

NEWS LETTER

THE FIRST MATHEMATICIAN



December 1999

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Reminder

Phonathon will be held
Jan. 19-20 and 23-24, 2000.

What's on your mind?

We continue to look forward to hearing from our former students and to sharing in your accomplishments. While we enjoyed the investment of our careers in teaching, the continued return on that investment is the accomplishments of our students. Let us hear from you; it will also make the work of newsletter editor more fun!

I would also request that you might give some thought as to what you would like to see included in the newsletter. Our perception of what you would like to know might be somewhat different from what you really want to know. Don't be bashful; just tell us!

Glen Haddock, Editor

Mathematics & Statistics Department
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e-mail: mathstat@umar.edu

Distance learning up-close

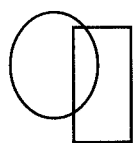
Math help demonstrates state-of-the-art

Virtual Office, now open nearly 40 hours per week, lets students sit down electronically with an instructor for help with math. "Netmeeting" replicates all the essential ingredients of a visit to an office. The program is accessible through Windows 95 (or higher) and systems equipped with soundboards and headset. Voice and shared whiteboard provide live interactive communication between teacher and student. All four University of Missouri campuses offer linkage. Begun in 1998 with college algebra, calculus is now included. Paid staffers are Yilin Cao, Rolla, UMR graduate teaching assistant, Dan Redmond, UMColumbia GTA and UMR graduate, Laurie (Croslin) Scott, UMColumbia GTA and UMR graduate, and Soraya Gado, UMColumbia. Our department further extends the service through volunteers: ready to help are faculty members Matt Insall and Rob Roe, and GTAs Murat Atmaca, Jonathan Hatch, Sibel Pasali and Brian Raines.

Now it's your turn

Do problems with the pros

Problems have been a central part of mathematics from the beginning. Many journals regularly maintain a problems section, and there exist many mathematical contests. There is a wonderful source of mathematical problems right here at UMR. In 1998 the UMR Mathematics and Statistics Department became the home of the MathPro Online Problems Database, a searchable database which currently includes over 20,000 problems from 38 journals and 21 contests. The person in charge of the site is Mark Bowron, who handles most things remotely. After the initial setup, about the only thing we need to do locally is restart the computer when the power goes out. Mark is currently a web page designer, but before that he drove a semi. Last April on a run from Chicago to Dallas, he stopped in Rolla for part of an afternoon, so I (L.M.H.) have actually met him. It was kind of exciting to call the campus police to request a parking permit for an 18-wheeler! There is a link to the database on the department's home page, or if you want to go directly, the URL is <http://problems.math.umar.edu/home.htm>. Get online and check it out. Be warned, however, that while there are over 20,000 problems, the solutions are not provided. The fun part is all yours.



Comments from the Chair

I'm teaching Math 21 this fall, five days a week at 8:30. Almost half my class are freshmen. One day one of them came up after class and asked, "Is this really the only class you teach?" When I said that was right, he came back with, "Are you a regular employee of the university? What else do you DO?" It was funny, but it was also a legitimate question. From a freshman's point of view, except for teaching, it is not real clear exactly what else a university professor does. They have a good idea of what a high school teacher does, although I don't think time spent in preparation and grading is fully appreciated by most people, students included. But now the kid is in college and his UMR professors teach two or three courses per semester at most, roughly half of the visible workload for a high school teacher. What else DO these people do? One thing is research.

This year, I want to tell you about the recent research activities of the faculty in the department, and also discuss the history of research in mathematics and statistics at MSM/UMR. Except for doctoral students and master's students who write a thesis, most of our graduates, like my freshman, do not get much exposure to research in mathematics and statistics, but research is a necessary and significant part of the duties of a professor at UMR. This was not always true. Until the 1960s the only mathematician at MSM/UMR who had published to any extent was George R. Dean, between 1897 and 1935. As a student in 1930, Aaron J. Miles (later an MSM ME professor and dean) wrote a master's thesis in mathematics under Dean's direction, but both Dean and Miles must be considered as special cases. Faculty in mathematics at MSM were supposed to teach, and there was no research expectation for faculty until the graduate program was established in the 1960s. The first member of the MSM Mathematics Department to hold a doctorate in mathematics was Charles Johnson, who started teaching here in the spring of 1946, and who finished his Ph.D. from the University of Kansas in 1950. Dr. Johnson retired in 1982 and still lives in Rolla. The first mathematics faculty member who had a doctorate when hired was Alvin Owens, who was hired in 1955 and only stayed one year. The next person to be hired with a Ph.D. was Lee Bain, in 1963, although Charles Antle, who was hired in 1957,

got his doctorate in 1962. Beginning in 1963, people hired at the rank of assistant professor or higher had a doctorate and were expected to do research. This emphasis in hiring coincided with the establishment of graduate programs in the department. In 1962, James Joiner received the first M.S. degree (since Miles) after mathematics officially became a graduate as well as an undergraduate department. The first Ph.D. degrees were granted in 1970 to eight people: John Carlson, Robert Dumonceaux, Gerald Haas, Harold Hager, Jim Jamison, Leland Miller, Derald Rothmann, and Darrell Thoman.

"This year, I want to tell you about the recent research activities of the faculty in the department, and also discuss the history of research in mathematics and statistics at MSM/UMR."

Early in their careers, faculty members must establish a good research record as well as a good teaching record in order to achieve their first promotion, to associate professor, and to receive tenure, decisions normally made simultaneously in a person's sixth year. This means they have five years in which to establish that record, and their research should also be sustained for the rest of their careers. The most important part of a good research record is articles published in refereed journals. In the refereeing process, the editors of the journal send out papers, which have been submitted for publication, to be evaluated by one or more people with expertise in the research area of the paper. This is why the refereeing process is sometimes also called peer review. Based on the evaluations of the referee(s), the paper is rejected, accepted, or sent back to the author for revision. So, simply writing a mathematics or statistics paper is no guarantee that it will get published. Another part of a good research record is presentations at conferences. There are many mathematics and statistics meetings and conferences every year. Some are annual events which attract thousands of participants, while others are smaller and more specialized. Participation at meetings is a good way for faculty to publicize their work, and also to find out what others in their area of research are doing. Another advantage of going to professional conferences is public relations for the university and the department. I always remind our faculty to make sure the word "Rolla" is printed along with "University of Missouri" on their conference name badges!

The faculty in the Mathematics and Statistics Department take their research responsibilities seriously. In the two-year period 1997-98, every tenured or tenure-track faculty member in the department except one had at least one paper appear in print or be accepted for publication in a refereed journal. In the calendar year 1998 alone, our faculty had 30 papers appear in print; at least 23 more had been accepted but had not yet appeared, and at least 15 more had been submitted and were still being refereed. In addition, faculty members regularly give talks at professional conferences. Good teaching is still important at UMR, especially in our department because we encounter nearly every student on campus; but, unlike the '40s and '50s, teaching is no longer the only big responsibility of a faculty member.

Mathematicians constitute a world-wide community, and sometimes participation in that community by UMR faculty involves foreign travel. Because we cannot use state funds for travel outside the US and Canada, the Mathematics and Statistics Development Fund is an important source of support when faculty receive invitations to speak at conferences in other countries. It is especially important for our younger faculty to present their work to as wide an audience as possible, and for established faculty to be able to accept invitations received because of the stature they have earned. Normally, the department supports one or two foreign travel requests per year from the development fund. Because this support is spread out among 20 or so faculty members, we are a long way from becoming a department of jet-setters, but this kind of exposure helps promote the department and the accomplishments of the people in it. I am glad that, through your generosity, the development fund is healthy enough to allow part of it to be used for travel.

The bulk of your contributions to the department still goes to support scholarships. The Havener Scholarship Fund, the Eck Scholarship Fund, and the Alumni Scholarship Fund are all endowed scholarship funds which continue to grow, allowing us to provide a little bit better scholarship support to students every year. The Ingram Lecture Series Fund has also reached endowment status, and next year in this space I hope to tell you about the first speaker supported by this fund. Our phonathon will be January 19, 20, 23, and 24 this year. As always, let us know what you have been doing, and remember, you are welcome to visit the department whenever you find yourself in Rolla.

Leon H. Hall

Students, faculty, staff**Special recognition****We're #1**

Mike Hunter, a student we proudly claim by virtue of his math major (with computer science minor), was a member of the triumphant UMR Solar Car Team. Solar Miner II won the US Sunrayce championship in June. In October the team went on to the World Solar Car Challenge in Australia. Hunter and teammates placed 16th in a field of 40 cars, still a notable achievement given that UMR's entry was built with significant restrictions imposed by the US competition rules.

Another winner

We report a headline with a familiar ring: "Mathematics and Statistics student chosen UM-Rolla Homecoming Queen"! Ginger Applebury of Dumas, Ark., a senior in mathematics and statistics, wears the 1999 crown. Ginger, the daughter of Jimmie and Gery Appleberry, was nominated by Chi Omega. In 1997 the same headline introduced Kasie Keeling as Homecoming Queen.

Honorable mention

At this year's Mathematical Modeling Competition, 450 teams from the US and Canada competed. UMR's team of Mike Hunter, John Johnson, and Jeff Sirois received Honorable Mention, placing them in the top 40%. Students tackle a difficult applied problem, usually of the open-ended type, during an extended weekend. Mike Hilgers served as faculty coordinator. Sponsor of the annual competition is the Mathematical Association of America.

Putnam team does well

Thirteen UMR undergraduates participated in the 59th Annual Putnam Mathematical Competition. Official team members were James Atkinson, Michael Hunter, and Christopher Maloney. As individual performers, Atkinson and Maloney placed 641st and 733rd, respectively, out of 2581 competitors. UMR's team ranked 123rd out of 419 teams. Certainly a respectable showing in a very competitive event.

GTA's excel

Brian Raines, an MS candidate in mathematics, received the 1999 Outstanding Graduate Teaching Assistant Award from the UMR Parents Association. Brian holds a bachelor's degree in English and mathematics from Hendrix College, Conway, Ark. He plans to enter teaching at the college level after earning his Ph.D. Tom Ingram describes him as "an exceptional student" who was doing publishable research as an undergraduate. This award (a certificate and check for \$500) is determined by student evaluations. He extends a winning streak as the 11th departmental GTA since 1986 to be thus honored. Congratulations Brian! Past awardees still teaching here are Mary Ellen Kirgan, instructor and placement advisor, Kelley (Mason) Koob, lecturer, Anne Mentz, lecturer, and David Vlieger, GTA.

Seniors tie for top honor

Christopher M. Maloney and G. Andrew VanBrunt each received the departmental award for Outstanding Graduating Senior. Given annually, the award is based on performance and promise in the field of mathematics. With their talents, we expect both of them to keep excelling in the years ahead.

A for advising

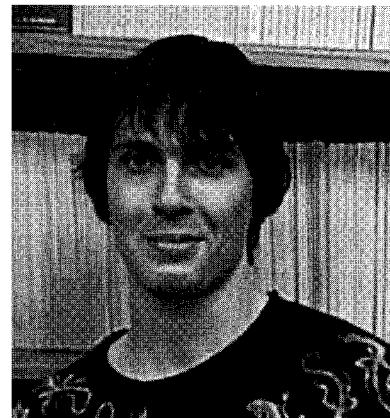
Robert P. Roe, associate professor and director of undergraduate studies, won an Outstanding Advisor Award from the MSM-UMR Alumni Association. Along with three faculty members from other departments, he received a certificate and a check for \$500. Congratulations, Rob!

In the spotlight

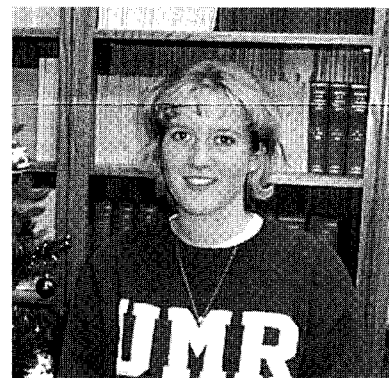
One in a million and a cover girl too! Martha E. Grisham was chosen to brighten the back cover of UMR's faculty/staff newsletter (Feb. 26, 1999) in the employee spotlight. For the past seven years, she has been our administrative assistant. Martha first came to the department as a high-school student in a work-study program 22 years ago. Since then, she has been an invaluable asset to us.

Scholarships

Meet the students who are this year's recipients!



Alumni Scholarship--Sandor Swartz
(also Outstanding First-Year Mathematics Student for 1998-99)

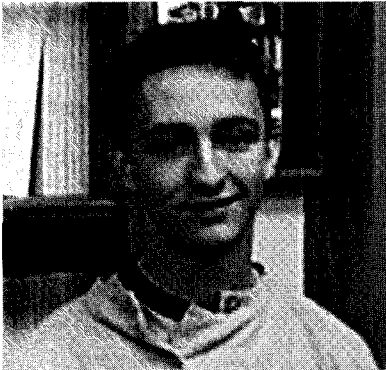


Havener Scholarship--Stephanie Mathis



Havener Scholarship--Carrie Fellers, Ginger Appleberry, David Lee (front row); **Chad White, Steve Alferink** (back row)

Scholarships (cont.)



Eck Scholarship--Banning Bozarth



Eck Scholarship--Jean Meyer



Faculty Scholarship--Laura Roselli,
Todd Wilfling

Our scholarship program is coordinated by Rob Roe (see "A for Advising"). Selection criteria include academic record, math-related student activities, and post-baccalaureate plans. The continued generosity of alumni and friends provides the funding.

LOSSES AND GAINS

Patel retires

Retirement puts Professor Emeritus Jagdish K. Patel in the company of 12 other retired departmental faculty in the Rolla area. Jagdish came to UMR as assistant professor in 1975. After completing his Ph.D. at University of Minnesota, he held assistant professorships at Louisiana State University and Southern Methodist University before joining the UMR faculty. In 1977 he was promoted to associate professor, and in 1982 to full professor. During his career he co-authored *Handbook of Statistical Distributions* (Marcel Dekker Inc., NY, 1976) and *Handbook of the Normal Distributions* (Marcel Dekker Inc., NY, 1996). Nearly 30 refereed publications identify him as author or co-author. He supervised Ph.D. dissertations for three graduate students during his UMR career. Jagdish was a superb teacher as evidenced by three Outstanding Teaching Awards (91-92, 94-95, 95-96). For a number of years he advised students interested in actuarial science. His dedication to students is also reflected in the numerous M.S. and Ph.D. committees, from other departments as well as our own, on which he served. In addition, his service includes participation in a wide range of campus committees. His commitment to and support of the many activities which undergird the department, especially the statistics component, will be sorely missed.

Twosomes

Both Mitchell Watnik and Bernd Straub left Rolla primarily due to Cupid, the meddling little imp. Mitch's fiancée has a good job in Silicon Valley, and they came to the conclusion he would have a better chance of finding a position there than she would here. Bernd, just before he left Australia to come to Rolla, met a young lady and decided the relationship would fare better if they lived on the same continent. We wish Mitch and Bernd the best, personally and professionally.

Change of venue

Michael G. Hilgers, assistant professor, moved to the Computer Science Department where he continues his research in the area of numerical models used in the financial markets.

Staffer departs

Tina Martin, after more than seven years of service to the department, resigned as secretary to take a position as senior secretary in UMR's Cloud & Aerosol Sciences Laboratory (CASL). We'll miss her and the superb job she did.

Four on board

Col. Tom Akers, former commander of UMR's AF ROTC, retired from the Air Force and joined our department as an instructor. Tom started his teaching career here as a GTA during the 1973-74 academic year. Welcome back!

David J. Ryden (UMR Ph.D. '98) returned as visiting assistant professor for the 1999-2000 academic year. David is continuing his research in the area of inverse limits and irreducibility, with two papers in the mill. Welcome back!

Wlodeimierz Charatonik joined the faculty as visiting professor for the 1999-2000 academic year. He hails from Wroclaw University in Poland where he has held a professorship since 1984. His research interests are continuum theory, hyperspaces and curves.

Elizabeth Farrell came to the department as secretary in mid-September. For eight years she was a secretary in civil engineering and, prior to that, a clerk typist for six years in UMR's alumni/development office. We look forward to her participation in the department, and appreciate her contribution to the newsletter.

1998 research wrap-up

M. Atmaca (advisor M. Insall), "Who is Stephen Keene?".

M. Bohner, "Discrete linear Hamiltonian eigenvalue problems", "Asymptotic behavior of discretized Sturm-Liouville eigenvalue problems", "Inequalities and asymptotics for Riccati matrix difference operators" (with O. Disly and W. Kratz), "Discrete Sturmian Theory", "Positivity of block tridiagonal matrices" (with O. Dosly), "Quadratic functionals for second order matrix equations on time scales" (with R.P. Agarwal).

S. Clark, "A Liapunov inequality for Hamiltonian systems" (with D.B. Hinton).

M.J. Dorff, "Some harmonic n -slit mappings".

G. Gan, "MLE are stochastically increasing if likelihoods are unimodal", "Some results for type I censored sampling from geometric distributions" (with L.J. Bain).

D. Grow and M. Insall, "Further properties of an extremal set of uniqueness".

L.M. Hall and R.P. Roe, "An unexpected maximum in a family of rectangles".

T. Hicks, "Fixed point theorems for multivalued mappings II".

V.K. Le, "Some global bifurcation results for elastic plates", "On boundary value problems for degenerate quasilinear elliptic equations and inequalities" (with K. Schmitt), "On some equivalent properties of sub- and supersolutions in second order quasi-linear elliptic equations", "Some global bifurcation problems for variational inequalities associated with the Navier-Stokes equation: Some bifurcation problems" (with K. Schmitt).

I.H. Morgan, "Equiorthogonal frequency hypercubes: preliminary theory", "Construction of complete sets of mutually equiorthogonal frequency hypercubes", "Properties of complete sets of mutually equiorthogonal frequency hypercubes".

J.K. Patel, "Selecting the best of several Weibull populations based on shape parameters" (with J.S. Hill).

K.M. Pilgrim, "Combining rational maps and controlling obstructions" (with T. Lei).

C.V. Stanojevic, ed. (with W.O. Bray), *Analysis of Divergence: Control and Management of Divergent Processes*, "Tauberian theorems for generalized Abelian summability methods" (with I. Canak and V.B. Stanojevic).

B.P. Straub, "On the numerical range map" (with M. Joswig), "On the existence and growth of a mild solution of the abstract Cauchy problems for operators with polynomially bounded resolvent" (with J. van Neerven).

M.R. Watnik, "Pay for Play: Are Baseball Salaries Based on Performance?", "The Behavior of Non-Nested Model Selection Tests under the Alternative Hypothesis" (with W.O. Johnson).

Active Grants, Contracts and Fellowships

M. Bohner, Feodor-Lynen Research Fellowship, Alexander von Humboldt Foundation, Bonn, Germany.

A.J. Goodman, "Asymptotic Properties of Finite Groups and Their Actions", \$17,573, National Science Foundation (NSF) [8/15/96-7/31/99].

M.G. Hilgers, "An Improved Nonlinear Elastic Membrane Model: Regularizing Using Bending Stiffness", \$1,740, NSF [7/1/96-6/30/98], and Quasi Monte Carlo Methods for the Cash Flow Testing Problem", \$26,000, Consec Corp. [5/1/98-present].

E.M. Insall, "Multidisciplinary Research and Modular Courseware Development in Infrastructural Health Monitoring Systems", \$375,000, NSF [8/8/98-8/17/01] (with V.S. Rao, F.Y. Cheng, R.T. Kellogg, S. Keyvan, A. C. Okafor).

V.A. Samarayanake, M.E. Kirgan, T.J. Kirchoff, "Making Sense of Data: Activity Based Quantitative Literacy Workshops", \$31,917, Missouri Coordinating Board for Higher Education [2/1/98-7/30/98].

K.M. Pilgrim, "The Structure of Expanding Rational Maps as Holomorphic Dynamic Systems", \$46,000, NSF [9/1/98-5/31/00].

A.G. Haddock and R.P. Roe, "Curriculum and Instructional Development: Albegra Project", \$125,000 administered through UM Vice President of Academic Affairs.

Ph.D. Dissertations

Katherine Adams, "Weighted Sidon Sets" (dir. D. Grow).

Jeanne Hill, "Some Ranking and Selection Procedures for the Weibull Distribution Based on the Shape Parameter" (dir. J.K. Patel).

David Ryden, "Irreducibility of Inverse Limits of Intervals" (dir. W.T. Ingram).

Ibrahim Canak, "Tauberian Theorems for Generalized Abelian Summability Methods" (dir. C.V. Stanojevic).

Ananda Jayawardhana, Predictive Density Estimation in Life-Testing (dir. V.A. Samarayanake).

M.S. Thesis

Phyllis Singer, "Two-Stage Step-Stress Accelerated Life-Testing Scheme" (dir. V.A. Samarayanake).

Invited presentations

Tom Ingram, special sessions, American Mathematical Society, Denton, Texas, May 1999 (4th Intl. Joint Meeting of AMS and Sociedad Matematica Mexicana); AMS meeting, Austin, Texas, Oct. 1999.

Kevin Pilgrim, "Dessins d'enfants and Hubbard trees", AMS section meetings, Chicago, Sept. 1998; "The dictionary between rational maps and Kleinian groups", Karcher Memorial Colloquium & Seminar, University of Oklahoma, Oct. 1998.

Alumni news

Torino Johnson (M.S.'99) reports "the job has been treating me good." Torino is a process analysis engineer with Commonwealth Aluminum in Lewisport, Ky.

Kelley Renee Mason (M.S.'99) put a wedding in the picture. Married Perry Benjamin Koob on May 15, 1999. Best wishes!

Amanda Jayawardhana (Ph.D. '98) moved from a temporary position to a tenure track assistant professorship at Pittsburg State University. His work there brings credit to him and to us. Congratulations!

Tom Kacvinsky (M.S.'97) has been added to the staff of the American Mathematical Society in Providence, R.I.

Richard C. Ott (M.S.'96) reports being headed toward a Ph.D. at Rice University this past fall. Best wishes!

Kimberley (Nigl) Polly (M.S.'95; continued as a student until '97) was a noted teacher while at UMR, twice receiving the Outstanding Graduate Teaching Assistant Award ('94 and '95). She continues to do what she does best. Kim is an instructor in Mathematics & Computer Science at Parkland College, Champaign, Ill. Besides teaching, she's put an introductory applied statistics course on the web, and serves on a multitude of campus committees.

Yusuf Hartono (M.S.'93) is currently a faculty member in the Department of Teacher Training and Education at Sriwijaya University (South Sumatra, Indonesia). He has received an Indonesian government grant/scholarship to Delft University of Technology for preliminary work in preparation for Ph.D. studies in statistics there.

Linda Saliga (Ph.D.'93) has the distinction of receiving tenure and promotion to associate professor at the University of Akron in Ohio. Congratulations! [Linda, I didn't get tenure as an interim.]

Devon Christensen (B.S.'92) reports moving from the Missouri Hospital Association to the status of consultant with Rose International.

Alumni news (cont.)

Callie Jo (Harmon) Daniels (M.S.'91) is teaching at St. Charles County Community College.

Fred Worth (Ph.D.'91) has been promoted to professor at Henderson State University, Arkadelphia, Ark. Congratulations!

Elizabeth (Haning) Hadler (B.S.'88) was ordained into the clergy of the United Methodist Church, and is associate pastor at White Bear Lake United Church (in Minnesota). Elizabeth and Gary should now be the proud parents of four children, the youngest born in July of this year. Still playing tennis, she claims!{?}

Linda Penas (Ph.D.'98) sends the department a Christmas letter each year. We look forward to hearing about her adventures. Despite the time lag in transmission, rest assured that few moments are dull in her life in California. Besides full-time statistics teaching at UC-Riverside, she teaches mathematics part-time at Riverside Community College. Also, Linda is developing materials for departmental advising via interactive computer presentations and videos. She reports that she is "chairman of student recruitment" (not to mention other activities). We look forward to this year's outcomes report.

Kim Tracy (B.S.'85) continues with the Bell Labs part of Lucent Technologies and is an adjunct professor of computer science at North Central College, all in Naperville, Ill. The success of his book, *Object-oriented Artificial Intelligence*, is reflected in its second printing. His work with Lucent/AT&T includes travels to Europe, Saudi Arabia, South America, and Asia. Kim and Kathleen have a son Robert, and were expecting their second child this past spring. Kim provided the information "even though 1985 is not divisible by 3" (see '98 newsletter request). Since Kim was one of my top student in Advanced Calculus (Fall '83), I'm confident that he does in fact know that 1985 is not divisible by 3! Thanks for the update, and let us know about child number two.

Michael E. Baldwin (B.S.'80) returns to Missouri. Michael spent 16 years in southern California as a systems and network administrator for the federal government. He is now a systems programmer for Southwest Missouri State University in Springfield. Welcome back to Missouri!

Paul Eloë (M.S.'77, Ph.D.'80) came by for a visit as guest speaker at a departmental colloquium March 4. He continues as professor of mathematics at University of Dayton in Ohio.

John J. Jobst (B.S.'77) informs us that he has moved across the river, from St. Louis, Mo., to Columbia, Ill.

Willard Coates (B.S.'74) reports that he got hooked on handball at UMR, playing his first game during the fall of '70. He continues to play each day at noon. Willard and Diane have three children (Eric, 18; Erin, 15; Ellen, 9). He is making retirement plans for the date when Ellen finishes college (2012). Good luck, Willard, and for a little while longer, you can continue to think that your financial involvement in the lives of your children will end when they finish college.

Margaret M. Poepsel (B.S.'74) enjoys teaching 6th, 7th, and 8th grade mathematics at St. Francis Borgia grade school in Washington, Mo. She also teaches part-time for East Central Community College.

Joseph W. Stahl (M.S.'72) continues with the institute for Defense Analysis in Alexandria, Va. He reports a third article published in *Manuscripts*. The article concerns a letter written by Ulysses S. Grant in February 1886.

Paul Harms (Ph.D.'71) and his wife Shirley recently retired, he from Taylor University in Upland, Ill., and she from nursing. Paul reports a son in Pennsylvania, a son in Colorado and a daughter in Arkansas, plus four grandsons. Paul, if you and Shirley want to try centrally-located Rolla as your headquarters, I could give you a good deal on a used deepfreeze (the one I bought from you all in '71; still works great).

Harold A. Glenn (B.S.'66) gives us a corrected address for Corona, Calif. One can also glean from the message a good likelihood that Harold is with the military (navy) stationed in Corona. Thanks for the correction, and if we misread, let us know (we would welcome more detail).

James C. Helm (M.S.'64) keeps us posted from Texas. Jim holds a Ph.D., is a professional engineer, and is an assistant professor of software engineering at University of Houston-Clear Lake.

Henry Pat Duvall (B.S.'62) retired from Boeing in Seattle as manager of certification requirements and airplane safety for Airplane Payloads in April '99. As I read the message, Pat actually took off the month of April to make the transition. Began his career as director of certification with Flight Structures Inc. in Arlington, Wash. Bragging rights: first grandchild, Ally Elizabeth, born Aug. 6, 1998 to son Mike and his wife Tracy. Pat has a daughter Kim (graduate of University of Washington in Seattle) and daughter Kristin who finished high school last year.

Dave Fischer (B.S.'62), via e-mail shared by Jim Joiner, didn't lack for words telling about one of his earlier hirings. The job he wanted was with a company into "micro-wave radio and multiplexing riding the mountain ridges of South America", namely Central Telephone Corp. (HQ in downtown Lincoln). He sets up an interview, goes to Lincoln, enters the building with *Telephone & Telegraph* as a big part of its name. Then asks for the interview; after some confusion, he was interviewed and offered a job (\$8,400 in 1970; not bad). Dave claims it was six months before he discovered that LT&T was not related to Central Telephone! While I tend to doubt this, it does make a good story. Dave returned to Rolla several years ago as part of an alumni/student/faculty event. We invited some alums to give our students and faculty a view of the world off-campus. He says he's retired now; only spends 19 hours a day on those things he enjoys like ham radio, radio astronomy, designing or analyzing antenna configurations, etc. One question, Dave: how is this different from before you were retired?

Contributions

Matching gift companies

AlliedSignal Foundation Inc.
 Amerisure Companies
 Anheuser-Busch Foundation
 Boeing/McDonnell Douglas
 Foundation
 Engelhard Corporation
 Hewlett-Packard Company
 IBM
 Novartis Corporation
 SBC Fopundation
 Sprint Foundation
 USAA (United Services Auto Assoc.)

Gifts

Ackerson, Deborah J. '79
 Akers, Thomas D. '73
 Anderson, David Earl '90
 Anderson, Dennis R. '74
 Andrae, Vicki M. '70
 Anonymous
 Babson, Gail Anne '84
 Baird, Thomas B. '63
 Berendzen, Thomas A. '68
 Borchelt, Elizabeth Jean '89
 Breig, William F. '62
 Brock, Van W. '63
 Brown, Harmon C. '72
 Brown, Willis L. '70
 Bruening, James T. '71
 Buhrmester, Earl K. '72
 Burch, Hal Joseph '97
 Callahan, Susan L. '78
 Capps, Allan B. '72
 Carlson, John W. '70
 Carter, Karen S. '73
 Caton, Kurt D. '72
 Christensen, Devon Lee '92
 Christensen, Grant Allen '92
 Coates, Willard D. '74
 Cross, Gavin Morrison '90
 Davis, Kevin Thomas '86
 Dorrell, Edward W. '68
 Duvall, Henry Pat '62
 Edson, Barbara '64
 Edwards, Shawn David '92
 Eidson, Jimmie R., '65
 Elo, Paul W. '77
 Estes, Larry E. '69

Fitzgerald, Colleen A. '74
 Fitzpatrick, William J. '73
 Fletcher, Glenn Russell '95
 Fogle, David R. '71
 Folta, Peggy Ann '83
 Ford, Raymond F. '70
 Galli, Donald H. '74
 Garver, August J. '64
 Gerlt, Lori J. '89
 Grice, John V. '78
 Guffey, James Michael '85
 Haas, Gerald N. '62
 Haddock, A. Glen
 Hager, Harold W. '70
 Hall, Leon M. '69
 Hamilton, James R. '73
 Hand, Linda Marie '82
 Haney, Larry G. '68
 Hankins, J.C. '76
 Hauschel, Elaine Margaret '92
 Hawkins, Larry O. '73
 Hegemann, Victor J. '74
 Heim, Patricia T. '80
 Helm, James C. '64
 Hess, James L. '73
 Hilgers, Michael G. '85
 Holliday, Robert L. '72
 Huff, Michael Lee '82
 Huffamn, Shirley C. '78
 Ilges, Shannon Rene '91
 Ingram, W. Thomas
 Jamison, James E. '65
 Jenness, Jeffrey Wayne '88
 Johnson, Kenneth G. '69
 Jones, Keith Norman '84
 Jones, Leon R. '69
 Jones, Rana Elaine '87
 Keeton, Robert T. '74
 Kieffer, John C. '67
 Killinger, J. Curtis '73
 King, Sherry Lee '95
 Kirgan, Mary Ellen '93
 Kline, Bradford J. '88
 Kubicek, John D. '75
 Lane, William L. '73
 Lee, Chin-Ming '70
 Leitertman, Pamela A. '75
 Luckerman, Julie Lynn '89
 Mann, Gary L. '68
 Maupin, Marcel A. '78
 Mausshardt, Denise Ann '83

McKee, Rhonda Louise '84
 Neill, James W. '73
 Oakes, Janet R. '75
 Oster, Teri Lynn '84
 Ott, Richard Charles '96
 Pamperien, Neil C. '64
 Parsons, Kenneth C. '74
 Penas, Linda Marie '85
 Petty, Lisa Jane '86
 Poepsel, Margaret M. '74
 Porter, David Bryan '88
 Prater, John B. '70
 Pryor, Robert E. '66
 Record, Ralph T. '64
 Reed, John K. '80
 Reiman, Paul Whitney '83
 Reiter, Nancy Lillian '82
 Richards, James L. '72
 Riggs, Donna B. '94
 Roe, Robert P.
 Rooks, Joseph L. '73
 Saliga, Linda Marie '89
 Sallas, William M. '75
 Schirer, Ivan J. '70
 Sherrick, Sherman W. '68
 Shiue, Wei-Kei '82
 Stahl, Joseph W. '69
 Stair, George W. '62
 Stansfield, John Joseph '85
 Stein, Eric M. '72
 Stokes, Brenda Kay '87
 Tanzey, William H. '74
 Tarr, Harold W. '70
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 Trnka, Mary L. '75
 Wagener, Marian R. '71
 Wagner, James Carl '94
 Wagner, Michael D. '67
 Walden, Kendall H. '67
 Walker, Lois J. '76
 Watnik, Mitchell R.
 Wells, Curtis L. '70
 Wist, Patricia S. '74
 Wolff, Alan M. '71
 Woods, Glen D. '64
 Worth, Fredrick E. '87
 Yount, Eric Odel '98

First mathematician (what might have been)

One could imagine that years ago (perhaps 60,000 or more) a group of youngsters was playing on a hill. When they looked to the north, they saw four gazelles grazing. When they looked to the south, they saw four lions. One of their number might have pointed to the north and then to the south, and spoke the word meaning ‘same’. You can almost hear the shouts of laughter from the others as they thought “how silly to say gazelles are the same as lions”. Yet the one who recognized the sameness of these two sets might have bent to the ground and picked up four pebbles. When they returned to camp, this first mathematician could have gone to the tribal elders, holding out four pebbles in one hand, pointing north with the other hand, and spoke their word for ‘gazelle’; then, for emphasis, picked up the pebbles separately -- each time holding a pebble aloft in one hand, pointing north with the other -- and repeated the word for gazelle: ‘gazelle, gazelle, gazelle, gazelle’. There is little doubt, even 60,000 years ago, about the message being understood. When the first mathematician again displayed the four pebbles in one hand and pointed south with the other, speaking the word for ‘lion’, the meaning would have been clear.

(Alfred North Whitehead in his Lowell lectures of 1925 stated that the first person to notice the sameness between finite sets, whose elements can be matched, made a notable advance in the history of thought. He went on to say, ‘this was the first person who entertained a concept belonging to the science of pure mathematics’ [*Science and the Modern World*, New York: Macmillan Co., 1925].)

Let us hear from you

(especially if your last year plus 1 with UMR was ≤ 1962 or > 1962 and divisible by 3)

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Name _____ Years attending UMR _____

Current activities/interests _____

Family _____

News/plans _____
