Do you know where Dr. Jones is? Here’s a hint: this photo was taken somewhere in the Pacific Northwest! E-mail your answers to Dr. Jones at peter.jones@mscs.mu.edu. The picture of Dr. Jones in the last newsletter was taken at Central Park in New York City, New York. Barret Breuckman, Susan (Hull) Ciardullo, Rich Kelly, Lauren A. Nackoney, Lexi Antonichory, Tim Mann, Anirban Ghosh and Crystal Johnson all guessed correctly! A few of their stories can be found in the Alumni News section. If you would like to get in touch with any of them, just let us know.

CATHY LIE  M.S. MSCS ’94
Life has been amazing lately, both in good terms and in challenging terms. After graduating from MU with a master’s degree in 2004, I returned to study in Electrical Engineering for 2 semesters. In May 2005, I joined as a mathematics teacher in Florida. A few years later, I decided to move to Austin in 1974 where I took the job of Department Chair at the recently founded University of Texas at Austin to do a Ph.D. in Math while Sue simultaneously did a Ph.D. in Rhetoric and Composition.

I got married in 1969 to Sue Bissell. Sue and I have two children, David and Colleen. We would like to know where you are and what you are doing. Please e-mail us at newslet@mscs.

RICH KELLY  M.S. MATHEMATICS ’94
I am still working at BAE Systems in New Hampshire. After several years of software engineering and development and later software engineering project management, in May of 2003 I made the move to the first level of functional management and became a software engineering department manager in our Electronic Protection line of business. Early in 2005 I took the role of department which actually spans two different business areas, one of which is our Sensor Systems line of business (missile seekers, electronic and laser subsystems, and infrared imaging systems), the other is our Advanced Systems and Technology business area (lots of independent and contract R&D in about 8 different specific technology areas). Interesting move for me since it is the same role but is a totally different job! My wife Cindy and I have four children, Eoghan, Aine, and twins Ceara and Seana.

TIM MANN  B.S. MATHEMATICS ’90
I received my B.S. in Mathematics from MU in December of 1980, then whisked away one semester as a math major at the MU math department, taking a physics class with Dr. Jones and setting up the department’s Tenk computer, before going on to Stanford in Fall 1981 to work on my Ph.D. in computer science. I graduated from Stanford in 1987 and took a position at the Digital Equipment Corporation (later company) Systems Research Center in Palo Alto. After 14 years at SRC, I’m now a long-time resident at silicon Valley standards, integrating the intellectual into project development. I started my current engineering job at VMware, Inc., in September 2001 and am still enjoying the challenges there very much. Just recently a very long running project of mine reached a milestone. A book that I co-authored with some of my colleagues from SRC Software Configuration Management Using Vesta was published.

We would like to know where you are and what you are doing. Please e-mail us at newslet@mscs.
Program in Statistics
By Dr. Naveen Bansal

Demand has been increasing steadily for statisticians in the market place, especially in the pharmaceutical and insurance industries. The MSCS Department offers specializations in statistics at the Masters and Ph.D. levels, the Ph.D. program having been recently approved. Currently there is no undergraduate major in Statistics. However, a student may specialize in statistics within the MATH program. Doctoral students can find jobs both in academia and in industry. Masters students are in high demand in the financial sector, in research hospitals, and in the pharmaceutical industry. Bachelors students can also find jobs in these sectors at a junior level. Bachelors students can also pursue actuarial science, where they can earn high salaries after passing a series of exams offered by the Society of Actuaries.

Statistics is indeed a part of Mathematics. Some would associate statistics with number crunching, but it is much more than that. Perhaps before 1900, it was just that; however with the discoveries in the 20th century by C. Pearson, R. A. Fisher and J. Neyman, it is now a rigorous mathematical subject. What separates statistics from other areas of mathematics is that it has applications in almost all fields. Today, statistics is playing an important role in genetics, as a tool for discovering genes that are responsible for diseases, such as some types of cancer. In microarray technology, genes are translated in a microarray chip. The data from these chips are analyzed using statistics to discover genes responsible for adverse conditions such as cancer. Just by collecting the color intensities, we can find the best populations. Navneen is working on this topic to develop new statistical methods that can be used in genomics in order to select important genes responsible for adverse conditions such as various types of cancer.

Dr. Hossein Hamedani’s main interest is in the area of Characterizations of Distributions. Most of the statistical procedures are based on certain characteristics of the underlying population distribution. So the challenge is to characterize the probability distribution of the population. Hossein has done some important work in this area.

We offer many different statistics courses, from an elementary survey course to an advanced modern course. Some of the topics we offer are Time Series Analysis, Regression Analysis, Design of Experiments, Multivariate Data Analysis, and Biostatistics. We also offer a variety of other courses as topic courses or independent studies. Seminars in statistics are also offered frequently. Through interaction with our bio-mathematics and bioinformatics faculty, students also have a unique opportunity to learn about these fields, in which statistics plays a critical role. They also have the opportunity to engage in teams involved in medical research at an early stage of their studies. Among other graduate courses of interest to students of statistics are Analysis, Bioinformatics, Differential Equations, and Operations Research. Students in our program have a unique opportunity to become specialists in bio-mathematics and biostatistics, making them very employable in the corporate world as well as in research laboratories.

IN THIS ISSUE

Letter from the Chair ................................................................. 1
Program in Statistics ................................................................. 1
Undergraduate News ............................................................... 2
Congratulations ....................................................................... 2
New Faculty ............................................................................. 2
Activities and Awards ............................................................. 2
Research Publications ............................................................. 3
Graduations ............................................................................. 3
In Memorial of Paul Flaherty ....................................................... 3
Alumni News ............................................................................ 4
MSCS Updates ........................................................................ 4
Where In the World Is Dr. Jones? ................................................ 4

Newsletter Editor: Paul Bankston
Telephone: (414) 288-7573
E-mail address: newsletter@mscs.mu.edu

This newsletter is a publication written by students and MSCS faculty for alumni of the Department of Mathematics, Statistics, and Computer Science at Marquette University.

Peter Jones
Chair
Department of Mathematics, Statistics, and Computer Science

From the Chair

As I write to you, Thanksgiving is almost upon us and this Fall semester — seemingly just under way — is drawing to a close. The semester has seen a number of fresh beginnings. As always, first and foremost has been the arrival of our newest Assistant Professor in applied mathematics, Dr. Sherry Scott. We selected Sherry from a pool of over 200 applicants and are extremely pleased that she agreed to join us. Also joining us for this year are Dr. Tatiana Soile and Ms. Connie Laughlin. You can find a picture and some information about each of them inside.

This year we are again searching for an Assistant Professor in mathematics education. It’s a very competitive field and so I hope you will wish us luck as our interviews begin. Next year, we expect to have ten Assistant Professors out of a total of twenty four in ten-track roles. In 2000 we had none! So recent years have been exciting ones for the department’s future.

Our lead story reflects our success in beginning new doctoral specializations: in Statistics and in Logic and Foundations. We will showcase the latter in the next issue of this publication. Each has already attracted several new students and they will attract more as their existence becomes better known. Ironically, at this very time the University is bringing in a team of consultants to consider the status of the various doctoral programs at Marquette, with a view to “reallocation” of resources from under-performing ones to new ones. Will they give our new specializations (and new ones we wish to develop) a chance to grow? Will they see the opportunities for the future inherent in our growing group of brilliant junior faculty? We will do our best to persuade them so.

The University proclaims that we are to go from “good to great”. Is there a great university without a doctoral program in mathematics? If you support our mathematics and statistics doctoral programs and what’s more, support expanding them to include computer science and mathematics education, email me at peter.jones@mu.edu.

Speaking of email, I had a great response to “Where in the world is Dr. Jones?” last issue. You know … you can always respond even if you don’t know where I am! On a personal note, last February I was elected to another term as Chair. I thank all our wonderful faculty members for their support.

I wish all of you a wonderful holiday season. I will be thinking of you as I sit on the beach in my home town Perth in 85 degree weather.
The department's Undergraduate Committee has spent the past couple of years reviewing its MATH major in an effort to insure that we are educating our students to the best of our ability. Besides extensive discussion with our majors, we also spent time carefully examining the major requirements at other universities as well as the recommendations put forth by the Mathematical Association of America.

As a result, we have modified the requirements of the major in an attempt to construct a more cohesive program. The changes were motivated by our desire to provide more study-in-depth, while simultaneously maintaining a breadth component. This will now allow students to focus in a particular branch of mathematics, and hopefully will provide opportunities for students to begin to appreciate the connections between these various branches.

In particular, study-in-depth is now incorporated by requiring students to take a year-long sequence in one area of pure, applied, or statistical mathematics. They will also need to select an additional elective from each of one of these areas to insure familiarity and basic competency in all of the fundamental areas. These new requirements will take effect in Fall 2007. The faculty is excited to have the opportunity to teach several new courses and to better meet the needs of our mathematics majors.

Sheikh Iqbal Ahamed


Ruta Bajorunaite
Presented: Statistical Inference for Competing Risks Data, Department of Mathematical Sciences, University of Wisconsin-Milwaukee, October 13, 2006.

Paul Bankston

Jim Factor
Attended the 37th Southeastern International Conference on Combinatorics, Graph Theory, and Computing – Florida Atlantic University, March 2008.

Attended the 22nd Annual ACM Symposium on Computational Geometry, Sedona, AZ, June 5-7, 2006.

Kim Factor
Attended the PKAL (Project Kaleidoscope) 2006 Conference in Chicago, October 6 through 8, 2006. This conference centered on faculty trying to teach the STEM (Science, Technology, Engineering and Math) courses cooperatively.

Presented: Isomorphism in Underlying Graphs and Domination Graphs at the University of Colorado at Denver Discrete Mathematics Seminar. One of our undergraduate students, Sarah Schmitt, accompanied her on the trip, and sat in on the talk.

Peter Jones
Attended the Microsoft Faculty Summit, at Microsoft Corporation, Redmond, WA, July 17-18, 2006.

Gary Krenz
Served on BOHI Study Section (Bio Computing and Health Informatics), National Institutes of Health, March 29-30, 2006 and June 28-29, 2006, Washington, D.C.


Steve Merrill
Presented: Biocalculus: Reflecting the needs of the students Mathematical Biology & SIMS Life Sciences August 2006, Raleigh, North Carolina.


John Moyer

The department was the site of the fall meeting of the advisory board of Dr. John Moyer and Dr. Jinfai Cai’s 5-year, NSF-funded project: A Longitudinal Investigation of the Effect of Curricula on Algebra Learning (LieCal). The advisory board is composed of leading mathematics educators from around the country.

Francis Pastijn
Visited Lanzhou University and Zhangye Normal University, Gansu, P.R.C., Northwest University and the University of Yan’an (Shanxi, P.R.C.), and Chengdu Normal University (Sichuan, P.R.C.) from May 20 to June 14, 2006. He gave lectures on semigroup varieties, varieties of idempotent semigroups, the equational theory of the bicyclic semigroup, ideal extensions of locally inverse semigroups, the equational theory of the bicyclic semigroup, ideal extensions of locally inverse semigroups. At Lanzhou University he gave two talks on Undergraduate and Graduate Studies at Marquette University to an audience of mathematics students.

Rebecca Sanders
Presented: Common hycyclyc vectors for a path of operators at the CBMS/NSF Regional Research Conference in Mathematical Sciences, Probabilistic and Combinatorial Approach in Analysis at Kent State University, Ohio, August 6-12, 2006.

Sherry Scott
Selected and funded to attend a New Directions Short Course on Biophysical Fluid Dynamics taught by Michael Shelley and Raymond Goldstein, held at the Institute for Mathematics and its Applications, June 19-30, 2006.

Craig Struble

Poster presentation Identification of Experimental Techniques in Biomedical Literature, with M. Obersi and S. Sugg at Bio - Natural Language Processing, June 8, 2006.

Tatiana Solskii completed a Ph.D. in Mathematics at Moscow State University in 1996 and a second Ph.D., in Applied and Industrial Mathematics, at the University of Wisconsin, Milwaukee, in 2002. The title of the latter dissertation was Wavelet Based Computerized Tomography. Before joining Marquette University, Tatiana most recently held a Postdoctoral Fellowship at the Institute for Mathematics and its Applications, University of Minnesota.

Connie Laughlin completed a Master’s degree in Mathematics at Marquette University in 1986. She has previously taught classes in mathematics education for our Department including a full-time appointment in 1993-94. Connie has taught in middle and/or high schools in the Milwaukee, Franklin, Waukesha and Moorhead school districts, and was chairperson of K-6 mathematics in the Waukesha school district.
Sheikh Iqbal Ahamed


Ruta Bajuraunaita

Paul Bankston


Anne Clough

Kim Factor


Digraphs with isomorphic underlying and domination graphs: Components of K_3, K_2, or C_4 in (D), with L. Langley, Congressus Numerantium 174 73-82, 2005.

Gary Krenz


Steve Merrill


Francis Pastijn


Rebecca Sanders


In the summer of 1982, while trying to get our department’s first real computer, running a used PDP-11/34(4), a fresh young face appeared at the door and said, “Is that a computer?”

It was Paul A. Flaherty, about to enter the Engineering College as a freshman. Over the years he became a close academic friend and someone I knew and admired as an incredible student, and an incredible human being. Paul graduated summa cum laude with a B.S. in Electrical Engineering and a second major in Mathematics. He was valedictorian in both fields, and went on to receive a Ph. D. in Electrical Engineering from Stanford University with a thesis in Network Systems focused on networking protocols. While at Marquette he was a member and very involved participant in the engineering fraternity Tau Beta Pi, the mathematics club Pi Mu Epsilon, and the social fraternity Triangle.

Paul was a wonderful student and colleague, and always a colleague in learning. He was very involved in a wide variety of activities other than those in his profession including amateur radio (N9FXZ) and railfanning - where he developed a reputation as a railroad photographer. His best known contribution to computing is the invention and management of Alta Vista, the first high-speed search engine, while working at the DEC Network Research Laboratory. He came to be regarded as one of the world’s leading authorities on protocols, and also on corporate strategy as related to advanced technology.

Paul married his Stanford sweetheart Natasha Margaret Minenko, a mathematics graduate of Stanford, and herself a significant figure in the field of mobile and wireless communications.

His brother Dennis was also a graduate of our department, and many in his family attended Marquette University. No one who ever worked with Paul will ever forget his enthusiasm, his energy, and his dedication to his profession. He was also the most pleasant colleague imaginable, and someone you could always depend upon.

One very striking memory from a 1993 visit to his Bay Area was to learn that he was an adjunct member of the Sheriff’s department leading the amateur radio network that was part of the search for Polly Klaas, a kidnap and murder victim whose case was instrumental in seeing that the Amber Alert came into being. Paul was always ready to help in any worthwhile endeavor.

Paul died on March 16, 2006 from a sudden heart attack while at home in Belmont California.