Collaborating with Dr. Jinfa Cai from the National Science Foundation, Dr. Moyer is conducting research through his LieCal project at Marquette. This project is funded with $4 million for five years. It is focused on understanding collaborative study and its impact on mathematics education. LieCal project is led by Dr. Moyer, who has dedicated many hours to this project, including afternoons and during the lunch hour. During the fall, Dr. Moyer was able to continue working in his MU office while overseeing the education of math teachers.

Dr. Moyer is also on sabbatical during 2010-2011, spending the school year working on his latest research, which focuses on the development of algebraic thinking and the effectiveness of different types of mathematics curricula. An avid handball player who competed in local and national tournaments for many years, Dr. Moyer has turned to golf in his later years. When interviewed for this article, he said, "I am thoroughly enjoying the opportunity to work full time on my research during my sabbatical. I work in my home office in the morning [see photo], go to the RecPlex during the lunch hour, and continue working in my MU office during the afternoons. Also, during the fall I was able to replace my usual weekend paper grading with afternoons. Also, during the fall I was able to replace my usual weekend paper grading with afternoons. Also, during the fall I was able to replace my usual weekend paper grading with afternoons."

Dr. Moyer’s current research project, LieCal, which focuses on the development of algebraic thinking and the effectiveness of different types of mathematics curricula, has been described as focusing more on real-world problem-solving and concept-building. Dr. Moyer is on sabbatical during 2010-2011, spending the school year working on his latest research, which focuses on the development of algebraic thinking and the effectiveness of different types of mathematics curricula. An avid handball player who competed in local and national tournaments for many years, Dr. Moyer has turned to golf in his later years. When interviewed for this article he said, "I am thoroughly enjoying the opportunity to work full time on my research during my sabbatical. I work in my home office in the morning [see photo], go to the RecPlex during the lunch hour, and continue working in my MU office during the afternoons. Also, during the fall I was able to replace my usual weekend paper grading with afternoons."

As a consequence of this study, for essentially the first time, there will be evidence-based insights into whether a standards-based, problem-solving middle school curriculum makes a difference in student achievement. In the Focus on Faculty newsletter section, you’ll meet the newest member of the MSCS faculty, Dr. Thomas Kaczmarek. Tom brings a remarkable background and a tremendous amount of energy to his position as Director of the Masters in Computing program. In addition to the exciting connection he has forged with GE Healthcare and the new online courses he has developed, Tom organized a well-received pre-game reception for the Computing program before the Marquette vs. South Dakota men’s basketball game. The reception provided a wonderful networking opportunity for current students, faculty and alumni. Didn’t hear about the Computing program pre-game reception? Please drop Tom an email at thomas.kaczmarek@marquette.edu to make sure you are notified of upcoming Computing program networking events. Tom would also like to hear from you if you would like to help promote the Computing program in your area or if you are interested in discussing possible internship opportunities for current Computing program students.

I take great pride in the accomplishments of the department’s faculty and students. There is so much activity in the department, I cannot do it justice in this column. I invite you to read about our summer undergraduate research experience, Forward Looking Thinking Poster Session winners, examine the breadth of upcoming Computing program networking events, and about our recent Honorable Mentions in the premier Computing Research Association Outstanding Undergraduate Researcher Award competitions. And student accomplishments don’t stop with graduation. I hope you enjoy the note from another one of our remarkable department alumni, Albin Laga.
This is a partial listing of department research publications. For a complete listing, please go to: http://www.marquette.edu/research.

Sheikh Iqbal Ahamed

Paul Bankston

Naveen Bansal

Dennis Brylow

Anne Clough

Kim Factor
Kim Factor, Rebecca Kohler, Jason Darby, Local Out-Tournaments with Upset Tournament Strong Components I: Full and Equal (0,1)-Matrix Ranks, Ars Combin. 95 (2010), 3 – 17.

Rong Ge
Rong Ge, Xinhou Feng, Xian-Da Sun, Characterizing Energy Efficiency of Parallel I/O Intensive Applications on Power-Aware Clusters. Proceedings of the 24th IEEE International Parallel and Distributed Processing Symposium (IPDPS’10), April 2010. (Atlanta, GA)

Gholamhossein Hamedani

Peter Jones

Praveen Madiraju

Marta Magiera

Stephen Merrill
Fall 2010 Faculty Anniversaries

Congratulations to MSCS Faculty for a combined total of 70 years of service to the Marquette University Community

Praveen Madiraju - 5 years of service
Mary Utzerath - 30 years of service
Dennis Brylow - 5 years of service

Sheik Ahmed's Research featured in Marquette Tribune

The Marquette Tribune highlighted Sheikh Iqbal Ahmed's important and culturally sensitive research using smart phone technology to monitor and treat advanced stage breast cancer patients in Bangladesh. This research meshes well with both the technical culture of Bangladesh, where the majority of the population own a cell phone, and the medical culture of the country where only about a fifth of the cancer patients receive medication and electronic medical records are very rare.

A Warm Welcome to the Newest Members of the MSCS Department Family

On Friday, August 13, 2010, a daughter named Lasya was born to Praveen Madiraju and his wife, Shimjim Malladi. On Wednesday, November 10, 2010, Dennis Brylow and his wife, Petra became the parents of a son, Dexter James Brylow.

MSCS News

MSCS 2010 Summer Potluck Picnic

In early September, Gary and Sally Krenz were the gracious hosts for the MSCS Summer Potluck at Longacre Pavilion in Fox Point. Great food shared with wonderful colleagues on a late summer afternoon. Perfection!

New Director of Computing Program

Dr. Thomas Kaczmarek

This summer Tom Kaczmarek joined the Mathematics, Statistics and Computer Science Department serving as the Director of the MS in Computing program. While seemingly new to the department, Tom is no stranger to Marquette, as he once was TA and graduate student in the Mathematics Department before leaving for the University of Pennsylvania to receive a Ph.D. in Computer and Information Sciences.

He also has three children who graduated from Marquette and he served as a member of the Marquette Parents Association Board for several years. After graduating from Penn, Tom went on to work for General Motors Research lab where he continued to work on speech and signal processing, the topics involved in his thesis. Recognition for vehicle applications and mobile speech technology for warehousing were two of the topics investigated. During this time, Tom taught several courses at Wayne State and Oakland University.

He went on to join the research staff at the University of Southern California’s Information Sciences Institute to further his interests in knowledge representation, where he undertook work on ontological reasoning and the application to natural language processing, software engineering, and user interfaces.

He returned to General Motors to lead architecture efforts for including AI and knowledge representation in engineering and manufacturing systems (CAD/CAM/CAE/CIM). He was also responsible for the “math toolkit” that focused on common non-uniform rational B-spline representations for surface geometry. Eventually, Tom took on responsibilities for architecture, software engineering, and contracting for global manufacturing before finishing his career managing global contracts and technology for Identity and Access Management.

Since joining Marquette, Tom has spearheaded efforts in the Computing program for networking opportunities, broadened the program’s message, initiated a well-received online professional seminar, and created a hybrid class in programming languages design concepts. With the active help and support of the Marquette administration, including Gary Krenz, the MS in Computing program established a new relationship with GE Healthcare for developing software engineering capabilities. Tom is working with the College of Business and Kate Kaiser to understand what Marquette should do to respond to the growing need for IT workers in Healthcare.

Tom strongly believes that Computing professionals need to be able to research and analyze technical topics in order to keep pace with the technology and that online classes foster these skills. He has fashioned the online seminar and new online classes in Software Quality Assurance and Information Systems to emphasize reading and analyzing literature to develop opinions and recommendations. His work to develop courses is being supported by the Center for Teaching and Learning.

Grants and Awards

Anne Clough

Is part of a team, which includes faculty from the Medical College of Wisconsin and the University of Chicago, that was awarded an NIH grant entitled “Innovative Reconstruction Algorithms for Undersampled SPECT.”

Daniel Rowe

Is a member of the CTIS of Southeast Wisconsin team that received a 5 year NIH Clinical and Translational Science Award grant. The focus of research will be to develop a protocol to reduce the time it takes for clinical research to become patient treatment.

John Moyer

Received a supplemental award for his NSF grant, “A longitudinal Comparison of the Effects of the Connected Mathematics Program and Other Curriculums on Middle School Students’ Mathematics, Statistics and Computer Science Faculty Members 2010

Sheikh Iqbal Ahmed

Received an award from WiFi Locator Solutions, LLC for his project, “Smart Tracker Using WiFi.” The goal of this research is to implement a low cost, low power tracking solution which uses the signal strength of radio transmissions to determine the position of a WiFi tag.

Received an award from the International Breast Cancer Research Foundation for the project entitled, "Breast Cancer Palliation Study Phase I." The project proposed will design and develop AutoCare (AC), a cellular phone and wearable sensor health-assessment system that will facilitate palliative care for breast cancer patients in the advanced state of the disease in the country of Bangladesh.

Dennis Brylow and Rong Ge

Their proposal “Light as a Cloud: A Lightweight, Power-Aware O/S for the SCC” was selected by Intel Corporation. They will be part of a collection of academic researchers conducting experiments and deploying technologies on an Intel prototype, the Single-chip Cloud Computing Platform.

Marta Magiera

Is part of the West Allis West Milwaukee and Marquette University Partnership recently awarded a two year Math and Science Partnership Grant by the Wisconsin Department of Public Instruction.

Marta received a grant from the Education Advancement Foundation for her project, “Investigating Non-standard Arithmetic and Algebraic Procedures and Algorithms.” This unrestricted grant provides monetary support for enhanced inquiry-based learning in mathematics courses for pre-service elementary school teachers.

Focus on Faculty

Dr. Thomas Kaczmarek

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GRADUATE NEWS

WHERE IS THE WORLD IS DR. JONES NOW?

The picture in the Spring 2010 issue was taken in front of Volcano Arenal, in Costa Rica. Compared to that toughie, this one is a gimme!

2010 Forward Thinking Poster Session Winners

The department had a strong presence at the Marquette Graduate School 2010 Forward Thinking Poster Session. One of our department’s posters, “The Amader Gram Breast Care Palliation Study: Phase 1” by Dr. Sheikh Iqbal Ahamed and graduate students, Ferdaus Kawar, Mohammad Taminuzzaman, Md. Munirul Haque, and Mohammad Adibuzzaman, won a 2010 Forward Thinking Poster award. The poster session is a great opportunity for our students; because this poster event focuses upon the research question, preliminary results and the scholarship one would like to pursue, rather than on completed research.

Dr. Jack Moyer - from page 1 algebra and the impact of different middle school mathematics curricula on this goal.

Dr. Moyer is also currently working with Dr. Marta Magiera (MSCS) and Dr. Leigh van den Kieboom (College of Education) on an investigation of pre-service elementary teachers’ knowledge of algebraic thinking. Our Spring newsletter’s “Focus on Faculty” will explore this vein of research more fully.

Spring 2010
B.S. in Computer Science
Kirsten Weber

Brother Albin Laga, S.D.S.
M.S. Computing ’06

Best wishes from Tanzania.

Since last year I have been working on a radio station project in Masasi, located in the southern region of Tanzania. The purpose of this project is to promote Christian values and provide an educational resource for this impoverished area.

We decided to provide the labor ourselves in partnership with the local population because the professional construction costs were prohibitive ($50,000 USD). The benefits of this decision were two-fold: it reduced the construction costs by 75% and provided a powerful educational experience for the community.

The radio building and tower are almost complete. This project makes me happy because I designed it myself and constructed it from locally available materials.

Editors note: Br. Albin’s radio station project was featured in Marquette Magazine. If you wish to view this article please go to:

http://marquette.edu/magazine/recent.php?subaction=showfull&id=137428460

Lingtao Zeng, our department’s UNIX System Administrator, has accepted a system specialist position with Harley Davidson, starting the week of January 17. Lingtao will be in their Global Information Services division; his duties will include deployment of new technologies, as well as the design, installation, configuration, maintenance, and system integration testing of server and storage systems. Although we will miss him, this career step is a wonderful opportunity for Lingtao and his family.

We’ll still see Lingtao, from time to time, as he continues his doctoral studies. Congratulations Lingtao; best wishes and every future success!

Colloquia - Fall 2010

September 10 – Bruce H. Edwards, Mathematics Department, University of Florida, Gainesville: How Do Calculators Calculate?

September 17 – Douglas Harris, Department of Mathematics, Statistics and Computer Science, Marquette University: Exponentiable Spaces.

September 24 – Balamurugan Pandiyan, Department of Mathematics, Statistics and Computer Science, Marquette University: Mathematical Modeling and Dynamical analysis of the Disruption of the Hypothalamus-Pituitary-Thyroid (HPT) Axis.

October 1 – John Borg, Department of Mechanical Engineering, Marquette University: A Comparison of Two- and Three-Dimensional Multi-Scale Simulations as Applied to the Compaction of Porous Heterogeneous Materials.


October 15 – Rong Ge, Department of Mathematics, Statistics and Computer Science, Marquette University: Evaluating Parallel I/O Energy Efficiency.

October 29 – Ishfaq Ahmad, Computer Science and Engineering Department, University of Texas-Arlington: High-Performance Green Computing in Large-Scale Computational Grids.

November 5 – Iain Bruce, Department of Mathematics, Statistics and Computer Science, Marquette University: An Adjustment to SENSE Image Reconstruction through a SENSE-Isomorphism Theoretical Image Voxel Estimation (SENSE-ITIVE) Model: Statistical Properties and Implications.

November 9 – Peter Zilahy Ingerman: Why is server and storage systems. Although we will miss him, this career step is a wonderful opportunity for Lingtao and his family. We’ll still see Lingtao, from time to time, as he continues his doctoral studies. Congratulations Lingtao; best wishes and every future success!

MSCS UPDATES

GRADUATIONS

December 2010
M.S. in Computer Science
Anthony Ciske
Kraig Ritmanich
B.S. in Mathematics
Jill T. Anderson

Spring 2010
B.S. in Computer Science
Kirsten Weber

ALUMNI NEWS

We would like to know where you are and what you are doing. Please send news and current address updates to:

newsletter@mscs.mu.edu

Brother Albin Laga, S.D.S.
M.S. Computing ’06

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