

THE PROOF

Mathematics & Statistics Department

December 1998



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THE PROOF

University of Missouri-Rolla

URL: www.umar.edu/~mathstat
e-mail: mathstat@umar.edu

**Reminder:
Phonathon will be held
January 25-28, 1999.**

Editor's Comments

Once again it is my privilege to serve as the Editor of the Mathematics & Statistics Department Newsletter. Among the benefits of this activity is the opportunity to review the news received from our Alumni through the year. As an Alum from two institutions myself, I find myself looking for names from my times at those institutions, especially those with degrees in Mathematics or Statistics. I usually find a few, frequently not the ones I would most want to know about. The Department Newsletter is a place where the 'family' of our students can keep in touch with one another. You can help us accomplish this objective. Take time to drop us a note to bring us up-to-date on your life. We want to hear from you, at any time, when something exciting and significant occurs in your experiences. We would specifically ask those whose last year with UMR occurred in a year divisible by three (3) or whose last year was prior to 1962, please tear out complete and return the form near the

end of the Newsletter or send us the information via e-mail. The address is mathstat@umar.edu. This will enable us to get up-to-date on everyone within a three year period and will not overload the system. We would also invite you to visit the department web page at www.umar.edu/~mathstat/. At the present time, of the thirteen retired long time mathematics and statistics faculty (all the known living emeritus faculty from the department), all reside in the Rolla area except for Professor Luffel. For your information the list follows: LEE BAIN, AUGUST GARVER, GLEN HADDOCK, TROY HICKS, CHARLES JOHNSON, JAMES JOINER, GEORGE LUFFEL (moved to Georgia), SYLVESTER PAGANO, ANTHONY PENICO, LYLE PURSELL, JACK SCRIVNER, ČASLAV V. STANOJEVIĆ, and SELDEN TRIMBLE. Professor STANOJEVIĆ is the newest member of this group and a summary of his career at UMR is located elsewhere in this Newsletter.

Mathematics is especially good at providing opportunities for that moment of seeing clearly. No doubt, this was the case with Bhaskara who beheld one of the 240+ proofs of the Pythagorean Theorem. You might enjoy the opportunity to think about his insight for yourself. See the drawing located on page 8.

GLEN HADDOCK, Editor

Alumni News

THOMAS B. BAIRD — It is good to hear from Tom, an Alum who lives in Rolla. Tom spent the latter part of his career as a professor in the Computer Science Department at UMR, and still remembers fondly his relationships with the Mathematics & Statistics Department.

H. CLIFF BOWMAN & MORAG S. FULTON — Married May 21, 1998 (thanks to matchmaker Tina), and reside in Van Nuys, California. Cliff is pursuing his graduate studies at UCLA and serving as a teaching assistant. Morag is a bank teller at Washington Mutual, and spends 10-15 hours per week working with 6th through 12th graders who are struggling with their mathematics. "She has in less than two months, become the primary math instructor at the Encino site, and has been rewarded for her teaching skills with a raise." They have found LA to have the negatives which were expected, but has also many positives which they are enjoying. It sounds like the sum is positive for Morag and Cliff.

RICHARD ALLEN BOX — Moved but not very far, from Woodlands, Texas to Katy, Texas.

DEVON CHRISTENSEN — Switching from Health Data Analysis to Programmer Analyst at the Missouri Hospital Association in Jefferson City.

<dchristensen@mail.mhanet.com>

CURT KILLINGER — We appreciated a Christmas card from Curt and his family in Houston, Texas.

CHRIS LEWIS — A note, now old, indicated a daughter was born Jan. 17, 1998, and her name is Abigail Elizabeth. They were expecting a move to Kansas City, and by now Abigail is nearly one year old. Congratulations!

<CHRISL@Amdocs.com>

PEGGY SCHACKLES LORGE — Completed 11 years of teaching math and science and writing grants at Pyramid Lake High School then "took the plunge". Peggy is now a graduate assistant at the University of Nevada-Reno, and will receive her masters' degree in Educational Leadership, May 1999.

SUZANNE LYNCH — Completed her first year at Cornell, "I loved my first year, though the course is really tough and ridiculously busy". Real Analysis and Algebra in the fall and Complex Analysis and Algebraic Topology in the spring. "I took all these first-year graduate courses, so UMR can be pleased that the courses I took here did prepare me enough for grad school so far." Real Analysis was taught by a probabilist with a theorem named for him (Dynkin). Suzanne made a pitch for UMR to offer a course in Algebraic Topology, the text used was written by Allen Hatcher at Cornell and is on his web page. She indicates that she is very pleased that KEVIN PILGRIM (who was completing three years as a post-doc at Cornell) is coming to UMR. By now Suzanne will be back from a 10 day session on complex dynamics in Barcelona.

<slynch@math.cornell.edu>

MARCEL A. MAUPIN — Teaching at Oklahoma State University-Oklahoma City, Marcel received the Regent's Distinguished Teaching Award in April, 1998. Congratulations!!

DENISE ANN MAUSSHARDT (Math '83) — Now has three children, the third child is Christopher Charles. She continues as a "homemaker and mommy". Still looking forward to returning at least to part-time teaching in the future.

LESLIE and KARLA McADOO — Leslie is enjoying his work at NSA, and encourages other UMR folks to check it out at (<http://www.nsa.gov>). Karla keeps busy at home with Leslie III who must now be a little past 4.25 and Kayla who must now be at about 1.42. Leslie III shows impressive capacity for memory, a good attribute for a potential mathematician. One would gather the McAdoos don't seem to care very much for the traffic around Laurel, Maryland, but may be enjoying the shopping opportunities.

<kilkmcadoo@juno.com>

LINDA PENAS — A 1997 Christmas card and letter from Linda, Ed, and a 65 lb. two year old Labrador named Dusty Dog provides the latest information. Linda continues to experience difficulty finding enough work to keep her busy. For example she reports; "teaching Statistics full time the University of California-Riverside", "teaching Math part-time at Riverside Community College", "setting up another department computer lab", "developing on-line interactive tutorials for some of their courses", "assist in student recruiting for both institutions", "becoming a judge for the National Undergraduate Data Analysis Contest". Linda we might be able to find a project or two for you, if you wish.

JOSEPH W. STAHL — Continues with the Institute for Defense Analysis in Alexandria, Virginia. He was pleased to report that in the spring of 97, "had an article on part of my manuscripts collection published in 'Vol XLIX - Number 2' of 'Manuscripts' titled Union Generals in Virginia".

DAVID TAYLOR — In March of this year, David left Texas Instruments in Dallas to join Motorola in Fort Worth. He now lives in Haltom City, Texas.

<Dntaylor33@aol.com>

ADAM and SHELLY WINEINGER — Now in Overland Park, Kansas. Shelly is employed by Sericol (a manufacturer of screen printing inks), and Adam is doing his residency in family practice at Trinity Lutheran Hospital in Kansas City (his first choice).

<swineing@sericol.com>

Faculty Activities and Accomplishments

Professor STEVE CLARK presented a paper "Discrete Liapunov Inequalities" at the Special Session on Spectral Theory and Differential Equations at the 936th meeting of the American Mathematical Society. The meeting was held in October 98 at Wake Forest University. This paper will appear in the Journal of Dynamic Systems and Applications. Two other papers co-authored by Dr. Clark have been accepted for publications, and two have been submitted. Steve spent the spring semester of 98 as a visitor at the

University of Missouri-Columbia Mathematics Department as a part of the UM faculty exchange program, and was a visitor at the University of Tennessee Mathematics Department during the period June 16-30, 1998.

Professor **MICHAEL DORFF** supervised the research of undergraduate mathematics student Brande Tucker this summer. Brande investigated the use of affine transformations in generating fractal images. Michael has received a grant from the University of Missouri Research Board to support his cooperative research effort with a colleague at the University of Michigan. His paper "Harmonic mappings onto asymmetric vertical strips" has been accepted for publication in the refereed Proceedings for the Computational Methods and Function Theory '97 Conference.

Professor **ALBERT GOODMAN** presented by invitation a colloquium talk at Indiana State University in April this past year.

Professor Emeritus **TROY HICKS** while 'retiring in May' finished the year with three papers appearing in print, and two additional papers accepted for publication. In addition this semester he is giving three invited talks at other universities.

Professor **MICHAEL HILGERS** had a number of research papers appearing this past year. He thinks his most note-worthy accomplishment is receiving an Outstanding Teaching Award. Among the student evaluators were 90 students from his Calculus I class. Michael is among the few mathematicians receiving financial support for their research from the private sector. This past summer he consulted with Conseco in Carmel, IN, and is continuing this fall. They are supporting his research in developing

numerical software to accelerate financial stochastic simulations.

Professor **TOM INGRAM** remained very active in research circles in his graduation year from the Chair. He presented a paper at the joint meeting of the American Mathematical Society and Sociedad Matematica Mexicana in Oaxaca, Mexico. Tom spent two weeks in Mexico City this past January, where he gave a series of lectures on Inverse Limits. In June he gave an invited lecture at the Summer Topology Conference, held this year in Mexico City. This fall while on leave he has given seminar talks at Montana State University (where he was collaborating with Professor Marcy Barge), Auburn University, and Emory University. In addition he presented an invited address on 'Inverse Limits' to the 29th Annual Lloyd Roeling/USL Mathematics Conference held at the University of Southwestern Louisiana, Lafayette, LA.

Professor **MATT INSALL** participated in a joint proposal with faculty from Electrical Engineering, Civil Engineering, Psychology, Mechanical Engineering and Nuclear Engineering in the NSF Combined Research and Curriculum Development program. This proposal was funded, renewable for up to three years, in the amount of \$375,000. The title of the proposal is "Multidisciplinary Research and Modular Courseware Development in Infrastructural Health Monitoring Systems".

Professor **ILENE MORGAN** was the proud recipient of a UMR Outstanding Teaching Award for 1997-98 (her second in two years). She has been funded (by the Office of Naval Research and the National Science Foundation) to present her research in a workshop sponsored by the Association of Women in Mathematics. Eight recent Ph.D.s and fourteen graduate students have been selected to receive funding. The workshop will occur in conjunction with the Joint Mathematics Meetings in San Antonio (Jan. 99).

Professor **V. A. 'SAM' SAMARANAYAKE** along with three other UMR faculty received recognition from the MSM-UMR Alumni Association for their contributions to

the campus through advising. The Outstanding Advisor Award is used to honor advisors for their efforts in assisting students with academic and career decisions.

Comments From the Chair

As my first semester as department chair comes to a close, I can begin to appreciate a comment I heard from an experienced chair at another school, who said, "Being chair is really just a half-time job, but that means every other minute." No doubt some of you have positions for which this statement is equally applicable. Seriously, though, the things I said last year about expecting a good working relationship with the dean and, most important, the faculty, staff, and students in the department, are proving to be true. Another relationship that I hope to cultivate further is with you, the alumni. I received several nice notes from some of you following the announcement in last year's newsletter that I was becoming chair, and have enjoyed meeting and visiting with those of you who have stopped by the department in the past year. It is always great to hear from you, especially in person.

In some of my odd minutes this fall, I have been learning more about the history of our department, and especially the faculty in the department over the years. The late Professor **DICK ERKILETIAN's** excellent articles in the 1990-93 newsletters whetted my appetite for more, and I wish I had spent more time talking with him about what things were like at MSM, especially in the 40s and 50s. Also, before he retired, Professor **SELDEN TRIMBLE** put together a list of the comings and goings of tenure-track faculty in the department beginning in 1971, the year he came to UMR, and **MARTHA GRISHAM** has kept this list up-to-date. My goal was to extend Selden's list all the way back to the beginning of the school. **Clair V. Mann's** huge *History of Missouri School of Mines and Metallurgy* was quite helpful, as it was to Professor **Erkiletian** earlier, for finding names up to 1941. I was also helped considerably by UMR Archivist and History Professor **Larry**

Gragg, who let me use a number of files from the campus archives. The latest version of the faculty list is on the web,

<http://www.umr.edu/~lmhall/personnel.html>.

If any of you can fill in missing information or correct wrong information please let me know. Especially welcome are stories or remarks about individual faculty that you remember. I limited the list to include only full-time faculty. Sometimes this distinction was unclear. For example, in the 60s, when the department's graduate program was getting started, some people were here initially as instructors and then became graduate students, and several were among the department's first Ph.D. recipients. So if your most memorable mathematics or statistics teacher is not on the list, it might be because that person was never full-time. Someone I would personally like to know more about is Gary M. Scranton, who was an Instructor here from 1963-66. He had to put up with me in both Math 21 and 22, and based on my performances in those classes, he would be quite surprised that I became a mathematician. When I was 18, there were lots of things I found more interesting than calculus at 2:30 in the afternoon! Mathematics has a way of growing on you, though.

Your continuing donations to the department are greatly appreciated. The establishment of permanent endowments for the department was one of TOM INGRAM's most significant accomplishments as chair, and is something I will continue to support. His personal support of the department now includes the establishment of the Ingram Lecture Series, a fund which, when it reaches endowment status in a few years, will allow the department to annually invite a speaker to come to campus and address the faculty and students on a topic of

mathematical interest. This will be a welcome addition to our programs. The Alumni Endowed Scholarship Fund now stands at about \$40,000, thanks to your contributions, and, thanks to an additional gift from Mr. Havener, the principal in the Gary Havener Scholarship Fund is approaching \$100,000. Our phonathon is scheduled for January 25-28, 1999, and, again this year, some of the callers will be members of our student chapter of the Mathematical Association of America.

Thanks are again due to GLEN HADDOCK, for serving as editor of this newsletter for a second year, and to MARTHA GRISHAM and TINA MARTIN for their usual excellent job of handling the details of getting the newsletter out. The name of the newsletter, new this year, can be interpreted in more than one way. Of course, proof is one of the foundations of mathematics and is the basis for the certainty of mathematical truths. But also, from the department's point-of-view, the most important proof of the quality of our programs is you, our graduates. Conversely, the newsletter is part of our proof to you that we appreciate your continued involvement in the department throughout your lives.

LEON M. HALL

New Faculty Members

MARTIN BOHNER joined the UMR Mathematics & Statistics this fall as an Assistant Professor. He holds a Bachelor in "Wirtschaftsmathematik" from Ulm University (89), a Master of Science in Applied Mathematics from San Diego State University (92), a "D i p l o m a" in "Wirtschaftsmathematik" from Ulm University (93), and a Ph.D. in Natural Sciences from Ulm University (95).

From 95 to 97 he served as an Assistant Professor at Hohenheim University. In 96 he was awarded a Feodor-Lynen Fellowship of the Alexander von Humboldt-Foundation. During 97-98, he spent the first part of the fellowship at the National University of Singapore, and the second part at San Diego State University.

He is currently editing (jointly with R. Agarwal) a special issue of the journal "Dynamic Systems and Applications" entitled "Discrete and Continuous Hamiltonian Systems".

KEVIN PILGRIM also joins the faculty as an Assistant Professor. Accompanying Kevin to Rolla is his wife Jane, their son Sam, and a new daughter Mary (born July, 98). He was born and raised in Evanston, Illinois and holds a Bachelors of Science in Mathematics from Indiana University - Bloomington, and the Ph. D. in Mathematics from the University of California, Berkeley (94). Following his Ph. D. he spent a year at the Mathematical Sciences Research Institute as a postdoctoral fellow. From 95 to 98 he served as H. C. Wang Postdoctoral Assistant Professor at Cornell University. His research area is in the applications of complex analysis to dynamical systems.

BERND STRAUB has recently arrived in Rolla, as an Assistant Professor. He holds a 'Diploma' in Mathematics with a minor Physics from the University of Tuebingen (90), a Master of Science degree from Louisiana State University (92), and the Ph. D. from the University of Tuebingen (94). Bernd served as a TA at the University of Tuebingen (88-90), as a GTA at the Louisiana State University (90-93), and as a Research assistant/Administrative assistant at the University of Tuebingen (93-95). He served as a Research associate at the University of New South Wales, Sydney, Australia (95-97), and as a Research scholar and instructor at Louisiana State University (98) prior to coming to Rolla. His research interest is mainly in Weyl functional calculus for possibly noncommuting systems of operators. The Weyl calculus determines the solution of certain symmetric hyperbolic systems of differential equations which occur, for example, in acoustics, crystal optics and magnetohydrodynamics.

Professor C. V. Stanojevic Retires

Professor CASLAV V. STANOJEVIĆ, whose mathematical career spans a half-century, has chosen to officially

retire. However, he will continue, on a part-time basis, to serve as advisor and thesis director for three Ph. D. candidates. He graduated from Belgrade High School in 1948. In 1952 he received the Diploma in Mathematical Sciences, with Diploma Thesis from the Department of Mathematics of the University of Belgrade. By this time he had already received three awards for work in mathematics. For his 1951 monograph *Classical Methods and Results in Fourier Analysis*, he received first prize from the University of Belgrade. In 1952, he received first prize for his paper *Generalizations of Kolmogorov Inequality*, and second prize for his paper *Mathematical and Logical Foundations of Probability Theory*. While serving as a Lecturer in the State Institute for Statistics in Belgrade, and as an Assistant in Mathematics at the University of Belgrade, he continued his mathematical studies under the direction of M. Frechet, and D. Markovic. His Doctorate in Mathematical Sciences was awarded by the University of Belgrade in 1955. Until 1961 he maintained a relationship with the University of Belgrade as Assistant Professor, and Associate Professor of Mathematics. In 1962, he joined the Mathematics Department of the University of Detroit as an Associate Professor, moving to the rank of Full Professor in 1966. From 1968 to 1998 he served as Professor of Mathematics at the University of Missouri-Rolla, and continues as Professor Emeritus.

His research has spanned a broad spectrum of mathematics, and includes probability theory, analysis, and functional analysis. He has been active and provided significant leadership to the International Workshop in Analysis and Applications, serving as Chair from 1985, and Co-editor of

the Proceedings in 1989. Professor Stanojevic has served as a reviewer for the *Mathematical Reviews* and *Zentralblatt fur Mathematik*. He referees for a number of Journals including the Proceedings and the Transactions of the American Mathematical Society. He has been a member of the Mathematical Institute of the Serbian Academy of Science since 1954 and the American Mathematical Society since 1962. Included in the list of Universities at which he has delivered invited addresses or served as Visiting Professor is, the University of Copenhagen, the University of Athens, the University of Heidelberg, Ohio State University, and Louisiana State University of New Orleans. His list of research collaborators is exceedingly large and ranges from distinguished mathematicians to his own students, who in their own right under Professor Stanojevic's tutelage, have distinguished themselves.

Professor Stanojevic has provided leadership to this department through involvement in numerous departmental committees. His commitment to teaching is widely recognized, and his success in leading students to both understanding and appreciation of mathematics is greatly admired. We look forward to his continued contributions to the mathematics community and to this department.

Virtual Office

The Mathematics & Statistics Department is participating in a UM (four campus) project to test the use of technology in expanding 'office access' to students. Your Newsletter editor is coordinating the project. This is viewed as a pilot project and was funded from the Office of Steve Lehmkuhle the vice-president for Academic Affairs. The boundary conditions applied to proposals for these funds were; the project must be of significant interest to each campus of UM and the project must make use of technology to enhance the student experience. With the concurrence of the representatives of the Mathematics Departments on each campus, the focus was to be on College Algebra and aimed at providing interactive

help to students in a timely fashion. Literally translated, this meant the student should be able to get help when needed.

We now have in place the capability of providing to the student a tutor who can examine the work of the student, make suggestions for progressing in much the same way as if the student were in your office. This means interactive voice communication, both student and tutor can share the same scratch pad, and the student can scan in their own work for analysis/corrections/suggestions. All of this is available through a combination of hardware including a scanner and software which supports voice, whiteboard, and chat simultaneously. Many students have this capability in their personal computers, several computers in our learning centers are appropriately equipped for the students to participate in the project. At this time students in selected sections of college algebra on the campuses can from 5:00 PM to 10:00 PM on Monday, Tuesday and Wednesday evening communicate directly with a tutor. The tutor may be associated with any campus (located on campus or at home), and the student may be from any campus (located on campus or at home). In addition a web page is being constructed providing access to the tutor as well as options such as a bulletin board for posting questions at off hours, additional information on the basic topics in algebra, and challenge problems. This extends the old fashioned telephone consultation in an important way, that is, both parties can view and write on the same whiteboard. By the next newsletter we should be able to report on the student reception to this service and perhaps its effectiveness.

Board of Visitors for the College of Arts & Sciences

Dean RUSSELL BUHITE has recently announced the members of the College of Arts and Sciences Board of Visitors. The Board held its first meeting Nov. 13-14, 1998. Of particular interest to the Mathematics & Statistics Department is that the eleven member board contains three

of our Alumni, Colonel TOM AKERS, Mr. GARY HAVENER, and Dr. JOAN WOODARD.

A Big Slice of Pi

Some people find it tough to memorize telephone numbers. For Adam Nolte of Godfrey, IL, it's as easy as pie.

Um, better make that "Pi". Nolte invents phone number to help him remember the digits of Pi—all the way to 215 decimal places. The UMR sophomore's prestidigitation with digits made him the winner of a Pi memorization contest held on campus last spring as part of Mathematics Awareness Week. The contest was sponsored by UMR's student chapter of the Mathematical Association of America.

To win the Pi repeating contest, Nolte wrote from memory the first 215 digits of the world's most famous irrational number. For his efforts, he won—what else?—a pie from A Slice of Pie, a local pie shop.

Pi, as all MSM-UMR grads know, is the ratio of the circumference of a circle to its diameter. Although $\text{Pi} \approx 3.14$ is used in mathematics classes, it is only an approximation to Pi's true value. In 1767, Johann Lambert showed that Pi is an irrational number—that is, its decimal expansion never ends and never repeats itself. Modern computers have calculated decimal expansions for Pi out to millions of places, but few humans can recall many of the digits beyond 3.14.

Various attempts have been made to develop mnemonic devices to help people remember the digits of Pi. Some remember sentences where each word has the same number of letters as the corresponding digit of Pi. One commonly used sentence is "How I want a drink, alcoholic

of course, after the heavy lectures involving quantum mechanics".

But Nolte's phone-number mnemonic seemed to do the trick. "I try to memorize as many digits of Pi as possible as a mental exercise," he says. "Much of the expansion I remember by stringing together appropriate phone numbers.

Article taken from Fall 1998
MSM-UMR Alumnus

Mathematical Competitions

Traditionally the Mathematics and Statistics Department fields teams in the Mathematical Modeling Competition. This is an international competition and calls for a team (three person) to address a problem in a prescribed period of time (essentially three days). This past year 472 teams participated from around the world. The problems are open ended and require considerable research and creativity to provide a reasonable model. The analysis performed by the team, and the 'quality' of the mathematical model submitted by the team is evaluated. Those judged to be in the top 1% of the solutions are deemed to be **Outstanding**. Those judged to be in the next 16% are identified as **Meritorious**. Our team of Michael Hunter, John Johnson, and Jeffrey R. Sirois placed in this category. Those judged to be in the next 26% receive the recognition of **Honorable Mention**. Our team of James Atkinson, Scott Pope, and John Seiffertt placed in this category. The problems are always very challenging, and the competition very tough. Therefore, we can be very proud of the performance of our two teams. (MIKE HILGERS of our faculty served as the UMR Coordinator for this competition).

The annual Putnam Competition is the longest standing competition in mathematics in this country. It consists of a test containing several challenging problems from a broad spectrum of mathematics. An institution can enroll one or more students in the day long examination. Each student's performance is measured, and if a school has three or more students participating, the top

three are judged to be a team and their combined score is compared with other schools with team participation. UMR entered three students this past year, each ranked in the top half of the 2,510 students who participated. James Atkinson of UMR ranked in the top 19%, John Seiffertt ranked in the top 25%, and Andrew Van Brunt ranked in the top 50%. As a team UMR ranked 85th out of the 313 institutions which competed. Certainly a honorable performance considering the competition includes the best in the nation. (David Grow of our faculty served as the UMR Coordinator for this competition).

1998 Department Scholarship Awards

The continuing generosity of alumni and friends has enabled a growing source of funds for scholarship support. Scholarships awarded by the department this fall are listed below. These recipients were chosen not only for their strong academic records but also for their interest and involvement in the various programs of the department.

Laura Roselli was chosen to receive a \$750.00 scholarship funded by the Mr. & Mrs. Robert Eck Endowment Fund. Laura was also named by the Mathematics and Statistics Department as the Outstanding First-Year Mathematics Student for 1997-98.

Two students were awarded scholarships funded through the Alumni Endowment Fund. They are Chris Maloney who received \$750.00 and Steven Alferink who received \$500.00.

There were six students chosen to receive \$500.00 scholarships funded by the Gary Havener Endowment Fund. They are Andrew VanBrunt, Michael Hunter, Jason Hoffman, Jean Meyer, Brande Tucker, and David Lee.

Dr. ROBERT ROE, who coordinates the scholarship activities, along with the faculty and students in the department express appreciation to all who have contributed to the department's endowment fund. Thank You!

Contributions

Matching Gift Companies

Allied Signal Foundation Inc.
 Amerisure Companies
 ALCOA Foundation
 Corning Incorporated Foundation
 Engelhard Corporation
 Hewlett-Packard Company
 IBM
 NCR Foundation
 SBC Foundation
 Texaco
 United Services Auto Association

Gifts

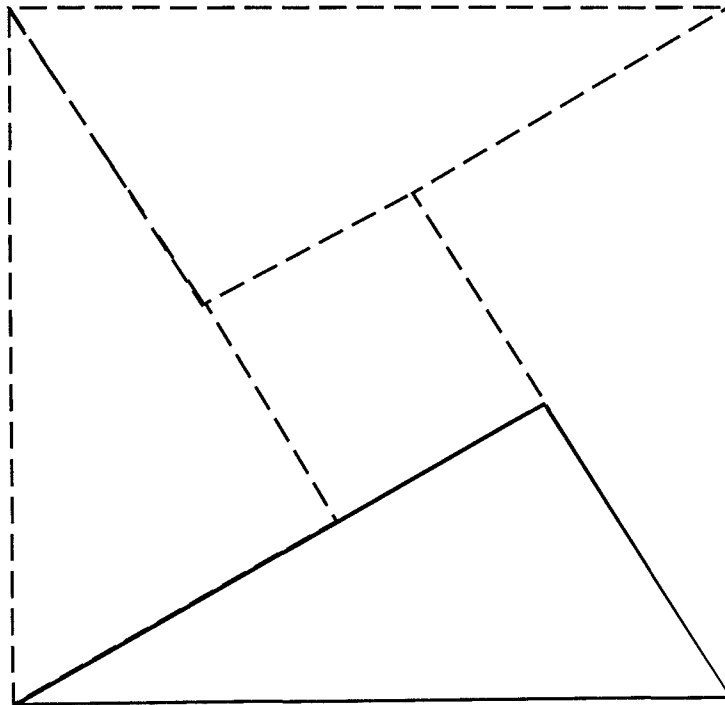
Deborah J. Ackerson '79
 Thomas D. Akers '73
 Dennis R. Anderson '74
 John Anthony Armon '87
 Thomas B. Baird '63
 Lawrence A. Boberschmidt '65
 Elizabeth Jean Borchelt '89
 Linda L. Brady '70
 William F. Breig '62
 Gary C. Bremer '69
 Van W. Brock '63
 Harmon C. Brown '72
 Willis L. Brown '70
 James T. Bruening '71
 Susan L. Callahan '78
 Allan B. Capps '72
 John W. Carlson '70
 Karen S. Carter '73
 Devon Lee Christensen '92
 Grant Allen Christensen '92
 Joseph Shawn Crawford '96
 Gavin Morrison Cross '90
 Callie Jo Daniels '91
 Kevin Thomas Davis '86
 Sally Andrea Diggins '85
 Henry Pat Duvall '62
 Barbara Edson '64
 Jimmie R. Eidson '65
 Paul W. Eloee '77
 Larry E. Estes '69
 Colleen A. Fitzgerald '74
 William J. Fitzpatrick '73
 David R. Fogle '71
 Peggy Ann Folta '83
 Raymond F. Ford '70
 Donald H. Galli '74
 August J. Garver '64
 Janet L. Gentry '71
 Lori J. Gerlt '89
 John V. Grice '78
 James Michael Guffey '85
 A. Glen Haddock
 Harold W. Hager '70
 Leon M. Hall '69, '71, '74
 Larry G. Haney '68

J. C. Hankins '76
 Mrs. Charles (Muriel) Hatfield
 Elaine Margaret Hauschel '92
 Gary W. Havener '62
 Larry O. Hawkins '73
 Victor J. Hegemann '74
 Patricia T. Heim '80
 James L. Hess '73
 Michael G. Hilgers '85
 Herbert S. Holland '70
 Michael Lee Huff '82
 Shirley C. Huffman '78
 William Thomas Ingram
 Jeffrey Wayne Jenness '88
 Kenneth G. Johnson '69
 Leon R. Jones '69
 Rana Elaine Jones '87
 Robert T. Keeton '74
 John C. Kieffer '67
 J. Curtis Killinger '73
 Sherry Lee King '95
 Brenda S. Klinkerman '71
 Rebecca Kathleen Kreisel '95
 John D. Kubicek '75
 Dietrich W. Kuhlmann '85
 Robert J. Lacey '86
 William L. Lane '73
 Chin-Ming Lee '70
 Pamela A. Leitterman '75
 Stanley Benson Lindesmith '90
 Peggy S. Lorge '73
 James A. Madison '68
 Marcel A. Maupin '78
 Denise Ann Mausshardt '83
 Rhonda Louise McKee '84
 Denise Hope Moore '86
 Janet R. Oakes '75
 Teri Lynn Oster '84
 Neil C. Pamperien '64
 Kenneth C. Parsons '74
 Linda Marie Penas '85
 Lisa Jane Petty '86
 Margaret M. Poepsel '74
 David Bryan Porter '88
 Ralph T. Record '64
 Paul Whitney Reiman '83
 Nancy Lillian Reiter '82
 Donald K. Rice '69
 James L. Richards '72
 Donna B. Riggs '94
 John R. Riggs '67
 Robert P. Roe
 Linda Marie Saliga '89
 Ivan J. Schirer '70
 Robert P. Sexton '77
 Sherman W. Sherrick '68
 Marc M. Solomon '68
 Ray D. Sparks '68
 Joseph W. Stahl '69
 George W. Stair '62
 John Joseph Stansfield '85
 Brenda Kay Stokes '87
 Harold W. Tarr '70

Nancy L. Taylor '77
 Dolores M. Tichenor '76
 Marian R. Wagener '71
 James Carl Wagner '94
 Michael D. Wagner '67
 Kendall H. Walden '67
 Lois J. Walker '76
 Curtis L. Wells '70
 Adam Lee Wineinger '92
 Shelly Ann Wineinger '91
 Patricia S. Wist '74
 John J. Zenor '63

Behold

(Bhaskara ~1150 AD)



Let Us Hear From You

(Especially, if your last year with UMR was ≤ 1962 or > 1962 and divisible by 3.)

Mail to:
Mathematics & Statistics Department
University of Missouri-Rolla
Rolla, MO 65409-0020

Fax to (573) 341-4741
or
e-mail your variation to
<mathstat@umr.edu>

Name: _____ Years at UMR _____

Current activities/interests: _____

Family: _____

Future plans: _____

What Will You Leave Behind?

Footprints

Everyone leaves footprints. Our prints are made by the impression of our lives on the sands of time. A person is remembered for the weight of his or her character. When we leave positive impressions behind, we enhance the lives of our friends and loved ones. We give them footprints to follow. Thoughtful estate planning is one means we have to make a print in the sand. For example, consider the effect of a plan that not only includes provision for family members, but also resources for charitable organizations like the University of Missouri-Rolla.

An Estate Gift Makes a Positive Statement — When you include the Mathematics & Statistics Department in the final disposition of your estate, you declare to your family and friends that you believe in and care about the mission of MSM-UMR. Your parting gift becomes a clear declaration of your values.

An Estate Gift Provides Needed Funding for the Mathematics & Statistics Department — Estate gifts are especially valuable, not only because they tend to be larger than annual gifts, but also because they often come at critical times. They provide that extra boost to the budget that can make the difference between program advancement and program retrenchment. Estate gifts can be designated for a specific purpose or they can be unrestricted for use where needed most. They can fund endowments that perpetually provide an ongoing witness to your friends and loved ones that you believe in the work of the civil engineering department.

An Estate Gift Encourages Imitation — There's something about a well-planned estate gift that influences others to "go and do likewise." As friends and family members plan their own estates, they may recall your generosity and thoughtfulness. Your gift may unlock resources for the university from other estates.

To arrange for a personal visit, or to simply request complimentary printed material, complete and return the coupon at the right. For additional information or to answer any questions, you may have regarding the inclusion of a charitable gift in your overall estate plan, please call Sandra Ogrosky 1-800-392-4112.

CLIP AND MAIL

- Send me free information about making a planned gift to the mathematics and statistics department.
- Contact me to arrange for a personal visit.
- Send me free information about the University of Missouri-Rolla Heritage Club.

Name: _____

Address: _____

Phone Number: _____

City: _____

State: _____

ZIP: _____

Mail completed form to:
Sandra Ogrosky
Planned Giving Office
1870 Miner Circle
223 Castleman Hall
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Rolla, MO 65409-0460

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