

NEWS LETTER

DEPARTMENT OF MATHEMATICS AND STATISTICS



December 2001

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Phonathon Record in 2001

Mathematics and Statistics graduates set a new record for pledges during the 2000-2001 fiscal year. More than 123 alumni pledged \$8,981 to the department and sent in \$7,704 in actual gifts. This surpasses the previous record of \$8,145 in pledges established in 1999-2000. Thank you for your generosity!

Your increased support provides funds for scholarships, support of student activities including the Missouri Mathematics Competition, and international travel for faculty.

"Your support has made such a difference in our department," says Dr. Leon Hall, chair of Mathematics and Statistics. "Scholarships are extremely important, and so are the student activities that your gifts support."

This year, we will begin calling our alumni starting Jan. 3. When the phone rings please take a moment to share some of your Rolla experiences with a current student, and say, "Yes," when asked for a pledge. Taxpayer support accounts for only 40 percent of the university's revenue, making your contribution a vital ingredient in the revenue pie. Private funding also helps distinguish UMR from other universities, increasing the value of your education. Any amount you give will be appreciated, and most importantly, your participation will help make UMR a leader in alumni giving among public universities.

Reminder

*Phonathon will be held
January 30-31 and February 3, 4, 5,
2002.*



Note from the New Editor

Glen Haddock has passed his pen over to me. In 1985 or thereabouts, when I first asked Dick Erkiletian to start up an alumni newsletter, I never expected that I'd have to take it over. What we had in mind was an outgrowth of the AlumniStudent-Faculty Conferences sponsored by the campus in the 1970's, in which two or three graduates would return to visit with students and faculty and give colloquia to their major department to discuss the directions their careers had taken.

Although these conferences had disappeared in the wake of one of the numerous budgetary cutbacks on campus, Dick and I thought that a newsletter could not only help to replace them, but also provide access to similar information, which would be especially valuable both to the students and faculty, from many more of our graduates.

We are interested in the many different activities our students pursue after leaving the campus and we look forward to hearing from you. We are often asked, by prospective students, their parents, and others, what a mathematician does, and the best reply we can make is to describe a few of the careers our graduates have had. Furthermore, it is good to find the areas in which our graduates have been well-prepared and those areas to which we might give more emphasis. The success or failure of our work as teachers comes from its effect on our students.

Louis Grimm

Mathematics & Statistics Department
 URL: www.umar.edu/~mathstat
 e-mail: mathstat@umar.edu

The Excellence in Mathematics Awards

Last year, the department instituted the Excellence in Mathematics Awards to recognize those Missouri high schools whose students coming to UMR over the past five years have done exceptionally well in their first semester mathematics courses here. Awards are given to schools in large (20 or more), medium (10-19) and small (5-9) school categories, depending on the number of students the schools have sent to UMR during the five year period. Schools sending fewer than five students were not eligible. The top schools in each category were then chosen.

The awardees this year, in each category, in alphabetical order, are:

Large: Glendale High, Springfield; Lee's Summit Senior High, Lee's Summit; Marquette Senior High, Chesterfield; Park Hill High, Kansas City; Rolla Senior High, Rolla

Medium: Fox Senior High, Arnold; Mexico High, Mexico; St. Francois Borgia High, Washington; Washington High, Washington

Small: Poplar Bluff High, Poplar Bluff; Ste. Genevieve Senior High, Ste. Genevieve; Seckman Senior High, Imperial

Previous awardees cannot repeat for three years. Several of these would otherwise have again qualified for this year's award: Large: Helias, Jackson, Lafayette. Medium: Duchesne. Small: Potosi.

Comments



from the Chair

The longer I am in the Chair's Office, the more I learn about the job. One thing mathematicians and mathematics departments in general could be a lot better at is public relations, and I have found that I am no exception unless I make a conscious effort. An important function of the department chair is to be a cheerleader for the department, so this year, I want to talk about awards. As you have read elsewhere in this newsletter, several members of the department were honored with a number of different awards this year. Tom Akers, Tom Ingram, and Vy Le received Outstanding Teacher Awards, Murat Atmaca received the Parents' Association Outstanding Teaching Assistant Award, Martha Grisham received the UMR Staff Excellence Award, and Lou Grimm received the Missouri MAA Section's Distinguished College or University Teaching of Mathematics Award. I am very pleased about all these awards. They are indicative of the many good things that go on in this department.

The Outstanding Teaching Awards and the Outstanding GTA Award are based on student evaluations of teaching, and the Staff Excellence Award and the MAA Missouri Section Distinguished Teaching Award require nominations with appropriate supporting documentation. Thus, all these awards are ultimately decided by groups of people outside the department. The people receiving the awards did not campaign for them, they simply went about their business and did their jobs in their usual first-rate way, and the value of their work was recognized by others.

It was especially gratifying for the department to get three Outstanding Teaching Awards plus the Outstanding GTA Award this year. Col. Akers, Profs. Ingram and Le, and Mr. Atmaca are not "easy instructors" from whom students can get good grades with little effort, but they are all quite good at using positive motivational methods to get their students to put out the needed effort required for success. These instructors also are able to convince their students that they have genuine interest in and concern for how their students are doing. Finally, all these instructors spend a lot of time being well-prepared for each class. When the teacher is visibly well-prepared, this sends a powerful message to the students, motivating them to match that preparedness themselves. Even the students who did not succeed realized that they were given every opportunity to do well by these instructors. In fact, most, if not all, of the teachers in the department share these same good attitudes towards students and teaching, and this has been true in this department for a long time. Congratulations to the four award winners for shining a bright positive light on the teaching in the department.

"Awards are indicative of the many good things that go on in this department"

Whenever I see alumni or former faculty who were at UMR since 1977, they always ask about Martha Grisham and always want me to say hello to Martha for them. I try to remember to tell her all these "hello's" because I know she will be pleased to hear from all her friends who are no longer living in Rolla. It is hard to realize that she has been with our department longer than any current non-retired faculty member. Glen Haddock considers hiring Martha to have been one of the best administrative actions of his career, and all of us who have followed Glen in the Chair's Office agree wholeheartedly. The Staff Excellence Award she received last spring was richly deserved and long overdue. As many of you know, Martha is the kind of person who does not call attention to herself, but who also does her job so well that things run so smoothly that people don't realize (until they stop and think) how vital she is to the positive and productive atmosphere in the department. The rest of the faculty and I will be honored to continue to relay messages back to Martha, but why not come back and see us so you can tell her "hello" in person? I know she will be happy to see you and catch up on what you have been doing.

In 1969 while I was teaching at Normandy High School and planning to return to UMR for graduate work, Lou Grimm was assigned to be my advisor beginning in the summer term. In the spring he wrote me a letter (which I still have) telling me he would be my advisor and that I should review the power series solution chapters in Boyce and DiPrima's differential equations book. Well, I never did review those chapters because I didn't know where to get the book (B. Dalton's didn't have it - imagine that), but I guess I convinced Lou I was teachable, because he kept me on as a student. After all, I had proved I could read his handwriting. After I finished my Ph.D. under his guidance and went off to Nebraska we kept in touch. When I returned to UMR as a faculty member he was my department chair, then we were colleagues in the department, and finally I became his department chair. I doubt if we can come completely full circle and reverse the student-advisor relationship, but who knows - one of Lou's best traits is his eagerness to learn new things. All this is my personal reflection on a valued relationship which cannot be simply described. The Missouri MAA Distinguished Teaching Award was a fitting career honor for Lou last April, and it brings national recognition to the department. Only twenty-four mathematicians nationwide received this award in 2001, and the MAA widely publicizes the names and affiliations of the winners.

All these people make UMR and the UMR Mathematics and Statistics Department a better place. I am proud to be associated with them.

Leon M. Hall

Leaving a Legacy Through Your Will

A planned gift makes a perpetual statement about your dedication to MSM-UMR. While many may not be able to establish an endowment today, they find that they are able to leave a significant legacy to the university through a planned gift, such as a bequest, life income gift or life insurance. By making a planned gift, you show your loyalty to an institution that has played a significant role in shaping your future. For more information about giving a planned gift, contact Judy Cavender at 573-341-6090 or e-mail her at judyc@umr.edu.

Students, Faculty, Staff **Special Recognition**

Campus-wide recognition came to our Administrative Assistant, Martha Grisham, who has been a member of our department (and one of my most valued colleagues) since 1977 and served with five Department Chairs to keep the department running extremely well during this time. Martha received a Staff Excellence Award on Staff Recognition Day in May. Martha has done a superb job for us since her first day in the department.

Three departmental faculty members have received Outstanding Teacher Awards for the year 2000-2001: Col. Tom Akers, Dr. Vy Le, and Dr. Tom Ingram. Generally, recipients of these awards have placed in the top 5% of the UMR faculty as judged by their students in the preceding year. We note that each of these recipients has been previously recognized for teaching excellence by our students; in fact, Col. Akers and Dr. Le received Outstanding Teacher Awards just last year!

Although the campus gives several Outstanding Teacher Awards each year, the Parents' Association gives just one Outstanding Teaching Assistant Award for the entire UMR campus. Murat Atmaca, who is completing his Ph.D. work with Dr. Matt Insall, has received this award this year. This is the twelfth time since 1986 that one of our teaching assistants has been thus recognized. This department has done a superb job in turning out graduates who are first-rate teachers.

Assistant Professor Martin Bohner has had (even for him) a busy year. He is spending this year on leave at Florida Institute of Technology working with Professors Agarwal, Fulton and Lakshmikantham after spending two weeks as Visiting Professor at the University of Ulm, and getting married in Ankara at the end of July. He edited special issues of three journals, organized several conferences and special sessions, gave a number of colloquium talks at universities in the U.S. and abroad, published seven papers and submitted a dozen more, and completed a book written with Allan Peterson, "Dynamic Equations on Time Scales", to be published by Birkhauser Boston late this year.

Associate Professor Steve Clark has returned after dividing his sabbatical year in 2000-2001 between University of Missouri-Columbia in the Fall and University of Tennessee-Knoxville in the Spring. Welcome home, Steve!

Professor Tom Ingram arranged a grant to the department from the Educational Advancement Foundation for a mentoring project. He also presented a paper at a special session at the AMS meeting in Birmingham last November, and gave an invited talk at Auburn in February at the mini-conference in memory of Ben Fitzpatrick.

Associate Professor Ilene Morgan recently concluded a term as Chair of the Missouri Section of the Mathematical Association of America. As one of her duties as Chair, she organized the Spring Section Meeting that was held in Rolla in April 2001. The meeting was attended by about 100 faculty members and students from all over Missouri. Our department was well represented in the program: One of our undergraduates, Chad White, three graduate students, Murat Atmaca, Lucille Marshall, and Sibel Pasali, two faculty members, Professors Leon Hall and Troy Hicks, and two of our graduates, Professors Susan Callahan of Cottey College and James Guffey of Truman State University, all presented papers at the meeting. It is especially gratifying to find our current students participating; during the thirty-three years I have been at UMR, many of our graduates, as well as our faculty members, have played a leadership role, both regionally and nationally, in the MAA.

Lou Grimm Receives 2001 Missouri MAA Distinguished Teaching Award

Professor Emeritus Lou Grimm was presented with the Missouri Section of the Mathematical Association of America's 2001 Distinguished College or University Teaching Mathematics Award at the annual Spring Meeting banquet on April 6. Lou is the third person from our department to receive this award - previous recipients are Gus Garver and Troy Hicks.

Coming and Going

We have four new faculty members this year:

Assistant Professor Mohamed Ben Rhouma, B.S. and M.S. 1990, Ecole Nationale d'Ingenieurs de Tunis, M.S. 1995, Ph.D. 1999, University of Missouri Columbia, joined us from Georgia Tech. Research Area: differential equations and dynamical systems.

Assistant Professor Miron Bekker, M.S. 1977, Odessa Technical Institute, Ph.D. 1992, Mathematical Institute of the Ukrainian National Academy of Sciences, joined us from Idaho State University Research Area: operator theory and harmonic analysis.

Associate Professor Wlodzimierz Charatonik, M.S. 1982, Wroclaw University, Ph.D., 1988, Warsaw University, continues on our staff after spending a leave here from National University of Mexico. Research Area: topology and continuum theory.

Associate Professor Roman Dwilewicz, M.S. 1971, Ph.D. 1976, Sc.D. (habilitation) 1985, Warsaw University, joined us from Texas A & M University. Research Area: geometric analysis, algebraic and differential geometry.

Assistant Professors Michael Dorff, Albert Goodman, and Kevin Pilgrim have resigned.

A Personal Note

At the April MAA Missouri Section meeting, I received this year's Distinguished Teaching Award. It is an honor to find oneself placed in an equivalence class with the department's previous recipients, Gus Garver and Troy Hicks. Gus has influenced thousands of students directly, with his nationally recognized work on freshman placement when the students first came to UMR, and then through his classroom instruction or advice (and frequently both) during their years here, and in addition, more indirectly, by providing insights and counsel, in many areas concerned with teaching and student activities, to his colleagues both in the department and across campus. Troy, in addition to being a splendid classroom teacher and research director, was, together with Glen Haddock, a prime force in developing our graduate programs, which have produced many leaders in (and beyond) the mathematical and statistical community, from Maine to California, the Dakotas to Texas, as well as all across Missouri. A considerable number of these have been Troy's own Ph.D. students.

However, one can't teach without students, and one can't do good work without good material and proper tools. (Even Chippendale couldn't build fine furniture with knotty, warped, and dry rot-riddled wood, or lacking a workshop equipped with good, well-maintained tools. Woodworking tools need not be fancy, or state-of-the-art, but they have to be good, and they have to be sharp.) I have taught at a half dozen different universities. Of all these, UMR has provided by far the best environment for teaching.

The students we have had at Rolla, and especially the Mathematics majors, have made it a pleasure for us to teach here. We have always had far more than our fair share of students who not only have the talent and the determination that make for success, but also, more importantly, are first-rate people. Not all of these qualities always occur together. We are understandably proud of the excellence of our graduates, but they were headed for excellence long before they were our graduates. We have had superior material to work with.

For many years, it has been my privilege to work together with a fine group of colleagues, among whom I want especially to mention Martha Grisham and three superb department chairmen, Glen Haddock, Tom Ingram, and Leon Hall, who, by their own examples, have provided standards of excellence for the rest of us. Our "workshop" has been, and continues to be, in excellent hands.

Louis Grimm

Contributions

Matching gift companies

Boeing/McDonnell Douglas Foundation
DST Systems, Inc.
Engelhard Corporation
Hewlett-Packard Company
IBM
Lockheed Martin Corporation
NCR Foundation
Novartis Corporation
SBC Foundation
USAA (United Services Auto Association)

Gifts

Akers, Thomas D. '73
Allen, Mark Andrew '96
Anderson, Dennis R. '74
Anderson, Robert '75

Babson, Gail Anne '84
Becher, Steven John '96
Bozdech, Paul Steven '93
Breig, William F. '62
Brock, Van W. '63
Brown, Harmon C. '72
Bruening, James T. '71
Callahan, Susan L. '78
Carlson, John W. '70
Carter, Karen S. '73
Caton, Kurt D. '72
Cook, David L. '67
Corley, Cathy Janeen '87
Crabtree, Thomas F. '68
Cridler, Joseph Allen '80
Cross, Gavin Morrison '90
Davis, Kevin Thomas '86
Diggins, Sally Andrea '85
Dik, Mehmet '97
Dorrell, Edward W. '68
Dunn, Anita '87
Duvall, Henry Pat '62
Edson, Barbara '64
Edwards, Shawn David '92
Eidson, Jimmie R. '65
Eloe, Paul W. '77
Estes, Larry E. '69
Faoro, Robert B. '63
Fogle, David R. '71
Folta, Peggy Ann '83
Galli, Donald H. '74
Gerlt, Lori J. '89
Glenn, Harold A. '66
Goetz, Michelle Andrea '91
Grice, John V. '78
Guffey, James Michael '85
Haas, Douglas James '94
Haas, Gerald N. '62
Haddock, A. Glen
Hager, Harold W. '70
Haile, Brian Douglas '91
Haley, Kimberly Ann '95
Hall, Leon M. '69
Hamilton, James R. '73
Hand, Linda Marie '82
Haney, Larry G. '68
Hawkins, Larry O. '73
Hegemann, Victor J. '74
Hess, James L. '73
Holliday, Robert L.
Huff, Michael Lee '82
Ibarra, Cheryl A. '71
Ilges, Shannon, Rene '91
Ingram, William Thomas
Jamison, James E. '65
Johnson, Kenneth G. '69
Jones, Keith Norman '84
Jones, Rana Elaine '87
Kauffman, Jimmie L. '67
Kieffer, John C. '67
Killinger, J. Curtis '73
King, Sherry Lee '95

Kingston, Joseph V. '67
Kline, Bradford J. '88
Kubicek, John D. '75
Lacey, Robert J. '86
Lane, William L. '73
Leitterman, Pamela A. '75
Lindsmith, Stanley Benson '90
Lorge, Peggy S. '73
Marlin, Benjamin Arthur '93
Maupin, Marcel A. '78
Mausshardt, Denise Ann '83
McKee, Rhonda Louise '84
Miskey, Keith James '00
Montrey, Henry M. '67
Moppins, Brandi Michelle '97
Neill, James W. '73
Oakes, Janet R. '75
Obermann, David F. '78
Oster, Teri Lynn '84
Pamperien, Neil C. '64
Parsons, Kenneth C. '74
Penas, Linda Marie '85
Petty, Lisa Jane '86
Pierce, Ronald W. '75
Polly, Kimberly Ann '95
Record, Ralph T. '64
Reed, John K. '80
Reiman, Paul Whitney '83
Reiter, Nancy Lillian '82
Rice, Donald Keith '69
Richards, James L. '72
Riggs, Donna B. '94
Riggs, John R. '67
Roe, Robert P.
Rooks, Joseph L. '73
Rosekrans, Norman A. '53
Saliga, Linda Marie '89
Sallas, William M. '75
Schirer, Ivan J. '70
Seme, Lars Kristofer '97
Sept, Douglas Matthew '94
Sherrick, Bobby J. '66
Sherrick, Sherman W. '68
Sicking, Paul O. '76
St. Clair, Daniel C. '75
Stahl, Joseph W. '69
Stansfield, John Joseph '85
Stokes, Brenda Kay '87
Strunk, Gregory M. '74
Tanzey, William H. '74
Tichenor, Dolores, M. '76
Van Alstine, William L. '66
Wagner, Marian R. '71
Wagner, James Carl '94
Walker, Lois J. '76
Wells, Curtis L. '70
Wilson, Douglas Eugene '89
Wist, Patricia S. '74
Wolff, Alan M. '71
Woodard, Joan B. '73
Woods, Glen D. '64
Wyckoff, James J. '78

Alumni News

Tom Akers (B.S. 1973, M.S. 1975) as noted above, received another Outstanding Teacher Award here this Fall. It has been a pleasure to have him back in the department as a colleague for the past two years.

Harmon Brown (Ph.D. 1972) continues to teach at Harding University. He is serving as Governor of the Ozark District (Missouri-Arkansas) of the Civitan club for 2000-2001.

John Carlson (Ph.D. 1970) has just retired as Dean of the College of Arts and Science at the University of South Dakota. He had served for many years as Department Head at Emporia State prior to moving to South Dakota about a dozen years ago as Dean. Nonetheless, in spite of the administrative demands upon his time and concentration, John has maintained a very active research program in topology over the years.

Gavin Cross (M.S. 1990) is Assistant Professor of Mathematics at Coe College in Iowa. He was married this Summer to Lisa Barnett, a Professor of Sociology there. They have bought a house in Cedar Rapids, where they and their six cats live. (From my experience with cats, it's the other way around: the cats permit Lisa and Gavin to live with them.) We've had some good graduate students coming here from Coe College. Gavin, we'd be glad to have you send us some more.

Jim and Anita Bhatia Dunn (B.S. 1987) welcomed their third child Caroline Elizabeth on January 18th. Caroline joins her brother Andrew, 5 and sister Ellie, 3. Anita is still teaching at Visitation Academy.

Pat Duvall (B.S. 1962) visited the department this Fall; he tries to get over to see us whenever he comes to Rolla. As Washington State Area Director for the MSM-UMR Alumni Association, he gets to avoid the Seattle bridge traffic for a little while when he comes. (But he must have noticed that even in Rolla, there is a lot more traffic than there used to be!)

Paul Eloë (M.S. 1977, Ph.D. 1980) received the Outstanding Scholarship Award in November from the College of Arts and Science at the University of Dayton. Paul continues to chair the department while teaching, maintaining a most active research program, and serving as editor for about a half dozen mathematical journals. In his spare time (WHAT spare time?) he and Laurie are working on

completing the house they built a couple of years ago.

John Evans (B.S. 1970) is a Senior Operations Analyst for the Defense Intelligence Agency, serving as Head of Systems Engineering and Architecture on an interagency information management and decision support system. He also is working on a Ph.D. degree in Systems Engineering and Operations Research at George Mason University in Fairfax, VA.

Bill Fitzpatrick (M.S. 1974, Ph.D. 1977) continues to run. He competed in the Senior Olympics this summer at Baton Rouge, LA and raced on four consecutive nights in the heat and humidity of the Louisiana swamps. He finished fourth in the 400 meter and second in the 800 meter runs in the 50-54 age group. Bill reports that there were about 9000 participants in the games; the oldest was a 101 year old archer from New Mexico. Bill and I were involved in a couple of pleasant enterprises this summer: on a beautiful day in San Diego in June, we took in a game between the Padres and Giants (which it seemed for a while that neither team could win, but the Padres eventually outfumbled the Giants to lose the game). A couple of months later, we submitted a paper on work done jointly with Leon Hall, which will appear in the *Journal of Difference Equations and Applications*.

Linda Hand (B.S. 1982) Associate Professor of Mathematics at Missouri Southern State College, was named Outstanding Teacher there for the year 1999-2000. Linda is pursuing her interest in the history of mathematics, and giving talks on the subject. Linda, why don't you come up to Rolla and give us a colloquium soon?

Curt Killinger (B.S. 1973) received the Robert V. Wolf Service Award from the MSM-UMR Alumni Association in September in recognition of his service to the campus.

Brad Kline (B.S. 1988) has accepted a position as an Applied Mathematician for the U.S. Government. He was married in June to Anjula Batra, whom he met in graduate school at the University of Illinois. They now live in Ellicott City, MD.

Peggy Shackles Lorge (B.S. 1973) is teaching Trigonometry, Computers, and Alternative Education at Pyramid Lake High School in Nevada. She received her M.S. in Educational Leadership from the University of Nevada-Reno in 1998.

Stephanie Mathis (B.S. 2000) completed her student teaching in Fall 2000 in the Rolla and Salem public schools and was nominated for the Phi Delta Kappa International Outstanding Teacher Award. She is now teaching at Rolla Junior High.

Jean Meyer (B.S. 2000) was married in January and has moved to Columbus, Ohio, where her husband is in graduate school.

Linda Penas (Ph.D. 1985), in addition to keeping busy (as usual) at University of California-Riverside with teaching, developing a statistics course for University Extension, and getting several of her grant proposals (including one for rebuilding the department's UNIX computer lab) funded, is serving as Vice President for Academic Affairs for the Southern California chapter of the American Statistical Association. Linda goes back to North Dakota every year as soon as the Spring Thaw is over. We'd be pleased if she would stop by then to see us, but it may be a bit too hot in Rolla on the first of August.

Linda (M.S. 1989, Ph.D. 1993) and Stephen Saliga have a new son, Matthew, born in January-Linda didn't get to the New Orleans meeting this year for some reason! She continues her teaching and research as Associate Professor at the University of Akron.

Chad White (B.S. 2001) presented a paper (which resulted from his Research Experience for Undergraduates work at Rose-Hulman the preceding summer) at a poster session at the AMS-MAA meeting in New Orleans. His travel expenses to the meeting were covered by alumni support through the department's Development Fund. This year, Chad returned to UMR for graduate work after spending the summer working at Livermore National Laboratory.

Adam Wineinger (B.S. 1992, M.S. 1994) has completed his medical training and has taken a position in St. Joseph, MO. Shelly (B.S. 1991, M.S. 1994) is now Department Head for Dickinson Theaters. They now have three cats and a dog, which puts them three cats behind but a dog ahead of Gavin and Lisa.

Fred Worth (M.S. 1987, Ph.D. 1991) and his family stopped by to visit the department this Spring. It was great to see them again; it had been quite a while.

Patti Wright (B.S. 1996) has a new daughter, Emily, born in November. Patti is teaching at Richland.

Summer Workshop Trains Teachers from Forty-Four Missouri Schools

Usually, the summer break is thought of as vacation time for school teachers. This wasn't the case for sixty-eight teachers from forty-four schools around the state who came to UMR this July to attend the "Making Sense of Data" statistics workshops. The Mathematics & Statistics Department offered three workshops, for elementary, middle, and high school teachers, from July 23-27. A follow-up meeting was held on September 8, with another scheduled for March 2, 2002.

Since 1996, similar workshops were offered by our department every summer. The three workshops held this summer brings the total number of such workshops to thirteen. Dr. V. A. Samaranyake, Associate Professor of Mathematics and Statistics initiated these workshops with Dr. Jagdish Patel (now retired) after several meetings with local area teachers and the Superintendent of the Rolla School District. Dr. Samaranyake was assisted in subsequent years by Dr. Tom Kirchoff (now with Capitol One) and Mrs. Mary Ellen Kirgan, the department's Placement Director. This year's Co-director is Dr. Eva Lee Lasater, adjunct instructor of the UMR teacher education program. These workshops were funded by an Eisenhower grant awarded by the Missouri Coordinating Board for Higher Education.

One reason why we continued to offer this program over all these years is the strong demand we have seen for the workshops. If you have any school aged children, you may have noticed that their mathematics books now have a considerable amount of material on graphical display of data and basic statistical concepts. This is due to the new mathematics standards drawn up by the National Council of Teachers of Mathematics (NCTM) during the nineties. Unfortunately, many teachers have not had much training in these topics, with the only exposure coming from an educational statistics or a mathematical statistics course. Discussions with teachers showed that such a background did not provide them with the skills needed to implement the NCTM standards. Some of the topics were totally new to the teachers. Even the topics they knew well posed pedagogical problems. How could one teach such boring subjects such as Probability and Statistics to modern day school kids and

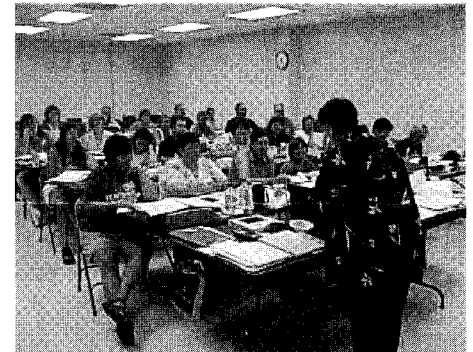
make it interesting! This is what the workshops focused on. We introduced fun-to-do activity based methods that can be effectively used to introduce concepts in probability, statistics, and data analysis.

At the elementary level, the focus was on data gathering through experimentation. The data was then summarized and displayed through tables and graphs. We got into more theoretical concepts at the middle school level, but continued with the hands-on activities. We also introduced the use of the graphing calculator. At the high school level, we used a series of books that seamlessly integrate probability and statistics concepts into the classical high school mathematics curriculum. Many of the standard algebraic concepts, such as the equation of a straight line, were introduced via data analysis problems. This approach, known as Data Driven Mathematics, developed by a group of mathematics teachers and statisticians through a NSF grant, has been successfully implemented in many schools across the country. Another unusual aspect is that these workshops were not taught by department faculty, but by three *Master Teachers* trained by the American Statistical Association. The two Co-directors and several graduate students acted as facilitators and were there to answer difficult content specific questions, but the master teachers were solely responsible for the pedagogical aspects.

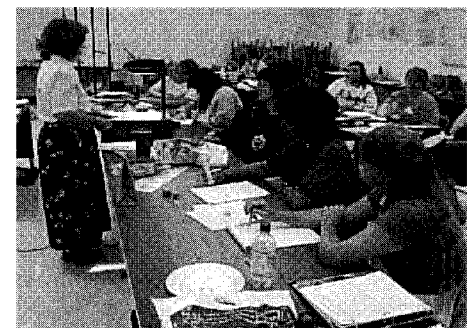
The response to these workshops have been extremely positive. We obtained participant feedback through workshop evaluations as well as via pre and post workshop questionnaires. An independent external evaluator was hired to measure the impact of the workshops. All these instruments show not only a very positive opinion of the participants, but more importantly, that they are successfully implementing the workshop ideas in their classroom. According to the external evaluator, he has not seen very many workshops that have had such a positive impact in the classroom. We are quite proud of this and hope to build on our success by offering three more workshops next summer. This success is due to the hard work of many people, including the departmental staff Martha Grisham and Sharon Matson who put many hours beyond what is required of them. The project team is also appreciative of the strong support given by the Department Chair, Dr. Leon Hall, and our former Chair, Dr. Tom Ingram.



High School Workshop



Middle School Workshop



Elementary School Workshop

Awardees



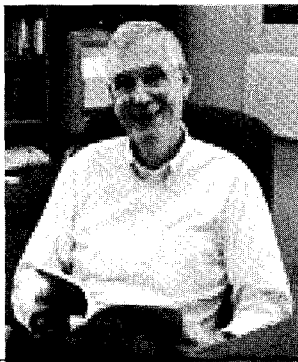
*Martha Grisham
Staff Excellence Award*



*Tom Akers
Outstanding Teacher Award*



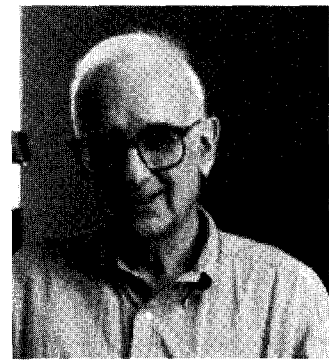
*Vy Le
Outstanding Teacher Award*



*Tom Ingram
Outstanding Teacher Award*



*Murat Atmaca
Parent's Association Outstanding
Teaching Assistant Award*



*Louis Grimm
Missouri MAA Section Distinguished
College or University Teaching of
Mathematics Award*

Let us hear from you

mail to

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

or

fax to (583) 341-4741

or

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<mathstat@umr.edu>

Name _____ Years attending UMR _____

Current activities/interests _____

Family _____

News/plans _____
