



ALUMNI NEWSLETTER

MATHEMATICS AND COMPUTER SCIENCE UNIVERSITY OF MISSOURI-ST. LOUIS

APRIL, 2007

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LETTER FROM THE CHAIR

Dear Alumni and Friends,

Please enjoy reading the Alumni Newsletter. As you may have noticed, in the last few years, the newsletter has expanded into a new format. John Antognoli, Galina Piatnitskaia, Emily Ross and Nazire Koc have been making all the changes and have been increasing our efforts to stay in touch with alumni. The department had a relatively quiet year. Qingtang Jiang was promoted to Full Professor. Professor Jiang is an expert on wavelets and their applications, with more than 30 publications by now. Assistant Professor Adrian Clinger has newly joined our department as a geometer and string theorist. He got his PhD from Columbia University and comes here after visiting the Institute for Advanced Study and Stanford University for a few years. Martin Pelikan has published an edited volume on scalable optimization. Shahla Peterman received the Lecturer of the Year Award from the College of Arts and Sciences. Our PhD program is small but thriving and it is a pleasure to be able to congratulate Eric Mason and David Stamps, the latest two graduates.



A. Prabhakar Rao

Cordially,
A. Prabhakar Rao

RICHARD STALLMAN TO DELIVER THE 2007 SPENCER LECTURE

**"THE FREE SOFTWARE MOVEMENT AND
THE GNU/LINUX OPERATING SYSTEM"**
MONDAY, APRIL 23, 2007 7:00 P.M.
CENTURY ROOM,
MILLENNIUM STUDENT CENTER

This lecture is made possible by the generous gift of Robert Spencer (B.A. Mathematics, '72).

Richard Stallman is a well-known software freedom activist and software developer. In 1983 he began the GNU Project to create a free Unix style operating system. He has since, been the project's main architect and leader. As a result of this he began the free software



Richard Stallman

movement and in 1985 founded the Free Software Foundation. He also co-founded the League for Programming Freedom. The GNU operating system when combined with the Linux kernel makes a complete operating system, which most people simply refer to as Linux (without recognising GNU).

He has received considerable recognition for his work including a MacArthur Fellowship in 1990. He received the Association of Computing Machinery's Grace Hopper Award "For pioneering work in the development of the extensible editor EMACS (Editing Macros)" in 1991, the Electronic Frontier Foundation's Pioneer Award (1998), the Yuri Rubinsky Memorial Award (1999) and the Takeda Techno-Entrepreneurship Award for Social/Economic Well-Being (2001). He has received honorary doctorates from Sweden's Royal Institute of Technology, University of Glasgow, Vrije Universiteit Brussel, Universidad Nacional de Salta, an honorary Professorship from Universidad Nacional de Ingenieria del Peru and membership in the United States National Academy of Engineering.

Dr. Stallman will speak on "The Free Software Movement and the GNU/Linux Operating System" on Monday, April 23 at 7:00 pm in the Century Room of the Millennium Student Center at UM-St. Louis.

SCHOLARSHIP NEWS FROM RON DOTZEL, CHAIR OF THE ANDALAFTE, SPENCER, AND SCHOLARSHIP COMMITTEES

Mathematical Sciences Alumni Scholarships are given each Spring semester to undergraduate students in Mathematics or Computer Science who have an outstanding academic record at UM-St. Louis. These awards are made possible by the generosity of alumni of UM-St. Louis, most of whom are graduates of the Department of Mathematics and Computer Science. The 2006 winners are:

Cathleen Aubuchon	Elizabeth Radetic
Larry Burkett	Clariencia Stroud
John Hoven	Eric Tyhurst
Eric Lee	

The **Joseph and Mary Vogl Scholarship** is given each year to a mathematics undergraduate who has achieved distinction. This year's winner is **Harry Pope**.

The **Raymond and Thelma Balbes Scholarship** is given each year to an undergraduate mathematics major who has attained an outstanding academic record. This year's winner is **Colleen Leahy**.

The **Edward Z. Andalafte Memorial Scholarship** is given each year to a mathematics undergraduate who has a record of outstanding academic performance. This year's winner is **Aleksey Kazakevich**.

The **Andalafte Mathematical Competition** is a 3 hour exam consisting of five very challenging problems. We anticipate offering this competition each year. The competition is open to all UM-St. Louis undergraduates. The winner for 2006 is **David Peaslee**.

Well-deserved congratulations to all.

REPORT ON THE 2006 SPENCER LECTURE WRITTEN BY SCOTT LAVELOCK

(It was his assignment in English 3140, News Writing)

Robert Hogg, professor emeritus of statistics at the University of Iowa, engaged an audience at the University of Missouri-St. Louis on the role of statistics in everyday life on Monday, April 24.

His speech, entitled "Probability and Life", not only showed the crowd of about 110 students and faculty how they can learn from statistics to make decisions in their lives, but also kept everyone laughing throughout the evening with his sense of humor.

"If you don't know what you're talkin about," joked Hogg, 81, "throw in a decimal point somewhere!"

Hogg (pronounced HOAG) talked of figures, probabilities, and statistics with all sorts of decimal points in his speech given in the Century Room on the 3rd floor of the Millennium Student Center at UMSL. Many of these facts were regarding the probability of winning games of chance, and what people should know before they make any bet.

"By the way, I'm not encouraging to gamble..." Hogg said with a laugh as he provided his audience with numbers that would be helpful to anyone placing a bet on anything from the flip of a coin to the roulette wheel. In fact, his demonstration of statistical formulas, all done on a simple overhead transparency that he jokingly called his Power Point slides, showed how the numbers are stacked against someone rolling the proverbial dice.

The former president of the American Statistical Association showed how someone who enters a casino with \$80 and makes up their mind to finish with either \$100 or \$0 will end up with \$0 a whopping 91% of the time. He also exemplified how remote the possibility of winning the Power ball jackpot is, saying that a person would have roughly the same chance of correctly picking a point on a string being stretched from New York to Los Angeles within one inch of the exact point.

"Therefore, I've never bought a Power ball ticket!" exclaimed Hogg in his transference of wisdom. "But it is still only a dollar!"

The author of four statistics textbooks that are now standard in colleges across the nation had plenty of advice for the crowd mostly of math and computer science students and faculty. His statistical findings have shown that one should not put insurance on anything worth less than two months salary, and that giving money back to charity and education makes the chances very good that your money will go to good use.

"They told me to tell you this, but remember the UMSL Department of Math and Computer Science when you're 81 years old." said Hogg, whose lecture was sponsored by the aforementioned department. UMSL alumnus Robert Spencer, a math student of the class of 1972, underwrote the presentation as the 9th Annual Spencer & Spencer Systems Math and Computer Science Lecture.

Hogg, who has been giving lectures at colleges around the country for over 50 years, had plenty of stories to tell that kept the audience on its toes. He told of one story about an encounter he and his friends had with a few intoxicated men several years ago, where he playfully came to the random conclusion that the probability of one of the drunken men sleeping with another man's wife was about 63%.

"Of course, after I got married I found out that the probability of a married man sleeping with anyone's wife was 0%!"

UMSL Chancellor Thomas George opened the program promptly at 7:30 p.m. by welcoming everyone on a lovely spring evening and apologizing for them having to miss the game between the Cardinals and the Pirates. Hogg grew up in Hannibal, MO and is a lifelong Cardinals fan, however, and kept the Redbird Faithful happy with his stories of watching the team play as early as the 1930s.

Following his speech, Hogg was presented with a framed picture of St. Louis by Chancellor George, to which he responded jokingly, "Oh...I was expecting cash..." Following the chorus of laughter, Hogg assured the audience, "You're a great class; you all get A's! I think you've had enough Hogg-wash!"

SHAHLA PETERMAN, LECTURER OF THE YEAR

We honor **Shahla Peterman** who received an award of the **Lecturer of the Year** from the College of Arts and Sciences in 2006. Mrs. Peterman has always been a wonderful teacher and a very creative person. The last couple of years also demonstrated her great leadership potential. As you may know from our last year's Newsletter, she was in charge of introducing a new technology into teaching College Algebra. Now UMSL has a new facility (MTLC) where students have an opportunity to study mathematics using modern technology.

Students and faculty members of our department have always known that Mrs. Peterman is one of the best teachers. Her award is recognition of her talent at the college level.

Dear Shahla, we congratulate you once again and wish you many more happy and productive years at UMSL!

NEW SUITS FOR BILL CONNETT

In the Spring of 1968, a fresh young graduate from the University of Chicago applied for a job at the new campus of the University of Missouri System. The chairman at the time, Ed Andalafte, the new and only professor in the Department, Deborah Haimo, and the Chancellor, Glen Driscoll, all assured the callow candidate that although we were young and awkward, and still unformed we were going to become a great research university. Part of the joy of coming to The University of Missouri- St. Louis (UMSL) would be to help shape the directions and new programs the new school would offer. In particular, they wanted to hire a faculty that would allow this school to become a strong research institution, and in particular we would soon offer the Ph.D. in Mathematics.

The candidate was impressed by the energy of the new enterprise, and decided to come to UMSL to build this new institution. The candidate had no idea how complicated this endeavor would be, nor how long it would take. It was an especially sweet moment on November 10, in 2005, for the graying professor that the callow candidate had become to be part of the examination committee that awarded Karen Wurdack the first Ph.D. degree granted by the Department of Mathematics at UMSL. (Thirty seven years later!) Karen did a great job, and our program is now bubbling along. We now have four graduates, and some twelve other candidates in the pipeline. Neither Andalafte, nor Haimo, nor Driscoll were here to see it happen, but I was.

This singular moment for the Department, and for this graying professor in particular, led to some speculation on my part about the nature of the mathematical enterprise, and the way we carry mathematical knowledge from our mathematical parents to our mathematical children. I was inspired to look up my mathematical genealogy, something I had never done before. You might enjoy looking at this on my web page (www.cs.umsl.edu/~connett/, and click on the link to my vita). I was so impressed to see that I am the (great)⁴-grandson of Pafnuty Chebyshev that I decided to give two colloquia this Fall on one of my favorite mathematical objects, the Chebyshev polynomials. In the course of this I looked through many of Chebyshev's papers, and discovered that old Pafnuty was a hell of a guy. He also owned some really classy suits (St. Petersburg chic, circa 1860), which he wore when he was demonstrating some of his more practical inventions, such as a device to row a boat more efficiently, or a hand drive for a wheel chair that keeps your hands clean. I sometimes think that they must have had more fun in those days.

The life of this Research Professor (Emeritus), is not as tranquil as I had imagined it would be. I thought that giving up teaching and administration would free up vast amounts of time for research, and to some extent that is true. I have had the time to pursue a number of questions that Alan Schwartz and I had to put aside in our research program, some because they were too difficult at the time, some



Bill Connett

because they took us too far from our areas of expertise. I am happy to report some success on the first kind of questions (A classification of the n-dimensional polynomial hypergroups). However in the second area, I have spent more time than I care to admit, and so far to no avail, on rethinking the MP3 algorithm using the product formula for the prolate spheroidal wave functions that Alan and I published in 1993.

One reason that the amount of time available for research does not seem so vast, is that in 2003 my wife was recruited from the Department of Surgery at Washington University to the Department of Surgery at the University of Michigan, in Ann Arbor. I now spend one to two weeks a month in Ann Arbor, and this commuting takes its toll. On the other hand, maybe old Pafnuty did not have more fun in those days of yore. Hmm. Maybe I need some new suits.

MARTIN PELIKAN PUBLISHES A NEW BOOK "SCALABLE OPTIMIZATION VIA PROBABILISTIC MODELING: FROM ALGORITHMS TO APPLICATIONS"

Martin Pelikan, Assistant Professor of Computer Science at UMSL and Director of the Missouri Estimation of Distribution Algorithms Laboratory (MEDAL), and two of his former colleagues from the University of Illinois, Kumara Sastry and Erick Cantu-Paz, have published a new edited book. *Scalable Optimization via Probabilistic Modeling* (Springer, 2006) presents a comprehensive picture of a new category of optimization procedures called Estimation of Distribution Algorithms (EDAs) and should be of interest for optimization researchers and practitioners alike.



Martin Pelikan

Well-known author and researcher, David E. Goldberg, Distinguished Professor and Director of the Illinois Genetic Algorithms Laboratory (IlligAL) at University of Illinois says, "Pelikan's newest book focuses like a laser beam on one of the hottest topics in evolutionary computation over the last decade or so: estimation of distribution algorithms (EDAs). EDAs are an important current technique that is leading to breakthroughs in genetic and evolutionary computation and in optimization more generally." Duane D. Johnson, Professor and Bliss Faculty Scholar, University of Illinois at Urbana-Champaign highlights the importance of the book for practitioners: "the book brings together a selection of experts that (1) introduce the current methodology and lexicography of the field with illustrative discussions and highly useful references, (2) exemplify these new techniques that dramatically improve performance in provable hard problems, and (3) provide real-world applications of these techniques."



