematics* and in 1995 by *Assessment Standards for School Mathematics*. Recognizing the need to continually evaluate and update these documents, NCTM published *Principles and Standards for School Mathematics* (PSSM) in 2000, and PSSM has charted the course of NCTM’s mathematics education efforts for the past decade.

As PSSM was being prepared for release, the NCTM president asked Dr. House to chair a committee of leading mathematics educators charged with developing a series of companion publications that would guide teachers in translating the principles and standards outlined in PSSM into classroom practice. Working with embargoed copies of the still-unreleased PSSM, the committee met for the first time in 1999 and the Navigations project was launched. During this 10-year undertaking, House’s responsibilities have been to chair the steering committee that developed the series objectives and content overview; work with individual issue editors to identify teams of contributors for each volume; review and approve content proposals for individual books; write the introductory chapters for 22 of the books giving the PK-12 overview of each of the content standards; review, edit, and accept or reject manuscripts for all books and adjudicate any disagreements with contributors; and review, edit, and approve all page proofs before printing.

To date, the *Navigations* books have sold more than half a million copies, and efforts are under way to translate them into other languages. So far, some of the *Navigations* books were featured as the focal point of professional-development conferences in Germany, and several titles are already in print in Korean with more in translation.

*Congratulations to Dr. House on a job well done!*
Our students look forward to traveling with faculty each year, and this year was no exception as a number of opportunities were available.

- **Mike Kowalczyk** and **Andy Poe** accompanied 17 students to the Argonne Symposium for Undergraduates where eight students presented their research.
- **Jeff Horn** accompanied 12 students to Michigan Technological University in Houghton, Mich., where they competed for the first time in the BonzAI brawl (an artificial intelligence programming contest).

Faculty also looked forward to travel opportunities.

- **Jeff Horn**, **Carol Bell**, **Bao Truong**, **Randy Appleton**, **Don Faust** and **Mike Kowalczyk** presented their research at 15 different conferences. Venues varied from as far away as Bali, Indonesia, to as close to home as our own NMU campus.

During the school year, students and faculty alike received various awards and can now look forward to our congratulations and the personal satisfaction that goes along with each award.

- **Carol Bell** was awarded two $3000 grants for curriculum development, while **Dave Buhl** was awarded a $1,945 grant for instructional improvement. All grants are for the 2008–2009 school year.
- **Emeritus faculty John Kiltinen** received the Student Organization Adviser of the Year award for his work with the Finn Club.
- Secondary education mathematics student **Jason Gregersen** was the recipient of the Miriam Schaefer Scholarship in the amount of $1500 awarded by the Michigan Council of Teachers of Mathematics.
- Graduate student **Cynthia Brooks** was the recipient of an Excellence in Education award in the amount of $1500 for summer 2009.
- **Jason Gregersen** and **Angel Inglese** received this year’s Outstanding Graduating Senior and Outstanding Graduate Student awards, respectively. (see pg. 3)
- Computer science students **Matthew Knox**, **Nathan Wiering** and **Andrew Hawker** were awarded Intel internships for summer 2009 at Intel headquarters in Hillsboro, Ore. They were chosen from a field of nine NMU students who had applied. (see pg. 6)
- Twenty-six students of this department were awarded bachelor degrees and three students were awarded master of science degrees during the 2008-2009 school year.

As always, faculty and students looked forward to hosting various activities during the school year.

- The student chapter of the Association for Computing Machinery (ACM) hosted the 10th Annual Programming Contest. Sixty-three students on 24 teams from five universities and colleges competed. NMU was the second place school, Michigan Tech took first and third places, while newcomer, St. Scholastica, took second.
- **Jeff Horn** was the department’s host for Wildcat Weekend in March 2009. Prospective students and their families visited the NMU campus at the invitation of the Admissions Office. Dr. Horn presented a slide show about the department and our majors, demonstrated our student projects in robotics, and displayed student research posters.
- The department also hosted 43 prospective students and their families who visited the NMU campus through the campus visit program. Students who are interested in mathematics, mathematics education and/or computer science were treated to a tour of our facilities and labs, a brief description of our majors, and a one-on-one question and answer period with a professor from the requested discipline.
- During the 2008-2009 school year the Colloquium Committee hosted its weekly Colloquium and Seminar Series. Eight guest speakers, seven mathematics and computer science faculty, and 11 NMU students participated.

Finally, with the school year over we can all relax and look forward to catching up on our reading.

- **Qinghong Zhang**, **Jailan Zalmai**, **Bao Truong** and **John Kiltinen** authored a total of nine research papers which were accepted for publication in various journals and publications. Bao Truong also co-authored two manuscripts.

Congratulations to everyone on a very productive year. You can now look forward to summer and all the activities that go along with summer in the U.P. I’ll look forward to seeing you all next semester!

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As always, we thank everyone who made a donation to this department through the NMU Development Fund. If you would like to see travel opportunities, programs, and organizations continue for our students, please mark your donations specifically for “Mathematics and Computer Science.”
This is the second year in which Intel Corporation has sought to hire NMU computer science majors for a special, year-long, dual-campus internship program. The year-long experience focuses on Intel's cutting edge technology for high-speed and wide-area wireless networking, and utilizes NMU's unique strengths in large-scale, campus-area deployment of mobile wireless users (i.e., 10,000 laptop computers). Students in the program spend a summer at Intel headquarters in Hillsboro, Ore., learning essential wireless network testing and deployment skills, and then work the following two semesters on the NMU campus under the supervision of NMU's own technical staff.

In the 2008-2009 academic year, Intel hired computer science majors Cory Perry and Joe Manier. This year, 2009-2010, Intel and NMU again conducted an extensive interview process with nine applicants among our computer science and network computing juniors and seniors. Of those nine, three have been offered the internship opportunity: Matt Knox, Nathan Wiering and Andrew Hawker. The Intel-NMU internship program experienced a fifty percent increase in size over last year despite budget cutbacks at Intel that initially put their internship programs on hold.

Congratulations to those students chosen for the internships and a big thank you to all who applied.