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NEWSLETTER

November–December 2000

# PRESIDENT'S REPORT

At a recent meeting of another board I belong to, someone said roughly the following: "Left to themselves, organizations will tend to do tomorrow what they did yesterday. It is up to the leadership of an organization to try to articulate a vision of where the organization ought to be headed, and to try to initiate the changes that will make it possible."

With AWM, that is certainly true, but another part of the struggle is just to keep going. As its president, I am often asked why there is still a need for AWM. Sometimes the progress of women is cited, as evidence that AWM is no longer needed. Sometimes the lack of progress in some areas is cited, as evidence that maybe there are just inherent differences. Sometimes it is stated that women will advance without AWM doing anything. But until more than six percent of the speakers at an important meeting such as Mathematical Challenges of the 21st Century are women, as pointed out by Lenore Blum in her passionate letter in the October issue of the *Notices* of the AMS, it is clear to me that our efforts are still needed.

A vivid example of what we are contending with came in a recent reviewer's report for the AWM workshops, which stated that what women really need is just more interaction with the experts in their fields and not with other women mathematicians. The report said explicitly and categorically that workshops should be organized around scientific lines, independent of gender or racial considerations. I hope that's a minority viewpoint; in particular, I'm pleased to announce that AFOSR realizes the importance of AWM Workshops and will join ONR and NSF in providing much-appreciated funding. Still, I'd like to address that reviewer directly, and all who may feel similarly.

First of all, AWM fully realizes the importance of young mathematicians having such interactions with experts. That is why we have the Travel Grant programs: through the regular travel grants, a woman can get funds to participate in a discipline-specific meeting, and through the mentor travel

# IN THIS ISSUE

- 4 In Memoriam
- 8 Connecting Women in Mathematical Sciences to Industry
- 12 Book Review
- 15 Education Column
- 19 SKHS Days

## AWM



The Association was founded in 1971 at the Joint Meetings in Atlantic City. The purpose of the association is to encourage women to study and to have active careers in the mathematical sciences. Equal opportunity and the equal treatment of women in the mathematical sciences are promoted.

The *Newsletter* is published bi-monthly. The Editor welcomes articles, letters, and announcements.

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Accountant Muriel B. Daley; awm@math.umd.edu grants, a non-tenured woman can get funds to visit a specific senior expert for a full month, regardless of gender.

Secondly, the Workshop presentations (20 minute talks by recent Ph.D.'s, posters by graduate students) are open to the entire mathematical community, and are typically attended by at least as many men as women. The young women selected for the workshop are simply provided a forum to present their work — to the experts, to potential employers, and to a random assortment of mathematicians as well as to the other young women.

Finally, while agreeing that interactions with senior experts are of critical importance in a young mathematician's intellectual life, AWM also believes that there is a great benefit to young women in talking to each other and to senior women, in particular though not exclusively about issues of being a woman in mathematics, and that too is a part of the workshops. Getting one particular cohort together is recognized to be valuable in other contexts (e.g., a variety of young scientists meet at the Frontiers of the Physical Sciences meeting of the National Academy of Sciences). Surely that also applies to young women in mathematics!

Furthermore, by publicizing the content of the workshops on the web, AWM creates a source of information on the research of young women in mathematics and adds to the store of biographical information about women in mathematics.

This brings me to one of the things I am proudest about accomplishing during my tenure as President of AWM, and that is the creation of a vibrant website used by AWM individual members, by institutions, and by the public. Pages with particularly high visitation include the job ads (so if you or your department have any to offer, be sure to advertise online at www.awm-math.org) and those with biographical and career information. Of course, I invented this website only in approximately the same sense that Al Gore invented the internet; the actual work has been done by our outstanding web editor Tamara Kolda and her able part-time helper Aileen Gormley. AWM welcomes two new volunteers on the web site, Sigal Gottlieb and Helen Moore.

There is now a bibliography page featuring links to on-line book reviews from past AWM *Newsletters* as well as links to Amazon.com to purchase the books that are listed. In fact, AWM is now in the Amazon.com Associates Program, and AWM receives a portion of the purchase price of most products you buy at Amazon.com when you go there via our site at www.awm-math.org. Visions I have of for the future for the AWM website include putting a revised Speaker's Bureau list on the web (I need volunteers!!) and expanding the offerings on the web site to include sections directed at girls of all ages.

And this leads me to the subject of the AWM Panel at the Joint Mathematics Meetings, which is "AWM and K-8 Education: What

Should We Do?" Be sure to come, and to send in your ideas. Suzanne Lenhart, AWM President-elect, and I organized it, and the panelists will be Shirley Malcom, Head, AAAS Directorate for Education and Human Resources Programs; Judith Roitman, Professor, Department of Mathematics, University of Kansas; Erica Voolich, 7th grade teacher, Soloman Schechter Day School, Newton, MA; and Virginia M. Warfield, Senior Lecturer, University of Washington.

I had hoped to continue the AWM Scholars Program at the AAAS Annual Meeting this year, but it was not feasible for a variety of reasons, including lack of funding and the paucity of women mathematicians as speakers and organizers of symposia. Six students participated in it last year and were a notable presence at the meeting (many commented positively to me about the lively young women who were everywhere); their enthusiastic reports on the mathematical talks at the meeting appeared in the May–June 2000 issue of this *Newsletter*.

I close with another quote: "People need to see something more than once before they'll act on it." The current action I hope everyone reading this will perform is: renew your AWM membership (or join, if you aren't a member)!

Jean Taylor Princeton, NJ July 27, 2000



#### MEMBERSHIP AND NEWSLETTER INFORMATION

#### Membership dues

Individual:\$50Family (no newsletter):\$30Contributing:\$100Retired, part-time:\$25Student, unemployed, developing nations:\$15Friend:\$1000Benefactor:\$2500All foreign memberships:\$8 additional for postageDues in excess of \$15 and all contributions are deductiblefrom federal taxable income.Institutional Members:

Level 1: \$250 Level 2a: \$125

Level 2b: \$125

See http://www.awm-math.org for details on free ads, free student memberships, and ad discounts.

Affiliate Members: \$250 Institutional Sponsors:

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	Friend: \$1000+	Patron: \$2500+	
	Benefactor: \$5000+	Program Sponsor:	\$10,000+
	See the AWM website	for details.	

#### Subscriptions and back orders

All members except family members receive a subscription to the newsletter as a privilege of membership. Libraries, women's studies centers, non-mathematics departments, etc., may purchase a subscription for \$50/year (\$58 foreign). Back orders are \$6/issue plus shipping/handling (\$5 minimum).

#### Payment

Payment is by check (drawn on a check with a U.S. branch), U.S. money order, or international postal order. Cash payment will be accepted if necessary, but only in U.S. currency.

#### Newsletter ad information

AWM will accept advertisements for the *Newsletter* for positions available, programs in any of the mathematical sciences, professional activities and opportunities of interest to the AWM membership and other appropriate subjects. The Director of Marketing, in consultation with the President and the Newsletter Editor when necessary, will determine whether a proposed ad is acceptable under these guidelines. *All institutions and programs advertising in the* Newsletter *must be Affirmative Action/Equal Opportunity designated.* Institutional members receive discounts on ads; see the AWM website for details. For non-members, the rate is \$60 for a basic four-line ad. Additional lines are \$6 each. See the AWM website for *Newsletter* display ad rates.

#### Newsletter deadlines

Editorial: 24th of January, March, May, July, September, November

Ad: 1st of February, April, June, August, October, December

#### Addresses

Send all Newsletter material except ads and material for book review and education columns to Anne Leggett, Math Dept., Loyola University, 6525 N. Sheridan Road, Chicago, IL 60626; email: leggett@math.luc.edu; phone: 773-508-3554; fax: 773-508-2123. Send all book review material to Marge Murray, Math Dept., 460 McBryde Hall, Virginia Tech, Blacksburg, VA 24061-0123; email: murray@calvin.math.vt.edu and all education column material to Ginger Warfield, Math Dept., University of Washington, Seattle, WA 98195; email: warfield@math. washington.edu. Send everything else, including ads and address changes, to Dawn V. Wheeler, 4114 CSS Building, University of Maryland, College Park, MD 20742-2461; phone: 301-405-7892: email: awm@math.umd.edu.

# AWM

#### AWM ONLINE

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**Online Ads Info** Classified and job link ads may be placed at the AWM website. Detailed information may be found there.

Website http://www.awm-math.org

AWM-Net Editor Dianne O'Leary oleary@cs.umd.edu

AWM-Net send mail to awm-net-request@cs.umd.edu and include your email address; AWM members only

#### AWM DEADLINES

NSF-AWM Travel Grant: February 1, May 1, and October 1, 2001

- AWM Workshop, SIAM: January 23, 2001 (pending funding)
- NSF-AWM Mentoring Travel Grant: February 1, 2001
- Sonia Kovalevsky High School Days: February 5, 2001
- AWM Workshop, January 2002: September 1, 2001
- Alice T. Schafer Prize for Undergraduate Women: October 1, 2001

Louise Hay Award for Contributions to Mathematics Education: October 1, 2001

#### AWM CALENDAR

AWM at the Joint Meetings, New Orleans, January 2001: see inside back cover for schedule of events

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# IN MEMORIAM

Margaret Morton, senior lecturer in the Department of Mathematics, University of Auckland, New Zealand, died on August 31, 2000, after a nine-month battle with cancer. She was a member of the organizing committee of the Conference on Algebraic and Topological Methods in Graph Theory to be held next December at her university; the conference will now be dedicated to her memory with a half-day special session in her honor. (More information is available at www.scitec.auckland.ac.nz/ atmgt2000).

Margaret, born in Wellington, NZ, on September 11, 1944, attended the University of Auckland from 1963–66, completing first a B.Sc., then a Masters in Mathematics. She was keen to pursue a career in mathematics and, in 1967, travelled to the United States to accept a teaching assistantship in the graduate program at the Pennsylvania State University. She juggled children, mathematics, and teaching, completing her Ph.D. under the supervision of Professor Raymond Ayoub, working on quaternion algebras over Q[X] and Z[X], in 1975. She continued as an instructor at Penn State while her husband, Bob Morton, finished up his degree. She then wanted very much to return to New Zealand, but the job market for university positions in the U.S. and in New Zealand was very poor. Instead she followed her husband to Dallas, Texas, where she found a temporary teaching position and began a Masters Degree in Computer Science.

In the early 80s, after her marriage ended, Margaret wanted to return to her work in mathematics. She accepted a position in February 1985, as a temporary tutor in the Mathematics Department at the University of Auckland. In September 1987, she was appointed to a permanent senior tutorship, then to a permanent lectureship in February 1991. She was promoted to senior lecturer in February 1998.

Margaret wanted to engage in research, not only in mathematics education, but also in pure mathematics. The fact that she succeeded in all these areas is a tribute to her tenacity and inner strength, as well as to her mathematical ability. Following two undergraduate (joint) publications in chemistry and an early Ph.D. publication in 1976, Margaret returned to research in the late 1980s and went on to publish eight papers in graph theory between 1990 and 1999, working in areas ranging from group and symmetry theory to planarity and, most recently, tournaments. Six of her recent papers were written in the last five years along with many more in maths education. Initially she worked with Marston Conder and with Cheryl Praeger, but she also worked on her own and with Neal Brand of the University of North Texas, where she held a visiting position in the fall of 1999. More of her work is in press; for example, co-author Patty McKenna this September gave the Discrete Mathematics Seminar at the

Constance Brown, Department of Statistics, University of Auckland, NZ, supplemented by Joan Hutchinson, Macalester College, St. Paul, MN

University of Colorado at Denver on joint work done with Margaret and Jamie Sneddon, a graduate student of Margaret's, while Patty was a postdoc for two years at Auckland.

Margaret was a highly valued colleague in the Mathematics Department, making significant contributions in teaching and in research. She felt great satisfaction at being rewarded for this work in 1998 with her promotion to Senior Lecturer and with being awarded a prestigious Marsden Fund Grant, jointly with colleague Paul Bonnington. Since Margaret enjoyed travel, many of us met her at conferences, for example in the summer of 1999 at the Fourth Slovenian Conference on Graph Theory and at the British Combinatorial Conference, as well as in the U.S. where two of her children live. It is most fitting that many will have the opportunity to enjoy traveling to New Zealand to honor Margaret's life and work and person.

She is survived by three children, David and Robyn of Los Angeles and Andy of Auckland, her mother Betty James, and two brothers Donald G. James, a professor of mathematics at Pennsylvania State University, and Brian James, retired from the ANZ Bank in Auckland.

We are sad to announce the death on August 3rd of our longtime AWM member and volunteer, Yvonne Greenleaf. She taught at Rivier College of Nashua, New Hampshire for 22 years and served as chair of their Mathematics and Computer Science Department from 1993–1999.

Greenleaf had masters degrees in mathematics from University of New Hampshire and in computer science from Rivier College, and had worked on her Ed.D degree in mathematics and science education at the University of Massachusetts at Lowell.

She was particularly dedicated to encouraging young women to enter the field of mathematics, evident through her work with Project Role Model and Sonia Kovalevsky High School Mathematics Days. She served on the selection committee for the SK Days in 1998 and chaired that committee in 1999. She was also co-PI on the SK Days proposal for the 1998 funded events. Rivier College was one of the first colleges to host a SK Day, and Greenleaf was instrumental in organizing that SK Day and others to follow at her college.

Suzanne Lenhart, AWM President-Elect



Greenleaf was a recognized leader in encouraging teachers and promoting the cause of women in mathematics. She obtained a number of Eisenhower grants to conduct a series of workshops for math teachers in southern New Hampshire. She made many presentations at MAA, AMS and NCTM conferences. She was known as a wonderful teacher who cared deeply for students. She recently published a paper in *Mathematics Teacher* on "Group Work in Geometry."

We offer our condolences to her family and will miss her enthusiastic efforts for AWM.

# LETTERS TO THE EDITOR

Dear AWM members:

I am writing a book intended to educate and pique the interest of teenage girls in mathematical, scientific, and technological careers. I am looking for AWM members who would be willing to participate in my research.

I have designed an on-line survey. My website www.youcouldbea.com contains more info about who I am and my project, as well as the survey. Please visit and participate!

Sincerely, Shannon Griffin

#### To the editor:

The President's Report in the July–August *Newsletter* makes reference to the timeliness of MathSciNet. I would like to take this opportunity to respond to those comments by reporting some statistics.

The *Mathematical Reviews* (MR) staff is well aware of the importance of the timeliness of items appearing in the MR database. Over the past few years aggressive efforts have been made to reduce the processing time at MR (i) from receipt of a book or journal issue to appearance of the individual items on MathSciNet (for which the median time is now just under two months), and (ii) from receipt of a review to appearance of the review on MathSciNet (for which the median time is also about two months). These efforts continue and we expect further reductions in processing time over the next couple of years.

MR receives book and journals for review from a variety of sources. For the most part, because of the large number of different sources and the volume of material we receive, we must rely on those sources to provide material promptly. However, we do follow up with individual sources when we are aware that we are missing a published book or journal issue. A significant number of items with a publication year of 2000 already appear in MathSciNet; we expect to add most of the remaining 2000 publications over the next year.

I would like to take this opportunity to thank those AWM members who are reviewers for MR. We are particularly grateful to those who return their reviews in a timely way because of the impact this has on the timely appearance of reviews. I would also like to encourage those of you who are not already reviewers for MR to consider "signing up." Please let us know (mathrev@ ams.org) if you are interested in reviewing for MR. We would much appreciate your help in continuing MR's long tradition as a high-quality database of the published mathematical research literature.

Jane Kister Executive Editor, Mathematical Reviews

## **NSF-AWM TRAVEL GRANTS FOR WOMEN**

The objective of the NSF-AWM Travel Grants program is to enable women to attend research conferences in their fields, thereby providing a valuable opportunity to advance their research activities and their visibility in the research community. By having more women attend such meetings, we also increase the size of the pool from which speakers at subsequent meetings may be drawn and thus address the persistent problem of the absence of women speakers at some research conferences.

<u>Travel Grants</u>. These grants provide full or partial support for travel and subsistence for a meeting or conference in the applicant's field of specialization. A maximum of \$1000 for domestic travel and of \$2000 for foreign travel will be applied. For foreign travel, U.S. air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

<u>Eligibility</u>. These travel funds are provided by the Division of Mathematical Sciences of NSF, and the research conference must be in an area supported by DMS. For example, this includes certain areas of statistics, but excludes most areas of mathematics education and history of mathematics. Applicants must be women holding a doctorate (or equivalent experience) and having a work address in the U.S. (or home address, in the case of unemployed mathematicians). Anyone who has been awarded an AWM-NSF travel grant in the past two years or who has other sources of external funding, including *any* NSF grant, is ineligible. Partial support from the applicant's institution or from a non-governmental agency does not, however, make the applicant ineligible.

<u>Target dates</u>. There are three award periods per year. An applicant should send *five* copies of 1) a cover letter, including the conference name, conference dates and conference location (city/state/country), 2) a description of her current research and of how the proposed travel would benefit her research program, 3) her curriculum vitae, 4) a budget for the proposed travel, and 5) information about all other sources of travel funding available to the applicant to: Travel Grant Selection Committee, Association for Women in Mathematics, 4114 Computer & Space Sciences Building, University of Maryland, College Park, MD 20742-2461. If you have questions, contact AWM by phone (301-405-7892) or email (awm@math.umd.edu). Applications via email or fax will not be accepted. The next deadlines for receipt of applications are **February 1**, May 1, and October 1, **2001**.

# AWARDS AND HONORS

CONGRATULATIONS to the women listed below on their meritorious achievements!

ERICA VOOLICH, a teacher at Solomon Schechter Day School in Newton, Massachusetts, was among the 200 teachers selected for the 1999 Presidential Award for Excellence in Mathematics and Science Teaching. which is the nation's highest honor for math teachers in grades K-12. As an awardee, Voolich received a \$7500 educational grant for her middle school, a Presidential citation and a trip to Washington D.C. in May 2000 for a series of recognition events and information exchange programs. The solid geometry unit that she teaches to seventh grade classes was cited as exemplary, and part of that unit is in her book on this subject, Investigating with Power Solids, published by the Cuisenaire Company. Two other sources about this unit are her two articles, "Building up to Cereal Boxes" and "Constructing Containers: Five activities that take another look at volume and surface area," published in Elementary Mathematician. She recently published another book, A Peek into Math of the Past: Mathematical Historical Investigations for Middle School and Pre-Algebra Students, describing the history of mathematics for middle school students and published by Dale Seymour.

Voolich was also honored with the Edyth May Sliffe Award for Distinguished Junior High Mathematics Teachers given by MAA in 2000. This award recognizes outstanding teachers for their efforts in the development of mathematical talents of middle and junior high students.

Voolich will be one of the panelists on the AWM panel discussion on "AWM and K-8 Education: What Should We Do?" at the Joint Meetings in New Orleans on January 2001. We are proud to have Voolich as a member of AWM and send our congratulations to her for these two important awards. We are delighted that she will be on the panel in January.

SARA BILLEY, MIT, received a 2000 CAREER grant from the NSF for her work in combinatorial structures in algebra and geometry. These awards support promising young scientists, mathematicians, and engineers who are

Voolich article by Suzanne Lenhart, AWM President-Elect



committed to the integration of research and education. The grants range from \$200,000 to \$500,000 over a four or five year period.

CCNY Distinguished Professor MYRIAM SARACHIK, a condensed matter physicist, has been elected Vice President of the American Physical Society. This will lead to her becoming APS president in two years. She will be the third woman to serve in that office.

ELAINE PEI-SAN GEE received a third-place Karl Menger Memorial Award from the AMS at the 2000 International Science and Engineering Fair for her project "Dynamics of CD4 T Cells in HIV-1 Patients under HAART-Implications in Immune System Restoration." She was a senior at Frederick High School, Frederick, MD at the time of the award last May.

NSF Postdoctoral Research Fellowships in the mathematical sciences for 2000 were received by MARIA GORDINA of Cornell University for the University of California, San Diego and CHRISTINE TAYLOR of Harvard University for MIT.

Two graduate students were awarded AAAS Mass Media Science and Engineering Fellowships through the

sponsorship of the AMS. KATHRYN LEONARD, Brown University, will spend her fellowship at *Popular Science*, while MARY ANN SAADI, University of Rhode Island, will spend hers at *Business Week*.

MARILYN REPSHER, professor of mathematics at Jacksonville University, was named one of four 1999– 2000 Professors of the Year by the Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education. A feature article about the award by Hans Johnson appears in the January–February issue of *Academe*, the AAUP magazine. He mentions testimonials from students and colleagues who cite "Repsher's rare blend of passion and ingenuity as a troubleshooter in areas ranging from student achievement to campus governance."

# CONNECTING WOMEN IN MATHEMATICAL SCIENCES TO INDUSTRY

On September 8–10, 2000, The Institute for Mathematics and its Applications (IMA) at the University of Minnesota hosted a workshop on "Connecting Women in Mathematical Sciences to Industry," which was cosponsored by AWM. The workshop was designed to increase and enhance the awareness of women mathematicians about industrial applications and career opportunities. There were seventy-two participants at the workshop, including fifty students and two science/math writers. The organizers of the workshop were Rosemary Chang (Coastcom), Suzanne Lenhart (University of Tennessee and Oak Ridge National Laboratory) and Margaret Wright (Lucent Technologies), who worked closely with Willard Miller, the Director of the IMA.

After a "get-acquainted" dinner on Friday evening, Rosemary Chang opened the workshop with an inspirational talk giving a "roadmap to the workshop" and then followed up with a talk on "Some realities of working in industry." There were seven additional talks on



Saturday, combining a mixture of career advice and technical project details about industrial work; those speakers were Lynne Parker, Oak Ridge National Laboratory; Sarah Holte, Fred Hutchinson Cancer Research Center; Sharon Filipowski, Boeing Company; Carolyn Cho, Physiome; Anna Gilbert, AT&T Labs; Kathleen Hoffman, University of Maryland, Baltimore County; and Tamara Kolda, Sandia National Laboratory. In a panel discussion, Bin Yu (UC Berkeley), Bozenna Pasik-Duncan (University of Kansas), Kathy Brennan (Aerospace Corporation), and Sarah Holte shared personal career stories and constructive advice. In the late afternoon, the participants were divided into four discussion groups. Some of the advice and recurring themes are listed below. That day ended with dinner followed by an enthusiastic talk by Alessandra Chiarelli, who described her educational and professional path to a successful career at 3M Corporation. On Sunday morning, the group discussions continued. The entire group gathered in the final session for the group summaries that were given by student participants.

The recurring themes of this workshop were: augmentation of one's mathematical expertise with additional skills such as programming and statistics; importance of communication skills; flexibility; working on teams; the need to mentor and be mentored; occasionally reinventing yourself to counteract boredom; the

Rosemary Chang (Coastcom), Renee Fister (Murray State University), and Suzanne Lenhart (University of Tennessee)

need to network. The main ideas on "How does a mathematician work in industry" were: work as a member of a team; don't feel the need to prove everything; give trends; release work in stages; learn to be flexible; use the language of the application; have a wide knowledge base rather than being specialized in a narrow area; and obtain internships, the only gateway to some companies. Specific advice for graduate students included: seek internships; find a mentor or mentors; begin your interdisciplinary viewpoint by taking classes in other departments; go to conferences and workshops; network.

Many participants left with the belief that there were many more opportunities for them than they had thought. They heard senior women's descriptions of their career paths and realized that there are many possibilities and choices to make and there was no single model of success. Many left the workshop with tools that some of the more senior women wished we had. The organizers felt their expectations for this group of graduate students are higher and will be achieved.

The IMA performed a positive service to our community by hosting this workshop. Streaming video of the workshop is available on the IMA website www.ima. umn.edu. Note that photographs from the workshop are available on the AWM website. In addition to the generous support of IMA and NSF (through funding IMA), we would also like to acknowledge the support provided by the Department of Energy and Coastcom.

# PROOF: THE PLAY

The play *Proof*, which moved from Off-Broadway to Broadway in October 2000, is causing quite a stir. According to the website www.ProofonBroadway.com, it tells the story of an enigmatic young woman, Catherine (Mary-Louise Parker), her manipulative sister (Johanna Day), their brilliant father (Larry Bryggman), and an unexpected suitor (Ben Shenkman).

There is a lengthy review of the play by Dave Bayer, Barnard College, in the October issue of the AMS *Notices*. He says:

*Proof* ... is a warm exploration of one mathematical family and a mystery about the authorship of one mathematical proof and about the sources, sanctuaries, and emotional risks of intellectual passion in general. It is a rare treat to see the romance of a mathematical proof take center stage in a popular work that teases with our preconceptions without succumbing to stereotype.

The Courant Institute had a symposium on *Proof* with three panels on October 16; the middle panel was on Women and Proof with panelists Margaret Wright, Dusa McDuff, Cathleen Morawetz, Mary Pugh, Jean Taylor, and Karen Uhlenbeck. The symposium will be reviewed in the next AWM *Newsletter*; meanwhile, AWM members might find the play particularly interesting.



Sharon Filipowski, Boeing Corporation



Kathleen Hoffman, University of Maryland, Baltimore County



# **NSF-AWM MENTORING TRAVEL GRANTS FOR WOMEN**

The objective of the NSF-AWM Mentoring Travel Grants is to help junior women to develop a long-term working and mentoring relationship with a senior mathematician. This relationship should help the junior mathematician to establish her research program and eventually receive tenure. AWM expects to award up to 5–6 grants, in amounts of up to \$4000 each. Each grant will fund travel, subsistence, and other required expenses for an untenured woman mathematician to travel to an institute or a department to do research with a specified individual for one month. Any unexpended funds may be used for further travel to work with the same individual during the following year. (Applicants for mentoring travel grants may in exceptional cases receive up to three such grants throughout their careers, possibly in successive years; each such grant would require a new proposal and would go through the usual competition.) For foreign travel, U.S. air carriers must be used (exceptions only per federal grant regulations; prior AWM approval required).

Applicants must be women holding a doctorate or equivalent experience and with a work address in the U.S. (or home address if unemployed). The applicant's research may be in any field which is funded by the Division of Mathematical Sciences of the National Science Foundation.

Each applicant should submit *five copies* of each of the following: 1) a cover letter; 2) a curriculum vita; 3) a research proposal, approximately five pages in length, which specifies why the proposed travel would be particularly beneficial; 4) a supporting letter from the proposed mentor (who must promise to be available at the time of the proposed travel and may be either a man or a woman), together with the curriculum vita of the proposed mentor; 5) an approximate budget; and 6) information about other sources of funding available to the applicant.

A final report will be required from each awardee. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians appointed by the AWM.

Send *five* complete copies of the application materials (including the cover letter) to: Mentoring Travel Grant Selection Committee, Association for Women in Mathematics, 4114 Computer & Space Sciences Building, University of Maryland, College Park, MD 20742-2461. If you have questions, contact AWM by phone (301-405-7892) or email (awm@math.umd.edu). Applications via email or fax will not be accepted. The deadline for receipt of applications is February 1, 2001.

# ATTENTION APPLIED MATHEMATICIANS AWM WORKSHOP FOR WOMEN GRADUATE STUDENTS AND RECENT PH.D.'S

supported by the Office of Naval Research, the Air Force Office of Scientific Research, and the Association for Women in Mathematics

Over the past twelve years, the Association for Women in Mathematics has held a series of workshops for women graduate students and recent Ph.D.'s in conjunction with major mathematics meetings.

WHEN: An AWM WORKSHOP is scheduled to be held July 8–10, 2001 (*pending final funding approval*), with an introductory dinner on July 8, in conjunction with the 2001 Society for Industrial and Applied Mathematics (SIAM) Annual Meeting (July 8–13, 2001) at the Town and Country Hotel in San Diego, California.

FORMAT: The workshop will consist of a poster session by graduate students and two or three minisymposia featuring selected recent Ph.D.'s, plus an informational minisymposium directed at starting a career. The graduate student poster sessions will include all areas of research, but each minisymposium for recent Ph.D.'s will have a definite focus selected from the research areas of Mathematical Biology, Modeling, Control, Optimization, Scientific Computing, and PDEs and Applications. AWM will offer funding for travel and two days subsistence for up to 20 participants. Departments are urged to help graduate students and recent Ph.D.'s obtain supplementary institutional support to attend the Workshop and the associated meeting. All mathematicians (female and male) are invited to attend the entire program.

DISCUSSION GROUP LEADERS: We also seek volunteers to lead discussion groups and to act as mentors for workshop participants. If you are interested in volunteering, please contact the AWM office.

ELIGIBILITY: To be eligible for selection and funding, graduate students must have begun work on a thesis problem. Applications should include a cover letter, a summary of their work (1–2 pages), a title of the proposed poster, a curriculum vitae, and a supporting letter of recommendation from a faculty member or research mathematician. Applications from recent Ph.D.'s should include a cover letter, a title and abstract (75 words or less) of the proposed talk, summary of their work (1–2 pages), and curriculum vitae; a letter of recommendation from a faculty member or research mathematician who knows their research is recommended, but not required. Additional letters of support are encouraged. A recent Ph.D. should have received her Ph.D. within approximately the last five years, whether or not she currently holds a postdoctoral or other academic or non-academic position. All non-U.S. citizen applicants must have a current U.S. address. All selected and funded participants are invited and strongly encouraged to attend the full AWM two-day program. Those individuals selected will be notified by the AWM Office and will need to submit a title and abstract (75 words or less) with name, affiliation, address, etc. by mid-February to SIAM for the meeting program; AWM will provide instructions when notified. For some advice on the application process see the AWM website.

Send five complete copies of the application materials (including the cover letter) to:

Workshop Selection Committee Association for Women in Mathematics 4114 Computer & Space Sciences Building University of Maryland College Park, Maryland 20742-2461 Phone: 301-405-7892 Email: awm@math.umd.edu URL: http://www.awm-math.org

APPLICATION DEADLINE: Applications must be received by **January 23, 2001**. Applications via email or fax will not be accepted.

# BOOK REVIEW

Susan A. Ambrose, Kristin L. Dunkle, Barbara B. Lazarus, Indira Nair, and Deborah A. Harkus, editors. Journeys of Women in Science and Engineering: No Universal Constants, Temple University Press, Philadelphia, 1997. 461+xxii. ISBN 1-56639-528-3 (paper), \$27.95; ISBN 1-56639-527-5 (cloth), \$84.50.

Reviewed by: Marge Murray, Book Review Editor, Department of Mathematics, Virginia Tech, Blacksburg VA 24061-0123; murray@calvin.math.vt.edu

Ever since I was a child I have had a keen interest in biography, and as an adult I have been especially interested in biographies of women. Over the past twenty years, the evolving genre of feminist biography has produced a whole host of books and articles in which the personal and professional struggles of modern women are viewed through the lens of women's historical struggle against discrimination and sexism. The very best of these biographies carefully examine the interplay between the personal and the professional, emphasizing the innovative and unconventional routes by which creative women have sought fulfillment in their public and private lives.

As Book Review Editor for this *Newsletter* over the past five years or so, I have indulged this longtime fascination of mine by regularly reviewing biographies and biographical anthologies dealing with the lives and careers of women in mathematics and the sciences. The good news is that there is now a steady supply of biographical material available for young women seeking female role models in the sciences. The bad news is that while many of these books do an acceptable job of communicating the ethnic diversity of women in the mathematical and scientific communities, other issues of diversity, such as sexual orientation or physical disability, are generally not addressed.

So I am especially delighted to recommend Journeys of Women in Science and Engineering: No Universal Constants. The spirit of this book is aptly conveyed by its subtitle. The eighty-eight profiles in this volume display the astonishing variety and diversity of women in science. The backgrounds of the book's editors — in history and anthropology, public policy, community activism, and, of course, the sciences — are correspondingly diverse. Deciding which women should be included in this collection was a daunting and time-consuming task. In the book's preface, the editors write:

Rather than emphasize traditional markers of achievement, we wanted to focus in this book on how women define success for themselves. The reader will find here stories of individual women who have won Nobel prizes and other distinctions, and many stories of women who have found satisfaction in engineering and science without becoming famous.... Choosing whom to include was not easy. We began with the idea of balancing the fields and subfields in which our women were practicing while assuring that there was sufficient diversity in their backgrounds and lifestyles. To begin collecting this group, we solicited nominations from dozens of well-known professionals, as well as from students and younger women, to see whom they might have found particularly inspiring themselves.... We received more than a thousand enthusiastic nominations, more than we could possibly use. (pp. xvi-xvii)

The profiles are arranged alphabetically by surname — a decision that was made once the editors realized that "no matter how broad our [disciplinary] categories … there were some women whose work simply would not fit into such arbitrary pigeonholes" (p. xvii). Each profile is four to ten pages long, written entirely in the first person, although substantially based upon information gathered in an interview setting. At the conclusion of each profile, there is information about the individual woman's date and place of birth, education, area of professional activity, and personal life (including details about partners, children, and even pets).

The editors clearly made an effort to display a variety of personal and professional backgrounds. For example, marine science educator Judith Vergun was employed as a fashion model for fifteen years, and her profile is accompanied by a photograph from her modeling days in the 1960s. Mathematician Bonnie Shulman graduated from Bronx High School of Science and spent the next twelve years "hitchhiking ... studying beat poetry, writing, and living on welfare as a single mom" before returning to college at the age of thirty (p. 355). In one particularly unusual cluster of profiles, computer scientists Deborah and Judy Estrin discuss their own careers and the influence of their mother, bioengineer Thelma Estrin, who is also included in this collection. Women

with disabilities are exceptionally candid in their assessment of the impact of these challenges upon their personal and professional lives. Especially noteworthy is the profile of the biologist Jane Dillehay; deaf since birth, she has risen to the position of Dean of the College of Arts and Sciences at Gallaudet University in Washington, DC. Psychiatric geneticist Judith Badner speaks frankly in her profile about her experiences growing up with achondroplastic dwarfism, and the ways in which dwarfism shaped her educational, professional, and personal choices.

Many, indeed most, books on women in the sciences tend to stress that, despite working in male-dominated fields, women scientists are in most other respects quite traditionally female. For example, in her book Women of Mathematics: The Addition of Difference, Claudia Henrion states matter-of-factly, "most women mathematicians are married, and usually happily so" (1997: p. 81). What I find most refreshing about Journeys of Women in Science and Engineering is the sheer variety of lifestyles among the women profiled. Several of the women perhaps the majority - are heterosexually married; but several of them live apart from their husbands, whether by choice or necessity. And there are numerous profiles of lesbian women working in the sciences, including biologist Anne Fausto-Sterling, noted for her work on gender and science; renowned breast cancer surgeon Dr. Susan Love; organic chemist Tami Spector; and epidemiologist Donna Speigelman.

The book includes profiles of several women in the sciences who can reasonably be considered celebrities. Dr. Susan Love has been the subject of numerous newspaper and magazine articles, especially in magazines concerned with women's health. Former Surgeon General Joycelyn Elders and Air Force Secretary Sheila Widnall gained notoriety for their work in government, while Nobel prize winning medical physicist Rosalyn Yalow and biologist and university president Jewel Plummer Cobb have gained fame in the academic community. At the same time, there are numerous profiles of young scientists just starting out in their careers, including academic scientists with eclectic interests who have not yet attained tenure.

There is considerable ethnic diversity among the interviewees as well. The African-American women featured in this volume include pioneers such as Elders and Cobb, who came of age professionally in the decades immediately following World War II; and much younger women just starting out in their careers, like civil engineer Katrina Washington, who works for the North Carolina Department of Transportation. Several women scientists of Native American, Asian, and Hispanic descent, hailing from a wide variety of backgrounds, are also included in these pages.

One of the great assets of this book is its 31-page introductory essay, "Women, Science, Engineering, and Technology through the Ages," which provides a comprehensive introduction to the history of women in science and technology. The book's concluding bibliography, while not exhaustive, provides a good starting point for further reading on gender and science. This volume also includes a "Field Index," where the women profiled are categorized by their scientific specialties. This is a wonderful idea, but the index seems to me to be significantly flawed. For example, under the heading "Mathematics," seven names are listed, all of them under the subcategory "Applied Mathematics." But only three of these women - Karen Uhlenbeck, Bonnie Shulman, and Lillian Wu - are indisputably mathematicians. The others are variously in computer science, civil engineering, and zoology! (I must confess that I have not checked the other categories in the Field Index for accuracy.)

The greatest drawback of this book is the prohibitively expensive price of the hardcover edition. On the other hand, the paperback edition is durably printed and bound, and seems to me to be a very good investment for any young woman contemplating a career in the sciences. While the profiles in this book are easily accessible to high school students, the book is probably best suited to undergraduate women as they contemplate their educational and career options in the sciences. But even well-established professionals will take courage and inspiration from the diverse lives of women in science profiled in these pages.

#### **Nobel Prize Women**

Nobel Prize Women in Science: Their Lives, Struggles, and Momentous Discoveries, by Sharon Bertsch McGrayne, is available again in paperback with a new ISBN number: 0-9702256-0-1 (Birch Tree Company, \$19.95). When Cathy Kessel reviewed the book in the AWM Newsletter in 1993, she said, "Nobel Prize Women in Science gave me a sense of the thrill readers of Perl's Math Equals or Lynn Osen's Women in *Mathematics* might experience and should inspire future generations of scientists.... McGrayne deftly balances accounts of scientific and personal life in a way that sometimes shows how strongly [the women] were inter-connected."

Nobel Prize Women in Science is a collection of biographies of 15 women who either won a Nobel Prize in science or played a critical role in a Nobel-winning project. The paperback edition adds a new chapter about the latest woman to win a science Nobel, biologist Christiane Nuesslein-Volhard.

McGrayne, former newspaper reporter and writer/ editor on physics for *Encyclopaedia Britannica*, interviewed most of the women featured in the book and 250 of their colleagues, associates, and family members.

# PIONEERS OF FLEXIBLE WORK SCHEDULES

Being both a career woman on a modified/flexible schedule and a mother isn't about having it all — it's about "having the best of it all," according to participants in Flexible Work Arrangements III, a Catalyst study which tracks 24 women who first used flexible work arrangements more than a decade ago. All of the women now hold mid- and senior-level positions and more than half have earned promotions during the past decade. Most of these women credit the availability of part-time work schedules during critical child-rearing years as the key to maintaining career momentum.

"Findings from this report suggest that even though working mothers may reduce career involvement for a period of time — with the support of the right company — career advancement does not have to get sidelined," said Marcia Brumit Kropf, vice president of Research and Information Services. While half continue to work part-time schedules, half have returned to full-time schedules. Most still work for the same company where they initiated flexible work arrangements a decade ago; they average 18 years in their organizations. All of the women hold mid- and senior-level positions with titles such as Vice President, Partner, and Chief Intellectual Property Counsel.

Most report being satisfied with the career tradeoffs

they made in order to gain better work/life balance. In fact, 20 out of 24 say they are satisfied with their non-work lives. Nearly all, part-time professionals and full-timers alike, are satisfied with their current work schedules. Most of the women (38 to 52 years old) are married with two to three children, with more than half having toddlers. The birth of their first child was the driving force behind seeking part-time work schedules for most of the women.

By the end of the 1990s, formal and informal flexibility staked its claim on the American workplace. Catalyst has found in much of its research during this time that without the ability to set one's own pace and create individual career paths, companies are at risk of losing employees they want to keep. In a 1998 Catalyst study (Women Entrepreneurs), 51% of women said a desire for flexibility was the top reason they had left their employers. In another study that same year (Two Careers, One Marriage), 83% of men and 83% of women reported they had taken advantage of flexible work arrangements offered by their companies. With men no longer at the margins of parenting, work/life balance is increasingly being seen as an "employee issue" and not just a "women's issue."

"By providing continuity in their career path during the critical child-rearing years, a flexible work schedule is a key factor in helping women achieve their life goals: a challenging career, parenthood, and community involvement," said Sheila Wellington, president of Catalyst. "If business holds on to talented women when they want flexibility, they can retain valued employees."

Catalyst recommends that companies implement formal policies and guidelines for flexible work arrangements. The commitment and involvement of top management is critical in creating a new culture in which reorganizing work and addressing the work/life balance needs of employees will be successful. By planning for and managing maternity, providing flexibility, and making high-quality, affordable child care available, companies can retain their top talent, both male and female.

This study was sponsored by McDonald's Corporation. Catalyst is a nonprofit research and advisory organization that works to advance women in business. Its dual mission is to enable professional women to achieve their maximum potential and to help employers capitalize fully on the talents of their female employees. For more information, visit www.catalystwomen.org.

# EDUCATION COLUMN

One of my great pleasures in life is that I get to be part of two mathematical communities. One is the community of research mathematicians, for whom teaching is interesting, but the source of the fascination that drives professional lives is mathematics itself. The other is the community of mathematics educators, including K–12 teachers and their teachers, for whom mathematics is interesting, but the source of the fascination that drives professional lives is teaching itself. Some topics are internal to one or the other of the communities, but others span the two and produce intense conversations in both, with very different perspectives. Me, I am fascinated by those conversations.

One topic of such conversations is algorithms. The background is as follows: for many years - many, many years — the teaching of elementary and secondary mathematics has had a format so stable as to be nearly hallowed. The Proper Format consists of the presentation of an algorithm, followed by multitudinous problems on which to practice that algorithm, followed by presentation of the next algorithm, followed by .... Word problems have been objects of dread because it is not always instantly clear how to apply the algorithm, or sometimes even (horrors!) which algorithm to apply. Those for whom this is a successful method of instruction (alternative description: those with an indestructible appetite for mathematics) have gone into research mathematics or perhaps science. High school mathematics teachers have come from the ranks of those for whom the method is at least not totally catastrophic. Elementary teachers, to an appalling extent, have come from the ranks of those sufficiently traumatized by this method to have become convinced that the algorithms are the entirety of mathematics. From this conviction the logical deduction is that the mandate of a teacher is to instruct students in the absorption and manipulation of algorithms, orchestrated by some mysterious motivation which the student can clearly do without because the teacher has always done without it.

Lone voices have sporadically protested this procedure. In the past few decades the protest has become much more general and coherent, and been backed by serious, solid research. The publication and widespread acceptance of the NCTM *Standards* (expanded version: the *Curriculum and Evaluation Standards for School Mathematics*, published in 1989 by the National Council of Teachers of Mathematics) brought the issue to the forefront. In the ensuing period more and more voices have joined the conversation, with many insights from a wide variety of perspectives. Also with some misapprehensions, some concerns and a great deal of flat-out bewilderment. This column was inspired by recent conversations exhibiting all four of the above characteristics. As should by now be clear, I make no pretense of presenting any sort of resolution. All I offer is another voice in the conversation, with the slightly odd feature of internal two-part harmony (or sometimes dissonance!)

I'll start with what I hear from and between my colleagues in the mathematical sciences. At the phrase "not teach by algorithms" the mental image instantly forms of a class of undergraduates adding by counting on their fingers. This is not a pleasant image, and must be supplanted before any progress can be made. An initial step towards defusing the situation comes easily, because most of us teach international students. Whereas American schools, to an extent which is amazing when you stop and think about it, are uniform in their teaching of the algorithms for each of the basic operations, close observation of someone from another continent carrying out a subtraction problem frequently reveals some funny little subsidiary numbers appearing in places where none of ours do, and it doesn't even take close observation to realize that long division often looks wildly different. It's hard to argue that our international graduate students, much less international colleagues, have been hampered by the lack of The American Algorithm.

That's the first step. After that comes the stickier question: "Yes, but why not give them some algorithm so they can be efficient?" For me the reply resides in a series of experiences involving addition. One comes from the Developing Mathematical Ideas seminars, where participating teachers are asked to put down their pencils and add 27 and 18 in their heads. They are then asked to say just how they came up with their answers. A huge variety of tactics invariably emerge, frequently prefaced by "I'm afraid I didn't do it The Right Way —

by Column Editor Ginger Warfield, Department of Mathematics, University of Washington, Seattle, WA 98195; warfield@math.washington.edu

#### AWM

I started off by adding the 20 and the 10." (That's at the first seminar. By the end the apologies come from the ones who did use the standard algorithm — but that's another story!) Left to her own devices, a first or second grader will come up with one of those tactics, usually adding the existing tens first, and then inventing a method for keeping track of the tens that emerge from adding the units.

Neat, but that still doesn't answer the "Why not ...?" question: That one has both a general answer and a specific one which is attached to the previous situation. The general one has to do with an aspect of the studentteacher relationship to which the field of Didactique assigns the title of the didactical contract. Only an exceptionally intellectually feisty child is immune to the impact of privileged information: a student will accept an idea that comes from the teacher as one which must be used even at the cost of abandoning an idea that he actually understands. A non-understood algorithm, no matter how slick, is a poor substitute for an understood one even if that one is a little crude. On a more specific level, we return to the issue of multi-digit addition. Clearly, before tackling this topic children must have a grasp of place value. A child who has that grasp can, as I said above, invent a method for carrying out addition. If instead, or thereafter, she is taught that the way to add is first to add the numbers in the right hand column and write a little 1 above the 2 in 27, etc., what is the consequence? Frequently, documentably, a total disappearance of the concept of place value, lost in the struggle to figure out whether it's the little 1 or the little 5 that goes above the ... now where was it supposed to go?

All right, then, suppose we accept that the learning of mathematics is not well served by the presentation of a sequence of neatly packaged algorithms. What then? That's where the tenor of the conversation becomes quite different in my two communities. Amongst university mathematicians the reaction, accompanied by a skeptically cocked eyebrow, is "If they're not given algorithms, what are they supposed to do? Suppose their invented algorithms are crude, or insufficiently general, or even false — what will become of them?" Amongst elementary teachers the reaction has far more anguished overtones: "If I'm not supposed to hand them algorithms, what am I to do? What is it okay to tell them? How do I know if they are on the right track? Suppose I mess up — what will become of them?"

Those are legitimate anxieties, both of them, and

predictably enough we have now reached the point where a comprehensive answer is not merely implausible, but impossible. So I'm not about to attempt one. But I do, of course, have my own take on the matter, and that is what you are about to get — with apologies if a few bits of soap box seem to be emerging beneath my feet.

It seems to me that the fundamental, key, indispensable element to resolving this is a belief by all of us, from pre-kindergarten teachers through university faculty, that children - ordinary, non-genius, meet-them-on-thestreet-corner children — have both the desire and the capacity to make sense of their world, and in particular of mathematics when it is part of their world. With that belief, the job of the teacher is to foster the desire and nourish the capacity, and not to be the one who supplies the sense. That means providing scaffolding for learning (which is not simple to do) and support for carrying out that learning, and yes! telling a student something when she herself has expressed a need to know it. It also means hanging back and letting a student muddle around, groping his way towards an intellectual idea which the teacher can see so clearly that it is painful not to simply pick him up and plunk him down in front of it, because the muddling time is essential to the ownership of the idea. And, if the idea in question takes the form of some sort of algorithm, it means recognizing when the student needs the chance to celebrate his idea by practicing a bit with it.

That's a huge demand to make of teachers, especially those who, as I said above, have been traumatized out of believing they can do anything other than reproduce their own unpleasant mathematical past. Fortunately, there are now teaching materials out (notably some of the NSF-sponsored ones) which support that kind of teaching. In some areas teachers also are supported through very strong professional development along the lines of the Developing Mathematical Ideas seminars. Still, with all that, the demands remain high enough so that I would wince at pushing them if it were not for two things: (1) teachers are in the profession because they want to teach well, and though they may groan a bit, they can and do appreciate something that unambiguously improves their students' learning, and (2) although the process of learning to develop students' mathematical ideas is far from speedy, one of the rewards begins very early on: tuning in to student thinking produces absolutely fascinating results.

I seem to have concentrated on the anguished K-12 overtones, so I shall finish by returning to the professorial cocked eyebrow. "So you're telling me not to expect the techniques and algorithms I have always felt I should be able to require. What then are you offering me in recompense?" Fair enough question. Let me preface my reply by pointing out that we are not talking about the class of 2004. The specific changes I have been focusing on need to take place at the elementary level, preferably starting in kindergarten at the latest. Apply your own addition algorithm to figure the timing at the college level. My answer to the question itself would be that what we should see will be students with the perspicacity to recognize when they are lacking an algorithm, the gumption to set out to find one, and the perseverance to stick with the search until it's found. I don't think many of us would question that this will be a net gain.

# TRENDS IN EDUCATIONAL EQUITY OF GIRLS & WOMEN

"Federal Study Finds Gains in Gender Equity" by Darcia Harris Bowman appeared in the May 3, 2000 issue of *Education Week*. Visit www.edweek.com to see this article. It says:

Gender gaps in education "have in most cases been eliminated and, in others, have significantly decreased," according to "Trends in Educational Equity of Girls and Women," a report requested by Congress and released April 25 without fanfare by the National Center for Education Statistics.

One interesting statistic is that girls take more Advanced Placement examinations than boys, perhaps not surprising in view of the fact that the majority of college students have been women for two decades.

The article also discusses the study in the context of the AAUW report on how schools shortchange girls.

The entire report is on the web at nces.ed.gov. Below appears the conclusion of the document.

#### Conclusion

Various indicators have been used here to examine the extent to which females and males have access to similar educational opportunities, take advantage of those opportunities in the same way, and have similar educational outcomes. By most of these measures, females are doing at least as well as males. Girls and boys begin school with similar pre-school and early literacy participation experiences. In the early elementary years, girls are less likely than boys to repeat grades and seem to have fewer problems with schoolwork and behavior. Over time and throughout their school years, female students have consistently outperformed their male peers in the crucial areas of reading and writing, and the gap between the genders remains large.

Females have tended to lag behind males in science and mathematics, especially as they get older. By eighth grade, females are less likely than males to say they like mathematics and science and less likely to say they are good at these subjects. This happens despite the fact that young men and women take equally challenging mathematics and science coursework in high school (with the exception of physics, which females are slightly less likely than males to take).

Since the early 1970s, women have made dramatic gains in postsecondary education in terms of enrollment and attainment. Female high school seniors tend to have higher educational aspirations than their male peers and are more likely to enroll in college immediately after graduating from high school. Women are also more likely than men to earn a bachelor's degree within 5 years. The majority of all undergraduates are women, and this has been true for two decades.

Gender differences in college majors persist, however, with women still concentrated in relatively lower paying fields like education and men more likely than women to earn degrees in engineering, physics, and computer science. Women are still underrepresented in professional schools, but have made substantial progress. In terms of labor market outcomes, the findings are mixed, and depend on factors beyond the reach of the education system. Women ages 25-34 are less likely than their male counterparts to be employed, but it is unknown to what extent this is by choice. The gap between males and females in employment rates has narrowed over time. In addition, women with higher levels of educational attainment are employed at rates more similar to those of men than are women with lower levels of attainment. Women tend to earn less than men with similar educational attainment, but this may partly reflect women's patterns of labor market participation and taking certain kinds of jobs.

# AAAS MEETING

The 2001 Annual Meeting of the American Association for the Advancement of Science, February 15-20 in San Francisco, will feature many outstanding expository talks by prominent mathematicians. These include the following three-hour symposia (and organizers) sponsored by Section A (Mathematics) of the AAAS: Beauty and the Beast: Realizations of the Art in Mathematics (Michael Field), Mathematics of the Visual Cortex (Jack Cowan), The Nature and Origins of Mathematical Thinking (Keith Devlin), Mathematical Aspects of Intellectual Property Management on the Internet (Matthew Franklin), Applications of Mathematics to Problems in Medicine (Parros M. Pardalos), The Role of Mathematics in Pricing and Hedging Financial Assets (Philip Protter), and The Mathematics of Congressional and Other Apportionments (Donald G. Saari).

Other symposia that will be of interest to the mathematical community include: From Juggling and Magic to Combinatorics; Understanding Music with Statistical Methods; Designing, Implementing, and Assessing Active Learning College Science and Mathematics; Mathematical Statistics in Natural Language Analysis; Mathematical and Computational Properties of Universal Grammar under Optimality Theory; The Sea of Data and How to Manage It; Science and Mathematics Education: California since the End of Affirmative Action; and Journey beyond TIMSS: Rethinking Professional Development. These symposia are only a few of the 150 or so AAAS program offerings in the physical, life, social, and biological sciences. For program details, see the October 20, 2000 issue of *Science*.

AAAS annual meetings are the showcases of American science, and they deserve greater participation by mathematicians and mathematics educators. In presenting mathematics-related themes to the AAAS Program Committee, I have found the committee to be genuinely interested in offering symposia on mathematical topics of current interest. Thus, Section A's Committee is seeking organizers and speakers who can present substantial new material in an accessible manner to a large scientific audience. Toward this end, I invite you to attend our Section A Committee business meeting, 7:30– 10:30 p.m. Friday, February 16, 2001 in Mason Room B

Warren Page, Secretary of Section A of the AAAS

of the San Francisco Hilton. I invite you also to send me, and to encourage your colleagues to send me, symposium proposals for future AAAS annual meetings.

The AAAS wishes to acknowledge AMS for its generous support.

# POSTER SESSION

Project NExT and the Young Mathematician's Network invite submissions of abstracts for a poster session to be held January 11, 2001 from 2:00 to 4:00 P.M. at the Joint Mathematics Meetings in New Orleans. The poster size will be 48" by 36"; it is best to have the posters 36" high. Posters and materials for posting pages on the posters will be available on-site. We expect to accept forty posters from different areas within the mathematical sciences. Should you require a special connection for a computer hook-up, please let us know and we will check to see if it may be accommodated.

If you are interested in participating, submit copies of your abstract to: Professor Kenneth A. Ross, Division of Science and Mathematics, University of the Virgin Islands, St. Thomas, VI 00802; home: 340-776-3161; office: 340-693-1332; fax: 340-693-1245 (label clearly for "Kenneth Ross"); email: ross@math.uoregon.edu and Professor Kevin Charlwood, Department of Mathematics & Statistics, Morgan Hall, Washburn University, Topeka, KS 66621; phone: 785-231-1010 ext. 1499; fax: 785-231-1089 (label clearly for "Kevin Charlwood"); email: zzcharlw@washburn.edu.

Our poster sessions at the San Diego, Baltimore, San Antonio and Washington, DC Meetings were great successes. Visitors to the session each year were numerous and included prospective employers. This session provides an excellent way to showcase one's work in a relaxed, informal environment.

The deadline for final consideration is **December 10**, **2000**. Preference will be given to those who are three or fewer years beyond their Ph.D.; please include with your submission when and where you received your Ph.D., or indicate when you expect to receive it. Please submit your abstract via email, not an attachment. If it includes mathematical formulas, please submit it in basic LaTeX or TeX format.

# SONIA KOVALEVSKY HIGH SCHOOL MATHEMATICS DAYS

The Sonia Kovalevsky High School Mathematics Days below were funded by a grant awarded to AWM by Coppin State University, Microsoft Corporation, and the National Security Agency. Hearty thanks to all the funding agencies!

#### Syracuse University

The Mathematics Department at Syracuse University sponsored a Sonia Kovalevsky Festival that was held on October 23, 1999. Its theme was "Mathematics in the World around Us." It was attended by 52 girls and 17 teachers.

The first half of the Festival was built around six workshops run by women scientists. Each girl chose one in which to participate. One girl commented that the workshop on "Brain Cancer Incidence - Can Statistics Reveal Its Link to Aspertame?" led by Hyune-Ju Kim, professor of mathematics, was the "best part of the whole day!" The "topic was interesting and I learned lots." Another student who participated in the workshop "Dinosaur Extinctions," run by Cathryn Newton, professor earth sciences, said "I thought it was good. I had fun." Other workshops included "Symmetry in Chemistry" run by Tess Freedman, professor of chemistry; "Mathematical Pictures in Java" led by Dr. Nancy McCracken of the Northeast Parallel Architectures Center (NPAC), and "Mad Cows and Cafeteria Food" led by Professor Mary Rogers, Department of Medicine. Dr. Jeff Meyer, Department of Mathematics, ran a workshop for the teachers on "Numbers and Geometry." Professors Kim, Newton and Freedman and Drs. McCracken and Meyer are at Syracuse University, while Professor Rogers is at the nearby SUNY Health Science Center.

After a buffet lunch, the participants saw two wonderful mathematical videos. One, the *Shape of Space*, was produced by the Geometry Center, while the other, *Outside In*, about Stephen Smale's work on turning the sphere inside out, is distributed by AK Peters. One girl said of the videos, "I loved them! They really made me *think*."

The rest of the afternoon featured a session in which participants from each workshop explained to the group what their workshop was about and what they had done. That was followed by a panel discussion by the workshop leaders in which they talked about their own experiences in becoming and being scientists and answered questions from the audience. One participant wrote that the panel discussion "was great. I've learned a lot about the people and what their careers involve — what they do and how they got there."

#### University of Alaska Fairbanks

The Third (hopefully annual!) University of Alaska Sonia Kovalevsky High School Mathematics Day was scheduled for fall, 1999, but we were unable to hold the event in the fall due to unforeseen circumstances. We requested permission to hold the event in the spring in conjunction with UAF Mathematics Awareness Week (MAW), and the results were so thrilling that we will be offering SK Days as a part of UAF MAW activities in the future. We ran our event a little bit differently this year and split the activities over two days to enable us to share resources with a Middle School Girls Mathematics Day which was funded by the Tensor Foundation and MAA. We will continue this cooperative venture in the future, as the benefits to all participants were easy to see.

UAF MAW has been actively celebrated and involves the community K-12 students in a week of exciting activities. Previous MAW activities have included competitions (elementary school poster, middle school mathematics, high school mathematics, high school programming), mathematical modeling team presentations, and colloquium speakers, all culminating in a community awards ceremony. The MAW events have always had an excellent turnout, but our previous SK Days have not always fared as well as we had hoped. We decided to add two new events to MAW, High School SK Day and a Middle School Girls Mathematics Day with a component for the high school girls also. We are confident that this helped the enrollment in two ways. First there was one registration form for all of the MAW events. This increased the circulation of the registration forms. Secondly, the fact that all of the events were during the same week allowed us to use each event to remind students about other events. In addition, the community and schoolteachers were able to announce activities during a time when the community "minds" were tuned in to mathematics. Each of the area high

Kara L. Nance, UAF

school teachers received a packet of information about the activities and collected forms. In addition, each girl who participated last year was contacted (with the exception of graduates).

The week's events started off with the High School SK Day. The event was held on Monday because it was day off from school. The organization of the event went smoothly. There were 30 volunteers who were willing to do anything to help make the event a success. Like last year, we did not request the girls to have completed particular math courses. Consultations with area high school teachers had confirmed that the girls who could most benefit from this program were those who were just starting out in high school math. The mathematical range of the registrants was from pre-algebra to calculus III.

We alternated small and large group presentations as we had done very successfully in the past. We broke every hour to introduce a new activity, and the girls were free to choose either changing activities or continuing with the current one. Most switched at least once during the day, and all thought this was a great way to share activities and learn throughout the day. Activity opportunities included units on fractals, tessellations, inversions, and mathematical puzzle creation and problemsolving. The major activity this year was a very detailed model of a fish ecosystem. I will describe this activity in detail because it turned out to be a great activity with lots of good discussion.

Starting long before the event, Professor Jonathan Wiens of the UAF Department of Mathematical Sciences generated a mathematical model of a system of seven "regions" including rivers and lakes. He then "tagged" fish in each river branch and/or lake with a particular color. He ran the model for "five years" to determine the state of fish in the river system five years later. Once we had the output of the model, the real work began. We spent days counting and "tagging" goldfish crackers with glitter glue according to the color of the region in which they were "tagged." The "tagged" fish were then put in the correct ending region along with all of the untagged fish that the model determined should be in that region. Overall we tagged 800 of the 4200 fish.

The activity for the girls consisted of four phases. Phase I was done individually. Each girl was assigned a region and went to the "Fish Warden" to obtain a random sample of 100 fish from her region. She then counted the total number of fish of each color and answered a series of questions on a worksheet about her region. Phase II was done in groups with all of the girls who analyzed fish from a particular region grouped together. The girls in each group compared their results and combined them together. Again they filled out a worksheet based on the combined information; then they discussed their findings. Phase III required combining representatives from each region into groups so that they could fill out another worksheet. Based on the contents in various regions, the girls attempted to reconstruct the system. For example if they measured the "blue tagged" region and there were a lot of "green tagged" fish in it and very few "red tagged" fish, then it was reasonable to assume that the green and blue regions were adjacent to each other. The output of this phase was a proposed map of the regions. Phase IV had a representative from each group present their final map along with a brief discussion of how they built the map. We then compared the results from the groups with the original model we started with. It was a long activity and lots of fun. We saved the fish and materials so we can reuse them. Detailed descriptions and instructions for this activity using Professor Wien's model may be obtained via email (ffkln@uaf.edu).

Before leaving, the girls were asked to fill out survey forms. On one form, the name was optional, and on the other we asked for their names. Most felt comfortable enough to put their names on both sheets. They were overwhelmingly supportive and enthusiastic. The girls traded their exit surveys for prizes (mathematical puzzles and games) at the end of the day. We had T-shirts with the theme "got math?" this year. The back of the shirt had a Klein bottle full of milk. Once again, the T-shirt proved a great way to advertise for future programs.

As mentioned earlier, we split SK Day into two days. At the end of Monday's activities (after reminding the girls about the mathematics and programming competitions later in the week), we invited them to participate in activities associated with the Middle School Girls Mathematics Day which was scheduled for Friday. The SK Day participants were primarily mentors and enthusiastic role models on Friday. We found this to be beneficial to both the middle school and high school girls. (Both groups did the fish activity!)

This summary cannot convey the enthusiasm of the girls and the bonding that took place. We took lots of pictures with our digital camera this year; a website of photographs is being built and should be online soon. This is the third year we have received funds from AWM to run this event. Each year we asked for less financial assistance, and next year we will be trying it without assistance from AWM so that more money will be available for other schools. We have been trying to build a workbook of activities. If you have any activities to add to the workbook, please forward them to me. If you need activity ideas, please contact me with details about the types of activities and the mathematical background of the target audience, and I will try to help. Because of the demographics of our area and the population we decided to focus on, most of our activities are targeted toward those with less experience in mathematics who need more encouragement rather than those who already excel and are directed into continuing their study of mathematics.

I would like to thank AWM for supporting us these past three years, and I will send in a report next year to let you know how we did "on our own." I would like to thank publicly Professor Jonathan Wiens and Professor Jill Faudree (both of UAF) for their assistance, enthusiasm, and dedication to these activities. The success of the programs (and all of Mathematics Awareness Week ) is due largely to their contributions.

# **OPPORTUNITIES**

#### **Research Experiences for Undergraduates**

The NSF makes possible a number of opportunities for undergraduates to join research projects each summer. Students experience first-hand how basic research is carried out. The principal support of such activities is through the Research Experiences for Undergraduates Program. For more information, see www.nsf.gov/home/ crssprgm/reu. As usual, our President-Elect Suzanne Lenhart will direct an REU at University of Tennessee, Knoxville.

# SONIA KOVALEVSKY HIGH SCHOOL MATHEMATICS DAYS

Through grants from Coppin State University, Microsoft Corporation, the National Security Agency (NSA) and Sandia National Laboratories, the Association for Women in Mathematics expects to support Sonia Kovalevsky High School Mathematics Days at colleges and universities throughout the country. Sonia Kovalevsky Days have been organized by AWM and institutions around the country since 1985, when AWM sponsored a symposium on Sonia Kovalevsky. They consist of a program of workshops, talks, and problem-solving competitions for high school women students and their teachers, both women and men. The purposes are to encourage young women to continue their study of mathematics, to assist them with the sometimes difficult transition between high school and college mathematics, to assist the teachers of women mathematics students, and to encourage colleges and universities to develop more extensive cooperation with high schools in their area.

AWM anticipates awarding at least 10 to 15 grants of up to \$3,000 each to universities and colleges; more grants may be awarded if additional funds become available. Historically Black Institutions and women's colleges are particularly encouraged to apply. Programs targeted towards inner city or rural high schools are especially welcomed. If selected, institutions will receive an information packet consisting of model schedules of activities, a check list for the sorts of arrangements that need to be made, suggestions for securing additional funding and for obtaining prizes to be awarded to contest winners, recruitment and publicity material to be adapted for local use, lists of possible workshop topics for students and teachers, model problem solving contest material, and guidelines for follow-up activities and evaluation.

Applications, not to exceed five pages, should include: a) tentative plans for activities, including specific speakers to the extent known; b) qualifications of the persons to be in charge; c) plans for recruitment, including the securing of diversity among participants; d) itemized budget; e) local resources in support of the project, if any; and f) tentative follow-up and evaluation plans. The decision on funding will be made late February to early March. The high school days are to be held in Spring 2001 or Fall 2001. If selected, a report of the event along with receipts (originals or copies) for reimbursement must be submitted to AWM within 30 days of the event date or by December 1, 2001, whichever comes first. Reimbursements will be made in one disbursement; no funds can be disbursed prior to the event date.

Send *five* complete copies of the application materials to: Sonia Kovalevsky Days Selection Committee, Association for Women in Mathematics, 4114 Computer & Space Sciences Building, University of Maryland, College Park, Maryland 20742-2461. For further information: phone, 301-405-7892; email, awm@math.umd.edu; URL: http://www.awm-math.org. Applications must be received by February 5, 2001; applications via e-mail or fax will not be accepted.

## "Staying Active in Research"

"Staying Active in Research," a YMN/Project NExT Panel Discussion organized by J. Lyn Miller and Sharon Frechette, will be held Wednesday, January 10, 4–5:30 P.M. at the Joint Meetings. Many young mathematicians, in both academia and industry, struggle to make a place for continued research activity in their lives during the first few years out of graduate school. If you're lucky enough to have a position at a large, heavily researchoriented university or company, you'll have a lot of support in this endeavor. However, if your career path leads to a school or company with different priorities, it can be much harder to stay active and interested in research and scholarly activity.

Our panelists will share their advice and experiences in balancing research requirements and desires with the professional (and personal) issues that confront us at the beginning of our careers. The organizers hope to represent a broad cross-section of the profession, including young faculty at private and public institutions (of various sizes), mathematicians in geographically isolated locations, and those in companies with greater emphasis on involvement in management and other non-researchoriented activities.

#### "Balancing Career and Family"

An MAA-YMN Panel Discussion organized by John Kuchenbrod and Heather Ames Lewis will be held Friday, January 12, 5–6:30 P.M. at the Joint Meetings. This panel will address the challenges that mathematicians face in maintaining both their academic and non-academic lives. Panelists selected will represent a wide variety of "families," from significant others and families of two to those including older children.

# Young Mathematicians' Network Town Meeting

The YMN Town Meeting organized by Dov Chelst will be held Wednesday, January 10, 7:15–8:15 P.M., at the Joint Meetings. The Town Meeting is an open forum for discussing the concerns of young mathematicians and an opportunity to share wisdom, experience, and resources. The Meeting also serves as a springboard for ideas for future YMN activities and CoYM newsletter discussions. Discussion topics have included job searching in academia and industry, building a portfolio, collaboration, interdisciplinary work, technology, and more — running the spectrum from getting into graduate school to planning for retirement.

#### **AMS** Centennial Fellowships

The AMS Centennial Research Fellowship Program makes awards annually to outstanding mathematicians to help further their careers in research. Applicants must be citizens or permanent residents of a country in North America, have held their doctoral degrees for at least two years at the time of the award, not have permanent tenure, and have held less than two years of research support at the time of the award. Recipients may not hold the Centennial Fellowship concurrently with other research fellowships, may not use the stipend solely to reduce teaching at the home institution, and are expected to spend some of the fellowship period at another institution that has a stimulating research environment suited to the candidate's research development. The stipend for fellowships awarded for 2001-2002 is expected to be approximately \$39,000, with an additional expense allowance of about \$1,600.

Applications should include a short research plan describing both an outline of the research to be pursued and a program for using the fellowship, including institutions at which it will be used and reasons for the choices. The selection committee will base its decision on both the research potential of the applicant, based upon track record and letters of recommendation, and the quality and feasibility of the research plan.

The deadline for receipt of applications is **December 1**, **2000**. For further information and application forms, see www.ams.org/employment/.

#### **AAUW Grants**

Outstanding women returning to graduate level education are invited to apply for Career Development Grants from the AAUW Educational Foundation. These grants support women currently holding a bachelor's degree who are preparing to advance their careers, change careers, or re-enter the workforce. Special consideration is given to AAUW members, women of color, and women pursuing their first advanced degree or credentials in nontraditional fields. The application postmark deadline is **December 15, 2000**. For applications visit www.aauw.org/3000/fdnfelgra/ career.html. Eleanor Roosevelt Teacher Fellowships provide K– 12 public school teachers with up to \$9000 for professional development and projects designed to advance girls' interest in math, science, and/or technology. The application postmark deadline is **January 10, 2001**. For applications visit www.aauw.org/ 3000/ertfapp.html.

Community Action Grants support innovative community-based programs designed to promote education and equity for women and girls. Individual women including teachers or community activitists, as well as AAUW branches, AAUW states, and community-based nonprofit organizations, are eligible to apply. The application postmark deadline is **February 1, 2001**. For applications visit www.aauw.org/3000/ cagapp.html.

#### How to Recruit Women to Tech and IT Classes

National IWITTS's 10th National Futures: Train-the-Trainer Workshop, with a special emphasis on recruiting women to IT classes, will be held February 22–23, 2001 in the San Francisco Bay Area. Learn how to recruit women to high-skill, high-wage careers. Learn how to train teachers and counselors to help female students withstand negative peer pressure. Both high school and community college recruitment and retention strategies will be covered. See www.iwitts.com for more information.

# **BRIEF NOTES**

An article by AWM member Annalisa Crannell, assistant professor of mathematics at Franklin & Marshall College, appeared in the January-February 1998 issue of *Academe*, the AAUP magazine. Titled "Graduate Students, Young Faculty, and Temporary Positions: A Tangled Issue," it explores a situation which concerns many of us. It ends:

I do not deny that non-tenure-track positions can be beneficial to institutions and even on occasion to instructors; nor do I deny that there are those who support the use of adjuncts and shortterm positions. But talking with job candidates, mentoring young faculty, working with graduate advisers, speaking at national meetings, and working on committees has forced me to see this tangled issue as one that is more dark than light. I've concluded that the pervasive use of these positions endangers the careers of our next generation and has grown beyond its limited ability to further academic goals.

Women and Mathematics Education (WME) is an affiliate of the National Council of Teachers of Mathematics (NCTM). The association's general purpose is to promote the mathematics education of girls and women. A Selected Bibliography for Gender Equity in Mathematics and Technology Resources Published in 1990-1996 was compiled by June Mark in collaboration with several WME members. Because it also includes a section called "The Classics," a much wider range of dates is covered than the title indicates. It includes lists of journal articles, papers, books, chapters in books, etc. For more information on WME, contact Sally Lipsey (former long-time AWM Education Editor) at sallyirene@worldnet.att.net.

Hedy Lamarr, sultry movie star of the 30s and 40s, died January 19, 2000; she was born in Austria on November 9, 1913. Her screen career is much better known than the fact that she was a co-inventor of a frequency-hopping technique now known as spread spectrum. She described how she came up with the idea in her 1992 book *Feminine Ingenuity*. For more information, search www.womenCONNECT.com.

A Jimmy Buffett fan has sent me the lyrics of "Math Suks." Along with the reiteration of the title several times in the chorus, it includes these interesting comments as part of one of the verses: "Parents fighting with their children, and the Congress can't agree/Teachers and their students are all jousting constantly." Maybe I'm reading too much into it, but it reminds me of the math standards and the Congressional battle over history standards ... all this in a popular song?

The Morehead Electronic Journal of Applications in Mathematics (MEJAM), an interdisciplinary journal sponsored by Morehead State University, publishes the work of undergraduate students. The goal of MEJAM is to provide a refereed outlet for undergraduates to publish quality papers and see the results quickly. MEJAM accepts papers which are outside the realm of the typical

## AWM

undergraduate curriculum and which emphasize the applications of mathematics while maintaining significant mathematical interest. Papers may be historical, expository, or completely original in nature but must adhere to strict academic standards and must emphasize some application of mathematics. Papers from all disciplines will be considered for publication. For more information see www.morehead-st.edu/colleges/science/ math/mejam/.

The Spring 2000 issue of *AWIS Magazine* is focused on the NSF on its 50<sup>th</sup> anniversary. "NSF's Rita Colwell Leads the Way" by Grace E. Gray, Ph.D., is an interview with the first woman director of the NSF. She describes her work with the bacterium that causes cholera. Although her work was initially ridiculed, her hypothesis is now regarded as fact. Here is an anecdote from the article:

Another memory that will never leave me was being called to the principal's office when I was in the sixth grade. I was one of these kids who never wanted to do anything wrong, and to be called to the principal's office was not a good sign. When I got there, the principal, a very nice woman, sat me down, shook her finger at me, and said, "You have a responsibility!" I thought, "Oh dear, what have I done?" She said, "Well, we've just got the scores back [from an exam given to all sixth graders prior to going into junior high school] and you've scored the highest grade that we've ever had in this school." ... She said, "You have to go to college!" I said, "Yes ma'am." I was delighted to escape knowing that I hadn't done anything wrong and that I had a new responsibility.

"Women and Mathematics: Avenues of Connection" by Charlene Morrow, Mount Holyoke College, appeared in the 1996 special issue on Gender and Mathematics: Multiple Voices of *Focus: On Learning Problems in Mathematics*. The theoretical framework for understanding women's educational experiences presented in *Women's Ways of Knowing* (Belenky, Clinchy, Goldberger, and Tarule, 1986) is explored in the context of SummerMath, Mount Holyoke, a mathematics program run for young women in high school. The article concludes:

As young women engage in classrooms based on the principles discussed above, they become much more able problem solvers, ready to approach problems flexibly, confidently, and persistently. They become independent, rather than isolated problem solvers. They retain a sense of authority within themselves, but are able to effectively communicate with others about mathematics. In these classrooms, females can find greater harmony in being a mathematics student and being female.

Overhead recently between two young women graduate students: one confided to the other that she and her husband were trying to have a child; the second reacted in a delighted way, talked about how great that sounded, and said "I'd like that too; it sounds so wonderful; children are so fascinating." I wished I had my printout of the November 19, 1999 issue of *Concerns of Young Mathematicians*, the electronic digest of the Young Mathematics Network, handy to show them. In an interesting article by Cheri Boyd of Nazareth College on "Balancing Career and Family," the author talks in a strikingly honest way about what it is like to deal with raising small children in your career as a young academic. Boyd would agree that "children are so fascinating." She says:

Which leads me to my most heartfelt comment. You will be a different person after you have a child. You can not possibly be prepared for how much you will love this child, how you will want to simply just stare at this child and watch him or her learn and grow for hours and days and the world will fall away.

On the other hand, she is a firm advocate of getting some idea what is in store for you:

Spend extended visits with families with small children. Be sure that children will be a welcome addition to your lives. You must both truly be selfless for the most part, give 100% to your children, 100% to your career requirements, and then try to fit eating, sleeping, and small amounts of time for yourselves and each other in somehow.

Definitely advice from one who's been there.

The February 2000 issue of the same newsletter contains a summary of "Finding your second job," a YMN/Project NexT panel discussion held at the Joint Meetings, Washington, DC, January 2000. There was a lot of interaction among the panelists and the 60 or so in attendance at the panel. See the archive at www.youngmath.org for some thoughtful advice. The Commission on the Advancement of Women and Minorities in Science, Engineering, and Technology Development has released its report "Land of Plenty: Diversity as America's Competitive Edge in Science, Engineering and Technology." The full report and a brochure containing an executive summary may be found at www.nsf.gov/od/cawmset. It states:

Today's U.S. economy depends more than ever on the talents and knowledge of skilled, high-tech workers. To sustain America's preeminence, we must take dramatic steps to change the way we develop our work force. An increasingly large proportion of the work force consists of women, underrepresented minorities, and persons with disabilities—groups not well represented in the SET pipeline. Unless the SET labor market becomes more representative of the work force as a whole, the nation may well face severe shortages in SET workers, such as are already seen in many computer-related occupations....

More Americans can and will fill SET jobs if barriers are removed that impede their access to highquality education in science, mathematics, and engineering. The Commission's recommendations focus on steps that will permanently: broaden accessibility to quality SET precollege education for all Americans, particularly underrepresented minorities (African Americans, Hispanics, and American Indians); increase the number of women, underrepresented minorities, and persons with disabilities who are well prepared to enter the SET labor market; and increase the retention and reentry of women, underrepresented minorities, and persons with disabilities in SET education and the SET work force.

The Technology Subcommittee of the House Committee on Science held a hearing following the press conference on the report. Testimony from that hearing may be found at www.house.gov/science/106\_hearing. htm#Technology.

Groan! Light Is Reported To Travel Faster Than Light: The real news in physics was that the tau neutrino, the last of the fermions predicted by the Standard Model, had been discovered at Fermilab. But front page headlines across the country were proclaiming, "The Speed of Light Has Been Broken." It's now going to be impossible to characterize any claim as physically impossible without people scoffing: "that's what they said about the speed of light." … Charles Bennett at IBM Watson points out that this is little more than a confused rehash of an old story, where the peak of the wave packet leaving the "superluminal" medium is causally related to just the leading edge of the wave packet entering the medium.

[The preceding paragraph is reprinted from "What's New" for July 21, 2000 by Robert L. Park of the American Physical Society.]





# MATHEMATICAL CHALLENGES OF THE 21<sup>ST</sup> CENTURY





Left: Carolyn Mahoney (California State University, San Marcos) delivering "Demographic trends and challenges for mathematics" at the AWM event. Above: Jean Taylor (AWM President, Rutgers University) introducing Karen Uhlenbeck. Jean delivered a plenary address, "Mathematics and materials science." Below: Karen Uhlenbeck (University of Texas) delivering her plenary address "Geometric partial differential equations: From Hilbert's 23<sup>rd</sup> Problem'to nonlinear waves."



## ADVERTISEMENTS



# **University of Idaho – Department of Mathematics**

# VACANCY ANNOUNCEMENT

Title of Position:	Professor and Chair
Starting Date:	Preferably July 1, 2001, but no later than August 20, 2001
Responsibilities/Duties:	Lead the faculty in managing the department's research, instructional, and service programs.

## **Qualifications:**

**Required**: Ph.D. in mathematics, research credentials, and teaching experience that all together establish a record of university and professional service appropriate for a tenured appointment at the rank of professor or associate professor.

**Desired/Preferred:** Strong commitment to supporting and improving the department's research programs, fostering external grant proposals, promoting growth in the undergraduate and graduate programs, promoting growth in teacher education, developing interdisciplinary research initiatives, furthering excellence in teaching and instructional initiatives including a demonstrable interest in continuing the development of the Polya Mathematics Center (detailed description of the Polya Math Center is at www.its.uidaho.edu/polya).

**Contact/Application Procedure**: Send vita and four letters of reference or the addresses of people who have agreed to provide recommendations to:

James Calvert, Chair	Other media	
P.O. Box 441103	Email:	math@uidaho.edu
Mathematics Department	Voice:	(208) 885-6742
University of Idaho	Fax:	(208) 885-5843
Moscow, Idaho 83844-1103	General:	www.uidaho.edu/LS/Math
	Chair position: www.uidaho.edu/LS/Math/chair	

Closing Date for Applications: Applications will be accepted until the position is filled or the search is abandoned for the year. Completed applications received by January 3, 2001 will receive full consideration.

The University of Idaho is the land-grant university for Idaho and is designated as the primary state institution to conduct research and grant graduate degrees. The Mathematics Department offers the B.S. in mathematics, B.S. in Applied Mathematics, M.A.T., M.S., and Ph.D. degrees. Current enrollment is 11,634 students of which 2,045 are graduate students. The City of Moscow has a resident population of about 18,000 and is located in a region of beautiful rolling hills at the foothills of the Bitterroot Mountains. You will find information about the university and the surrounding environment at our internet site.

To enrich education through diversity the University of Idaho is an equal opportunity/affirmative action employer.

### **ADVERTISEMENTS**

# Association for Symbolic Logic ASL Travel Awards

Awards for Students and Recent PhDs. In 2001 the ASL will again make available modest travel awards to graduate students in logic and (for the European Summer Meeting only) to recent PhDs so that they may attend the 2001 ASL Annual Meeting in Philadelphia, Pennsylvania, or the 2001 ASL European Summer Meeting in Vienna, Austria. To be considered for a Travel award, please (1) send a letter of application, and (2) ask your thesis supervisor to send a brief recommendation letter. The application letter should be brief (one page) and should include (1) your name, (2) your home institution, (3) your thesis supervisor's name, (4) a one-paragraph description of your studies and work in logic, (5) your estimate of the travel expenses you will incur, (6) (for citizens or residents of the USA) citizenship or visa status, and (7) (voluntary) indication of your gender and minority status. Only modest awards will be possible, partially covering travel costs and perhaps some of the living expenses during the meeting. Women and members of minority groups are strongly encouraged to apply. In addition to funds provided by the ASL, this program of travel awards is supported by a grant from the US National Science Foundation; NSF funds may be awarded only to students at USA universities and to citizens and permanent residents of the USA. Air travel paid for using NSF funds must be on a US airline. For both meetings, application by email is encouraged; put "ASL travel application" in the subject line of your message.

For the 2001 ASL Annual Meeting, applications and recommendations should be received before the deadline of January 8, 2001, by the Program Chair: Andre Scedrov, Department of Mathematics, University of Pennsylvania, Philadelphia, Pennsylvania 19104-6395; email: scedrov@cis.upenn.edu.

For the 2001 ASL European Summer Meeting, applications and recommendations should be received before the deadline of April 1, 2001, by the Organizing Committee, Logic Colloquium '01, Kurt Gödel Society, c/o Institut für Computersprachen, Technische Universität Wien (185), Favoritenstrasse 9, A-1040 Vienna, Austria; email: lc2001@logic.at.

2001 ASL Annual Meeting. March 10-13, 2001, Philadelphia, Pennsylvania. Abstracts of contributed talks from ASL members should be received before the deadline of December 1, 2000, by the ASL office.

2001 ASL European Summer Meeting. August 6-11, 2001, Vienna, Austria. Abstracts of contributed talks must be received by the deadline of May 1, 2001; they should be sent by email to lc2001@logic.at or by mail to Logic Colloquium '01, Kurt Gödel Society, c/o Institut für Computersprachen, Technische Universität Wien (185), Favoritenstrasse 9, A-1040 Vienna, Austria.

ASL, Box 742, Vassar College 124 Raymond Ave., Poughkeepsie, NY 12604 email: asl@vassar.edu; Fax: 845-437-7830 Also visit the ASL web site: http://www.aslonline.org.



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Volume 30, Number 6, November-December 2000

#### AWM

#### ADVERTISEMENTS

#### **BALL STATE UNIVERSITY - MUNCIE, INDIANA** Assistant Professor - Department of Mathematical Sciences

Tenure-track position available August 17, 2001 (One or more temporary positions may be available, pending budgetary approval.)

**Responsibilities:** teaching 8 to 9 hours per semester, predominantly at the undergraduate level; research in mathematics; professional service. **Minimum qualifications:** all requirements for a doctorate in one of the mathematical sciences completed by August 1, 2001. **Preferred qualification:** research interests compatible with present faculty, especially those in differential equations and applied mathematics. Excellent benefits with salary competitive and commensurate with qualifications.

The Department includes faculty in pure and applied mathematics, financial mathematics, statistics, actuarial science and mathematics education. The Department offers a range of academic programs leading to BA, BS, MA & MAE degrees in these areas. (www.cs.bsu.edu/~math/)

A candidate's file is complete when all of the following have been received: 1) letter of application; 2) AMS Standard Cover Sheet, available from the AMS or from the Department; 3) curriculum vitae; 4) research summary; 5) three letters of reference, at least one of which substantially addresses the candidate's teaching ability and performance. Send to: Dr. Michael A. Karls, Chair, Mathematics Search Committee, Department of Mathematical Sciences, Ball State University, Muncie, IN 47306. Email: msearch@math.bsu.edu. Review of completed applications will begin immediately and will continue until the position is filled. Applicants should also notify the Committee Chair if they intend to attend the 2001 Joint Mathematics Meetings in New Orleans.

Ball State University is an equal opportunity, affirmative action employer and is strongly and actively committed to diversity within its community.

#### **MILLS COLLEGE - Assistant Professor of Mathematics**

Mills College invites applications for a tenure-track position as Assistant Professor of Mathematics starting Fall 2001. **Required:** Ph.D. in mathematics or statistics, and a broad background in mathematics. Applicants must submit evidence of superior teach-ing and research abilities. **Teaching load:** five courses per year. **Duties:** teach a variety of courses in mathematics; contribute to an environment that excites women about mathematics and prepares them for careers that use mathematics; help build a strong program in mathematics that is attractive to students with diverse back- grounds and interests. Mills College is a small, well-known, liberal arts college for women located in the San Francisco Bay Area. It offers 34 majors and 18 graduate programs, including a master's program in interdisciplinary computer science within the Dept. of Mathematics & Computer Science. The faculty/student ratio is 1:11.

Please send a completed AMS Standard Cover Sheet, a vita, at least three letters of recommendation, a list of the mathematics courses taken, and statements of teaching philosophy and research agenda to:

#### Chair of the Mathematics Search Committee, Mills College, 5000 MacArthur Blvd., Oakland, CA 94613

Email address: mathsearch@mills.edu. Indicate whether you plan to attend the New Orleans Meeting in January. To ensure full consideration, all materials, including letters of reference, should be received by December 1, 2000. Late applications will be reviewed until the search is closed. Women, people of color, and those committed to working in a multicultural environment are encouraged to apply. AA/EOE

#### Enhancing Diversity in Graduate Education (EDGE)

BRYN MAWR COLLEGE SPELMAN COLLEGE

This program, funded by the National Science Foundation, the National Security Agency, and the Andrew W. Mellon Foundation, is designed to strengthen the ability of women and minority students to successfully complete graduate programs in the mathematical sciences.

The summer program consists of two core courses in analysis and algebra/linear algebra. There will also be minicourses in vital areas of mathematical research in pure and applied mathematics, short-term visitors from academia and industry, guest lectures, graduate student mentors, and problem sessions. In addition, a follow-up mentoring program and support network will be established with the participants' respective graduate programs. Applicants to the program should be women in one of the following areas (i) graduating seniors who have applied to graduate programs in the mathematical sciences, (ii) recent recipients of undergraduate degrees who are now entering graduate programs, or (iii) first-year graduate students. All applicants should have completed standard junior-senior level undergraduate courses in analysis and abstract algebra and have a desire to earn a doctorate degree. Women from minority groups who fit one of the above three categories are especially encouraged to apply. Final acceptance to the program is contingent upon acceptance to a graduate program in the mathematical sciences. The summer session of the program will be held during June 4 - 29, 2001 at Spelman College in Atlanta, GA, co-directed by Sylvia T. Bozeman, Ph.D. (Spelman) & Rhonda J. Hughes, Ph.D. (Bryn Mawr). A stipend of \$1,800 plus room and board will be awarded to participants. Participants to the program will be announced by April 15. Applications should consist of the following: completed application form, statement describing the expected value of this program to the applicant's academic goals, two letters of recommendation from mathematical sciences faculty familiar with the applicant's work, transcript and current resume, list of graduate programs to which the applicant has applied, together with ranked list of her two or three top choices. Applications forms may be obtained from the website and should be sent to: EDGE Program, Box 270, Spelman College, Atlanta, GA 30314. Visit our website: http://www.brynmawr.edu/Acads/Math/. Deadline: March 1, 2001

## AMERICAN UNIVERSITY Department of Mathematics and Statistics

The Department of Math and Statistics in the College of Arts and Sciences at American University is seeking applicants for the following positions to begin in Fall 2001: 1) TENURE TRACK ASSISTANT PROFESSOR OF STATISTICS. Ph.D. in Statistics or Biostatistics required. 2) TENURE TRACK ASSISTANT PROFESSOR OF MATHEMATICS. Ph.D. in Mathematics required. 3) POSSIBLE ADDITIONAL TEMPORARY POSITIONS IN MATHEMATICS, STATISTICS, OR MATHEMATICS EDUCATION subject to budgetary authorization. Qualified candidates will have evidence of effective teaching and scholarship. Responsibilities include teaching undergraduate and graduate level courses; advising students; conducting research; and participating in department, college, and university service activities. Applications for the tenure track positions will be reviewed beginning January 15, 2001 and will continue until the positions are filled. Applicants should indicate which position(s) they are interested in and send vitae and 3 letters of reference to:

#### Search Committee, Department of Mathematics and Statistics, American University, 4400 Massachusetts Avenue, N.W., Washington, DC 20016-8050.

American University is an EEO/AA employer committed to a diverse faculty, staff, and student body. Women and minority candidates are strongly encouraged to apply.

AMHERST COLLEGE - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Applications are invited for a tenure-track position in Mathematics at the Assistant Professor level, beginning in August 2001. Amherst College is a private liberal arts college for men and women that emphasizes scholarship and excellence in undergraduate teaching. The College has 1650 students and 165 faculty members. It is located in the valley of the Connecticut River in Western Massachusetts. Our environment is enhanced by our proximity to the nearby University of Massachusetts and Hampshire, Mount Holyoke and Smith Colleges. Departmental responsibilities include teaching a wide range of undergraduate courses and supervising undergraduate theses. Faculty are expected to maintain vigorous research programs. Professors teach two courses each semester. Applicants should hold a Ph.D. in mathematics. The Department seeks candidates with broad intellectual interests, a strong commitment to excellence in research and undergraduate teaching, and the ability to develop a research program with opportunities for undergraduate participation. Candidates should submit a current curriculum vita, a list of publications, graduate and undergraduate transcripts, a letter describing plans for teaching and research, and three letters of recommendation. For full consideration, applications should be completed by December 1, 2000. Amherst College is an Equal Opportunity/Affirmative Action Employer, and encourages women, minorities, and disabled persons to apply. Reply to: **Prof. David Cox, Chair, Search Committee, Department of Mathematics and Computer Science, Amherst College, P.O. Box 5000, Amherst, MA 01002-5000**. Email: search@math.amherst.edu

ARIZONA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics at Arizona State University invites applications for a tenure-track position at the Assistant Professor level, beginning in the fall semester of 2001. Applicants are required to have a Ph.D. in Mathematics, or a closely related field with a strong background in Mathematics, and a demonstrated potential for excellence in mathematics education research and teaching at all levels. The successful candidate will be expected to conduct research and publish in the area of mathematics education, provide quality teaching of undergraduate and graduate courses in secondary and undergraduate mathematics education and undergraduate courses in mathematics. Candidates should expect to participate fully' in on-campus interdisciplinary mathematics education activities, and appropriate professional service activities. Applicants must send i) their resume, ii) an AMS Cover Sheet, iii) a personal statement addressing their research agenda, iv) a statement of teaching philosophy, and v) arrange for at least three letters of recommendation to be sent to: R.A. Renaut, Chair, Mathematics Education Search Committee, Department of Mathematics, P.O. Box 871804, Arizona State University, Tempe, AZ 85287-1804. Review of the applications will begin on December 4, 2000, and will continue weekly until the positions are filled. AA/EOE.

BARUCH COLLEGE - DEPARTMENT OF MATHEMATICS - The department invites applications for one (and possibly two) tenure-track Assistant Professors beginning September 2001. Duties include research, teaching, and service. Highest priority will be given to applicants with expertise in areas of mathematics related to financial applications, including stochastic processes, partial differential equations, probability theory, numerical methods, and operations research. Ideally, candidates should have some experience applying their education and research to finance. Strong undergraduate teaching skills are essential. A Ph.D. is required for an appointment as an Assistant Professor. Baruch College is a senior college of the City University of New York located in the historic, beautiful Gramercy Park area of Manhattan, with an enrollment of approximately 15,000 undergraduate and graduate students in its three schools. An AA/EO/IRCA/ADA employer. Send curriculum vitae, the names of three references, and copies of publications by January 2, 2001, to: Mathematics Department-Search Committee, Baruch College-CUNY, Box G-0930, 17 Lexington Avenue, New York, NY 10010.

BOISE STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Three beginning tenure-track Assistant Professor positions for fall, 2001 available at Boise State; applied mathematics, pure mathematics, statistics. Screening begins January 10. Required: doctorate, evidence of research and teaching ability. Consult http://math-cs.boisestate.edu/, FACULTY POSITIONS, for further information. Send application letter summarizing research and teaching interests, vita, graduate transcripts, and 3 letters of reference (one addressing teaching): (Appropriate Hiring Committee), Department of Mathematics and Computer Science, Boise State University, Boise, ID 83725. Information (208) 426-1172, tty (208) 426-1436, office@math-cs.boisestate.edu, fax 208-426-1356. Boise State is an Affirmative Action/Equal Opportunity Employer and strongly encourages applications from female and minority candidates.

**BOWDOIN COLLEGE - DEPARTMENT OF MATHEMATICS -** A tenure-track position at the Assistant Professor or Instructor rank starting Fall, 2001, open to applicants whose interests lie in analysis and related areas. Candidates with strength in probability or topology are particularly desired. Ph.D. preferred. Applicants must demonstrate the potential to develop a strong research program as well as the potential for excellence in teaching. Normal teaching load is two courses per semester. Review of applications will begin on December 15, 2000 but applications will be accepted until the position is filled. Send completed AMS application cover sheet (www.ams.org), resume, and 3 letters of recommendation to: Chair, Mathematics Department, Bowdoin College, 8600 College Station, Brunswick, ME 04011-8486. Include email address. Bowdoin College is committed to equal opportunity through affirmative action. Women and minorities are encouraged to apply. Bowdoin College is a private, undergraduate institution located half an hour from Portland and 2 hours from Boston. More information about the Department and College can be found at the website www.bowdoin.edu.

BRANDEIS UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for a tenure-track position at the rank of assistant professor, beginning in the fall of 2001. A Ph.D., excellence in research and demonstrated excellence in teaching are required. A more advanced appointment for candidates with exceptional qualifications may be considered. Applicants should send a vita and four letters of recommendation, one of which should address teaching effectiveness, by December 15 to: Hiring Committee, Department of Mathematics, MS 050, Brandeis University, Waltham, MA 02454-9110. Brandeis is an Affirmative Action/Equal Opportunity Employer; we especially encourage applications from women and minorities.

**BROOKLYN COLLEGE, CUNY - DEPARTMENT OF MATHEMATICS -** The Department of Mathematics of Brooklyn College of the City University of New York announces a tenure-track assistant professorship in mathematics beginning in Fal, 2001. The successful applicant will possess the Ph. D. degree and will have experience using computers in research and teaching. The candidate should also have the ability to teach mathematics courses in the masters programs in mathematics education and to work on curriculum development in that area. Commitments to research, teaching, and curriculum development are essential. Salary is commensurate with qualifications and experience within the range \$32,703 to \$45,737. Candidates should send a resume and a teaching portfolio and arrange to have three letters of recommendation sent to: Dr. Joan Rome, Assistant Vice President for Human Resources, Brooklyn College, 2900 Bedford Avenue, Brooklyn, NY 11210-2889. Review of applications will begin on November 15, 2000 and will continue until the position is filled. EO/AA/IRCA/ADA

**BROWN UNIVERSITY** - **DEPARTMENT OF MATHEMATICS** - **J.D. Tamarkin Assistant Professorship** - One three-year non-tenured non-renewable appointment beginning July 1, 2001. Teaching load: one to two courses per semester (3-6 hours per week). Candidates are required to have received a Ph.D. degree or equivalent by the start of this appointment, and they may have up to 3 years of academic and/or postdoctoral research experience by then. VIGRE Postdoctoral Fellow: One three-year non-tenured non-renewable appointment, beginning July 1, 2001. Teaching load: one course per semester (3 hours per week). The fellowship includes summer support and a \$2,500/year research fund. Candidates are required to have received a Ph.D. degree by the start of this appointment, and they may have up to 18 months of academic and/or postdoctoral research experience by then. Candidates must be U.S. citizens, nationals, or permanent residents to qualify for the  $[\rightarrow]$ 

[ ] VIGRE fellowships which are NSF supported positions. Applicants should have strong research potential and a commitment to teaching. Field of research should be consonant with the current research interests of the department. For full consideration, a curriculum vita, an AMS Standard Cover Sheet, and 3 letters of recommendation must be received by Dec. 1, 2000. All inquiries and materials should be addressed to: Junior Search Committee, Dept. of Mathematics, Brown University, Providence, RI 02912. To access the AMS Standard Cover Sheet, visit our website: http://www.math.brown.edu/juniorsearch.shtml. Email inquiries can be addressed to juniorsearch@math.brown.edu. Brown University is an EO/AA Employer and encourages applications from women and minorities.

BRYN MAWR COLLEGE - DEPARTMENT OF MATHEMATHICS - Tenure-track Assistant Professor of Mathematics - The Mathematics Department of Bryn Mawr College invites applications for a tenure track position in applied mathematics at the rank of assistant professor, to start in the Fall Semester of 2001 (pending final administrative approval). Candidates must have completed a doctorate in mathematics or an allied field by the starting date and must show promise in research and a serious commitment to undergraduate and graduate teaching. Preference will be given to applicants with interest in interdisciplinary collaboration and in engaging undergraduates in their research. Applications should include a curriculum vitae, a description of research, a statement of teaching philosophy, and three or more letters of reference, at least one of which discusses the applicant's teaching. The review of applications will begin on January 1, 2001 and continue until the position is filled. All materials should be sent to: Mathematics Search, Dept. of Mathematics, Bryn Mawr College, Bryn Mawr, PA 19010. For more information, consult http://www.brynmawr.edu/mathsearch. Bryn Mawr is an exceptional liberal arts college for women with coeducational graduate programs in sciences, some humanities, and social work. The College supports faculty excellence in both teaching and research, and provides a rigorous education in the context of a diverse and pluralistic scholarly community. Located 11 miles west of Philadelphia, Bryn Mawr participates in consorial programs with the University of Pennsylvania, Haverford & Swarthmore Colleges. Bryn Mawr College is an equal opportunity, affirmative action employer. Members of underrepresented groups are especially encouraged to apply.

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA - DEPARTMENT OF MATHEMATICS - Four tenure-track positions - PURE MATH AND MATH ED. (ASST PROF): Teach major & service courses in secondary teaching/pure option; advise students seeking secondary teaching credential; interact with Center for Education & Equity in Math, Sci. & Tech. (CEEMaST) and College of Ed. (CEIS). Min qual: Ph.D. in pure math with ability to teach geometry, number theory or topology and strong background in math ed. or doctorate in math ed. with ability to teach upper division pure math courses. Initial review of applications 12/15/00. Math and Math Ed. (Asst Prof) Teach major & service courses in math, applied math, or stat as well as math ed courses; advise students pursuing a secondary teaching credential; interact with CEEMaST and CEIS. Min qual: Ph.D. in math, appl math, or stat and strong background in math ed. or doctorate in math ed. with ability to teach upper division math, appl math, or stat courses. Initial review of applications 1/19/01. APPL.MATH/STAT. (ASST/ASSOC PROF): Teach major and service courses in appl math or stat, advise graduate students. Preference will be given to applicants with expertise in one or more of: differential equations, modeling (deterministic and stochastic), random processes, estimation theory, numerical analysis, or operations research. Min qual: Ph.D. in math or stat or related area. Initial review of applications 2/2/01. Statistics (Asst/Assoc Prof) Teach graduate stat courses, undergraduate and service courses in stat or math; advise graduate students. Preference given to applicants with expertise in one or more of: statistical modeling, multivariate stat, biostat, design of experiment, estimation theory, statistical consulting. Min qual: Ph.D. in stat or math or related area. Initial review of applications 2/2/01. All positions: Salary dependent on qualifications. Required: evidence of teaching excellence, ability to direct master's theses, potential for conducting scholarly activities. Completion of terminal degree by Sept. '01. Submit application form (with name of position), curriculum vitae, transcripts, and min. of 3 reference letters to: Faculty Search Committee, Math Dept., CSPU Pomona, 3801 W. Temple Ave, Pomona, CA 91768-4007; 909-869-4008; Fax: 909-869-4904; Email: Imborchert@ csupomona.edu. Review of applications continues until position is filled or closed. AA/EEO. See http://www.csupomona.edu/~math.

CALIFORNIA STATE UNIVERSITY, LONG BEACH - DEPARTMENT OF MATHEMATICS - Several Positions - TENURE-TRACK ASSISTANT PROFESSOR in APPLIED MATHEMATICS starting August 23, 2001. Must have Ph.D. in Math with specialization and coursework in Applied Math, or Ph.D. in Applied Math with substantial math coursework. Experience in modeling, economics, finances, or biological sciences desired. TENURE-TRACK ASSISTANT PROFESSOR in PURE MATHEMATICS starting August 23, 2001. Ph.D. in Math with specialties in Algebra or Analysis; preference given to those who complement existing faculty interest in functional analysis, ring theory, geometry, algebraic geometry, linear algebra or combinatorics. Duties for both the APPLIED and PURE MATH positions include teaching graduate and undergraduate courses (especially math modeling for the applied position); research leading to publication, and committee service. Salary for these positions are \$40,488-\$49,884 per academic year. Review of applications for these two positions begins on January 12, 2001. For these and other department job announcements visit www.csulb.edu/depts/math. To apply, send letter of application, curriculum vitae, three letters of recommendation, transcript from Ph.D. awarding university to: Dr. Arthur K. Wayman, Chair, Mathematics Dept., CSULB, 1250 Bellflower Blvd., Long Beach, CA 90840-1001. Email: away@csulb.edu. CSULB is EO/AA Employer committed to excellence through diversity, and takes pride in its multicultural environment. An EO/AA Employer.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for one tenure-track appointment at the assistant professor level effective Fall 2001. California State University Northridge, which is classified as an Hispanic Serving Institution, is a comprehensive university located in the greater Los Angeles area. It is in close proximity to major research universities. The Department of Mathematics has 35 full-time faculty members and offers BA, BS and MS degrees. Candidates should have a Ph.D. in the mathematical sciences, a strong commitment to excellence in teaching both at the undergraduate and graduate level, and potential for success in research. Responsibilities include teaching a maximum of 12 units per semester with possible reductions in the teaching load to carry out research or to make professional contributions, and providing effective instruction to students of diverse backgrounds in a multicultural setting. Please send a vita, the AMS standard cover sheet and three letters of recommendations, one of which addresses the candidate's teaching abilities, to: Hiring Committee, Department of Mathematics, CSUN, Northridge, CA 91330-8313 by January 15, 2001. Email (inquires only) math.hiring1@csun.edu. California State University is an Equal Opportunity, Title IX, section 503 and 504 employer.

CARLETON COLLEGE - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - A tenure-track position to begin September 2001. A Ph.D. in statistics, mathematics, or a related field is required, and teaching excellence is essential. Ordinarily, Carleton faculty teach 2 courses per term, 3 terms per nine-month year. We expect that the successful candidate would teach four or more statistics courses a year; if desired, the balance of the load can be elsewhere in the department. For more details, and for information on how to apply and on the department, see our website at http://www.mathcs.carleton.edu. Carleton is an AA/EO employer; women and members of other underrepresented groups are especially encouraged to apply. Review of applications will begin by January 1, 2001.

CARNEGIE MELLON UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Lecturer Track Position - The Department of Mathematical Sciences at Carnegie Mellon University expects to make one lecturer track appointment for the 2001-02 academic year. This is a three-year appointment, with possible renewal, but is not eligible for indefinite tenure. Qualifications: doctorate, established success in education, familiarity with computer use in mathematics education. This position will carry a 3-course teaching load per semester. A detailed description of this position may be found on our website: http://www.math.cmu.edu. The deadline for applications is January 12, 2001. To apply send a letter of application and curriculum vita to: Lecturer Track Appointments Committee, Department of Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA 15213. Carnegie Mellon University is an Affirmative Action/Equal Opportunity Employer.

#### ADVERTISEMENTS

CARNEGIE MELLON UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Zeev Nehari Visiting Assistant Professorship - The Zeev Nehari Visiting Assistant Professorship was established to honor the memory of Professor Nehari, who had a long and distinguished career in the Department of Mathematical Sciences. This position is available for a period of three years, beginning in September 2001, and carries a teaching load of three courses during the academic year. Applicants are expected to show exceptional research promise, as well as clear evidence of achievement and should have research interests which intersect those of current faculty of the Department. Applicants should send a vita, list of publications, a statement describing current and planned research, and arrange to have at least three letters of recommendation sent to the committee. The deadline for applications is January 12, 2001. All communications should be addressed to: Zeev Nehari Appointments Committee, Department of Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA 15213. Carnegie Mellon University is an Affirmative Action/Equal Opportunity Employer.

CARNEGIE MELLON UNIVERSITY - CENTER FOR NONLINEAR ANALYSIS / DEPARTMENT OF MATHEMATICAL SCIENCES - The Center for Nonlinear Analysis expects to make several Post-Doctoral appointments for 2001-02 in the area of applied analysis. These will be two-year joint appointments by the Center and Department of Mathematical Sciences. Recipients will teach at most two courses per year. Applicants should send a vita, list of publications, a statement describing current and planned research, and arrange to have at least three letters of recommendation sent to the committee. The deadline for applications is January 12, 2001. All communications should be addressed to: Post-Doctoral Appointments Committee, Department of Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA 15213. Carnegie Mellon University is an Affirmative Action/Equal Opportunity Employer.

THE COLLEGE OF NEW JERSEY - DEPARTMENT OF MATHEMATICS AND STATISTICS - Applications are invited for a tenure track position in Mathematics Education starting September 2001. The position requires a Ph.D. or Ed.D in Mathematics, Statistics or Mathematics Education, demonstrated record of teaching effectiveness, and strong indications of research potential. Responsibilities include teaching up to 12 hrs./sem, which includes content and methods courses, supervision of student teachers, advising and committee service. Preference will be given to candidates who can collaborate with the Center for Inquiry and Design Based Learning, which currently has state and federal funding in excess of \$3 million for Integrated Science, Mathematics and Technology Initiatives. Experience with pre-service teachers preferred. Send vita and three letters of recommendation, addressing teaching and research to: Search Committee, Department of Mathematics and Statistics, The College of New Jersey, P.O. Box 7718, Ewing, NJ 08628-0718. Application deadline: January 2, 2001. To enrich education through diversity, TCNJ is an AA/EOE. http://www.tcnj.edu/~mathstat/

COLLEGE OF SAINT BENEDICT / SAINT JOHN'S UNIVERSITY - DEPARTMENT OF MATHEMATICS - Assistant Professor - The College of Saint Benedict/Saint John's University seeks candidates for a tenure track position in mathematics to begin Fall, 2001. The successful candidate must demonstrate a strong commitment to undergraduate teaching in a liberal arts setting and should be prepared to teach a wide range of mathematics courses to majors, minors, and general education students. A Ph.D. in the mathematical sciences is required. The department has thirteen full-time faculty members, is supported by a separately staffed Mathematics Skills Center, and graduates approximately 20 majors annually. Saint John's University, a liberal arts college for men, and the College of Saint Benedict, a liberal arts college for women, are located four miles apart in Central Minnesota just outside metropolitan St. Cloud and 70 miles from Minneapolis. Both are Catholic colleges in the Benedictine tradition. Students attend classes on both campuses, selecting courses from a common curriculum with identical degree requirements. Academic departments are joint and the academic program is coordinated by the Provost for Academic Affairs, with the assistance of the undergraduate deans on each campus. This partnership allows each college to offer to its students a co-educational academic experience with expanded educational opportunities, while preserving the single sex character and distinct heritage of each institution. Additional information is posted on our website: http://www.csbsju.edu. All applicants must submit a letter of application, statement of teaching philosophy, curriculum vitae, copies of all transcripts, three recent letters of recommendation to: Saint John's University, Human Resources, Box 7188, Collegeville, MN 56321-5000. Or via email: asiemers@csbsju.edu. Applications received after December 1, 2000 cannot be guaranteed consideration. Women and people of diverse racial, ethnic, and cultural backgrounds are encouraged to apply. The

COLORADO COLLEGE - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for one or more tenure-track Assistant Professor positions to begin in September 2001. Ph.D. in Mathematics, Computer Science, or related field required. Applicants will be considered from all areas of mathematics, but will be expected to teach undergraduate computer science courses. In keeping with departmental tradition, applicants must also be able to teach a wide range of courses across the mathematics curriculum. Review of completed applicant files will begin on 8 January 2001 and continue until the position is filled. Colorado College, a leading national liberal arts college, is dedicated to greater diversity among its faculty and in its curriculum, and candidates who can contribute to that goal are encouraged to identify themselves and their relevant experiences. The College welcomes members of all minority groups and reaffirms its commitment practices. The Department of Mathematics values both excellence in teaching and vigorous scholarship. Candidates should send a letter of application describing both their commitment to teaching and scholarly interests, a curriculum vita, graduate school transcripts, and three letters of recommendation (at least one of which should address abilities as a teacher) to: Kathy Merrill, Department of Mathematics, The Colorado College, 14 E. Cache La Poudre, Colorado Springs, CO 80903-3294. Email address: kmerrill@coloradocollege.edu. Please indicate whether you will be available to meet with representatives of the college at the Joint MAA/AMS Meetings in New Orleans. Equal Opportunity Employer.

**COLORADO SCHOOL OF MINES - DEPARTMENT OF MATHEMATICAL AND COMPUTER SCIENCES -** Applications are invited for a position in Applied Mathematics at the Assistant or Associate Professor level for Fall 2001. A doctorate in Mathematics or a related field is required. Preference will be given to applicants with expertise in the analysis of inverse problems, consonant with the research interests of the department. It is expected that the successful applicant will interact with the research activities of the School's Center for Wave Phenomena (http://www.cwp.mines.edu). Applicants at the assistant professor level should have one or more years of postdoctoral experience, and show exceptional promise in teaching and research. Senior level applicants must demonstrate established excellence in teaching and research. Evidence of interest or successful involvement in interdisciplinary collaborative research projects in engineering or physical science is desirable. The Colorado School of Mines is Colorado's oldest public university. Located in Golden, Colorado, in the foothills of the Rockies 13 miles west of applied science and engineering disciplines. Research funding is approximately \$22 million annually. To apply, send (a) a curriculum vitae; (b) four letters of reference, at least one of which addresses teaching ability, and (c) a statement describing teaching experience and philosophy, and research interests and aspirations to: **Colorado School of Mines, Office of Human Resources, Applied Math Search # 00-081190, 1500 Illinois Street, Golden, Colorado 80401-1887**; fax: (303) 273-3278. To guarantee full consideration, applications should be submitted by December 15, 2000. The Colorado School of Mines (http://www.mines.edu) is an EEO/AA employer. Women and minorities are encouraged to apply.

COLUMBIA UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for Ritt Assistant Professorship positions beginning July 1, 2001. Closing date: January 10. Positions for new Ph.D. regardless of age. One-year appointment, normally renewable for three more years. Teaching load, two courses per semester. Send vitae, (p)reprints and three letters of recommendation. At least one letter should address teaching experience and ability. Preference will be given to candidates with research interests similar to those in the department. Please submit "AMS Application Cover Sheet" with application. Send applications to: Hiring Committee, Department of Mathematics, Mail Code 4406, 2990 Broadway, Columbia University, New York, NY 10027. Application files that are complete by January 10 will receive preferred consideration. Email applications will not be accepted. Columbia is an equal opportunity/affirmative action employer and is especially interested in receiving applications from qualified women and minorities.

COLUMBIA UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for two postdoctoral/assistant professor positions partially supported by a National Science Foundation VIGRE (Vertical Integration of Research and Education) grant beginning July 1, 2001. Summer support is included. Closing date: January 10. Applicants must be U.S. citizens or permanent residents. Ph.D. in Mathematics or Mathematical Physics required. Applicants must demonstrate a commitment to research and teaching. One-year appointment, normally renewable for two or more years. Reduced teaching load of one course per term to allow greater involvement with departmental graduate program that emphasizes mathematics courses and research that cross traditional scientific boundaries. Send vitae, (preprints and three letters of recommendation (at least one addressing teaching qualifications) and 'AMS Application Cover Sheet.' Send applications to: VIGRE Hiring Committee, Department of Mathematics, Mail Code 4406, 2990 Broadway, Columbia University, New York, NY 10027. Application files that are complete by January 10 will receive preferred consideration. Email applications will not be accepted. Columbia University is an equal opportunity/affirmative action employer and is especially interested in receiving applications from qualified women and minorities.

CONNECTICUT COLLEGE - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Connecticut College invites applications for a 2-year full-time visiting position in mathematics to begin in August 2001. Applicants must have a Ph.D. in mathematics and a strong commitment to excellence in undergraduate teaching. Preference will be given to applicants whose research is in partial differential equations, dynamical systems, or applied mathematics; however, applications from candidates in all fields of mathematics will be considered. Connecticut College is a small, private, highly selective college with a strong commitment to the liberal arts tradition and an emphasis on broad interdisciplinary teaching and research. The College has a strong program integrating technology throughout the curriculum. Salary is competitive. Connecticut College is an Affirmative Action/Equal Opportunity employer and is actively engaged in increasing faculty and staff diversity. Applications should include a letter of application, curriculum vitae, (unofficial) graduate transcripts, a statement describing teaching experience and philosophy, a research plan, and 3-5 letters of reference, at least one of which should address teaching. All application materials should be sent to: **Professor Kathleen A. McKeon, Connecticut College, Box 5561, New London, CT 06320;** 860-439-2012; Fax: 860-439-2700; Email: math-dept@conncoll.edu. Review of applications will begin December 5, 2000 and will continue until the position is filled. More information about this position and the College may be obtained at our web page http://math.conncoll.edu/.

CORNELL COLLEGE - DEPARTMENT OF MATHEMATICS - Cornell College, a private undergraduate liberal arts college, seeks a broadly trained pure mathematician interested in undergraduate teaching. Teaching responsibilities include a range of lower and upper division courses. A Ph.D. in mathematics and demonstrated excellence in teaching is required. The appointment will be at the assistant professor level to begin in the fall of 2001. A shared appointment will be considered. Cornell College has attracted national attention for its distinctive academic calendar under which faculty teach and students take one course at a time in month-long terms. The College is committed to excellence in teaching and encourages interdisciplinary interests among its faculty. Submit paper copies of letter, vita, graduate transcripts, brief statement of teaching and research interests, and three letters of reference to: Ms. Ann Opatz, Office of Academic Affairs, Cornell College, 600 First Street West, Mount Vernon, IA 52314-1098. Consideration of applications begins December 1, 2000 and will continue through January 13, 2001; preliminary interviews will be conducted at the Joint Mathematics Meetings in New Orleans. Cornell College is an AA/EO employer and encourages applications from women and minority candidates.

CREIGHTON UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Creighton University invites applications for the Clare Boothe Luce Professorship within the College of Arts and Sciences. The position is restricted by the Clare Boothe Luce bequest to the Henry Luce Foundation to women who are U.S. citizens. Creighton University is a Jesuit, Catholic institution that encourages applications from qualified individuals of all backgrounds who believe they can contribute to its distinctive educational traditions. The position is for a tenure-track assistant professor in mathematics, statistics or computer science. Candidates must have a Ph.D. prior to chair appointment and a research record commensurate with the expectations of a chair position at this rank. Send letter of application, curriculum vitae, transcripts, statement of research program and goals, statement of teaching philosophy and three letters of recommendation independent of the applicant to: Luce Search Committee Chair, Department of Mathematics and Computer Science, Creighton University, Omaha, NE 68178-2090. Review of completed dossiers will begin December 15, 2000 and will continue until a suitable candidate is selected. Creighton University is an Affirmative Action/Equal Opportunity employer. Women and minority candidates are encouraged to apply.

DARTMOUTH COLLEGE - DEPARTMENT OF MATHEMATICS - John Wesley Young Research Instructorship - 2-years, new or recent Ph.D.'s whose research overlaps department member's. Teach 4 ten-week courses spread over 2 or 3 quarters. \$42,000 for nine months; \$9,333 summer research stipend. Send application letter, resume, research/thesis description, graduate transcript, and 3 or preferably 4 letters of recommendation (at least one should discuss teaching) to: Betty Harrington, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, NH 03755-3551. Files completed by January 5, 2001 considered first. Dartmouth is committed to affirmative action and strongly encourages minorities and women to apply.

DARTMOUTH COLLEGE - DEPARTMENT OF MATHEMATICS - Tenure-track Assistant Professor openings with initial appointment in 2001-2002 academic year in the fields of geometry; the intersection of topology and analysis (for example, someone who works in topology and global analysis; or in gauge field theory; or in topology C\*-algebras, and noncommutative geometry); and applied mathematics. In exceptional cases, appointment to a higher level is possible. Teaching four 10-week courses over 2 or 3 terms. Send letter of application, vita, research interests, four letters of recommendation, at least one on teaching, to: Betty Harrington, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, NH 03755-3551. Applications completed by January 5, 2001 considered first. Women and minorities are encouraged to apply.

**DUKE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for two positions as **Assistant Research Professor of Mathematics**. Candidates should have completed a doctorate as of September 1, 2001 and show definite promise in research and teaching. The teaching load will be two courses during one semester and one course during the other, so that the appointee will have additional time for research. The appointments are for one year and are renewable for two additional years; they begin on September 1, 2001. Applicants please send (a) AMS standard cover sheet; (b) a vita; (c) a description of current and past [ $\rightarrow$ ]

[ ] research (1-3 pages); (d) a plan for future research, and have at least four letters of recommendation, including one which evaluates teaching, sent directly to Duke by mid-January. Each applicant is requested to include in their materials the name(s) of one or more members of the faculty of the Department of Mathematics at Duke working in their general area of research. The AMS Standard Cover Sheet should be completed online at http://www.mathjobs.org/. Applicants are encouraged to submit their other materials electronically at this site; they may also mail them to: Appointments Committee, Department of Mathematics, Box 90320 Duke University, Durham, NC 27708-0320. Acceptable file formats are postscript, pdf, dvi, gif and jpeg. Applications received by January 1, 2001 will be guaranteed full consideration; early application is advisable. Duke University is an affirmative action/equal opportunity employer. Email inquiries: appts@math.duke.edu.

**DUKE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for one position as **Lecturing Fellow** in the Department of Mathematics at Duke University. Candidates should have completed a doctorate as of September 1, 2001, have excellent teaching credentials and have a strong interest in curriculum development. The teaching load will be two courses per semester. In addition, Lecturing Fellows are expected to participate in the Department's ongoing curriculum revision and experimentation and to continue their own research program in Mathematics. Duke University is an affirmative action/equal opportunity employer. The appointment is for two years and is not renewable; it begins on September 1, 2001. Applicants please send (a) AMS standard cover sheet; (b) a vita; (c) a description of current and past research (1-3 pages); (d) a plan for future research, and have at least four letters of recommendation, including one which evaluates teaching, sent directly to Duke by mid-January. Each applicant is requested to include in their materials the name(s) of one or more members of the faculty of the Dept. of Mathematics at Duke working in their general area of research. The AMS Standard Cover Sheet should be completed online at http://www.mathjobs.org/. Applicants are encouraged to submit their other materials electronically at this site; they may also mail them to: **Appointments Committee, Department of Mathematics, Box 90320 Duke University, Durham, NC 27708-0320.** Acceptable file formats are postscript, pdf, dvi, gif and jpeg. Applications received by January 1, 2001 will be guaranteed full consideration; early application is advisable. Duke University is an affirmative action/equal opportunity employer. Email inquiries: appts@math.duke.edu

**DUKE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for two positions as a **VIGRE Postdoctoral Fellow** in the Department of Mathematics. Candidates should be U.S. citizens or residents and have completed a doctorate as of September 1, 2001 and show definite promise in research and teaching. The teaching load will be two courses during one semester and one course during the other; there will be a one-course per year reduction for significant involvement in Duke's VIGRE program. More information about Duke's VIGRE program can be found at http://www.math.duke.edu/vigre/. The appointments are for one year and are renewable for two additional years; they begin on September 1, 2001. Applicants please send (a) AMS standard cover sheet; (b) a vita; (c) a description of current and past research (1-3 pages); (d) a plan for future research, and have at least four letters of recommendation, including one which evaluates teaching, sent directly to Duke by mid-January. Each applicant is requested to include in their materials the name(s) of one or more members of the faculty of the Dept. of Mathematics at Duke working in their general area of research. The AMS Standard Cover Sheet should be completed online at http://www.mathjobs.org/. Applicants are encouraged to submit their other materials electronically at this site; they may also mail them to: **Appointments Committee, Department of Mathematics, Box 90320 Duke University, Durham, NC 27708-0320.** Acceptable file formats are postscript, pdf, dvi, gif and jpeg. Applications received by January 1, 2001 will be guaranteed full consideration; early application is advisable. Duke University is an affirmative action/equal opportunity employer. Email inquiries: appts@math.duke.edu

**DUKE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications and nominations are invited for a **tenure-track (Assistant Professor level) or tenured (Associate or Full Professor level) position** in the Mathematics Department in the area of probability and stochastic processes, or a closely related field. The position is to start September 1, 2001. Tenure-track applicants are expected to have outstanding research potential, normally including major contributions beyond the doctoral dissertation. Such applicants should send the materials described below, plus reprints or preprints, and/or dissertation abstract, and have four letters of evaluation, including one which evaluates teaching, sent directly to Duke by January 1, 2001. Tenure applicants are expected to have demonstrated leadership in research and should send the materials described below, plus a list of publications, a few selected reprints or preprints, and have three letters of evaluation, including one which evaluates teaching, sent directly to Duke by January 1, 2001. In addition the material described above, all applicants should send (a) an AMS cover sheet; (b) a vita; (c) a description of current and past research (1-3 pages); (d) a plan for future research. The AMS Standard Cover Sheet should be completed online at http://www.mathjobs.org/. Applicants are encouraged to submit their other materials electronically at this site; they may also mail them to: **Appointments Committee, Department of Mathematics, Box 90320 Duke University, Durham, NC 27708-0320.** Acceptable file formats are postscript, pdf, dvi, gif and jpeg. Applications received by January 1, 2001 will be guaranteed full consideration; early application is advisable. Duke University is an affirmative action/equal opportunity employer. Email inquiries: appts@math.duke.edu

**EMORY UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE -** The Department of Mathematics and Computer Science, Emory University, invites applications for several anticipated tenure track or tenured appointments effective 2001-2002. Search 1. Computer Science: up to two tenure track Assistant Professorships or tenured appointments at the rank of Associate Professor or Professor. We seek candidates with established research programs in systems research, with a preference for database, high performance computing, networking, or distributed systems. Exceptional candidates in other areas are also encouraged to apply. Applicants must have a PhD in Computer Science or a closely related field. Search 2. Geometry: up to two tenure track appointments at the rank of Assistant Professor. We seek candidates with established research programs in geometry; areas of special interest include (but are not limited to) algebraic geometry and differential geometry. Applicants must have a PhD in Mathematics or a closely related field. The department offers several undergraduate programs, a PhD in Mathematics and an MS in Computer Science, and applicants should have strong records, or promise, as undergraduate and graduate teachers. Applicants must provide CV's, with at least three recommenders' names, and have recommendation letters sent to: Professor Dwight Duffus, Screening Committee, Department of Mathematics and Computer Science, Emory University, Atlanta, GA 30322. Screening of applications will begin on 1 January 2001. Informal inquiries are welcome; please see our web page at http://www.mathcs.emory.edu/News/Ops/ for further details. Emory University is an Affirmative Action/Equal Opportunity Employer.

GEORGIA COLLEGE AND STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - The Department invites applications for a tenure-track position in mathematics at the assistant professor rank. A Ph.D. in mathematics or a closely related discipline is required, as well as a commitment to teaching and scholarship at a public liberal arts university. All specialties are welcome, with special consideration given to candidates who can help develop the department's actuarial science minor. Effective teaching, scholarship and university/community service are requirements for promotion and tenure. Please send a letter of application, CV, unofficial graduate transcripts, and three letters of recommendation to: Search Chair, Department of Mathematics and Computer Science, CBX 017, Georgia College & State University, Milledgeville, GA 31061. The cover letter should address career goals and views on teaching and scholarship in a liberal arts university. [Final candidates for the position will be required to submit official graduate transcripts.] Please indicate availability for interviews at the January Joint Mathematics Meetings of AMS/MAA. For additional information on the department and the position, please see the department's web page at http://www.gcsu.edu/acad\_affairs/coll\_artsci/mathcomp\_sci. GC&SU is an Equal Opportunity/Affirmative Action Employer.

GETTYSBURG COLLEGE - DEPARTMENT OF MATHEMATICS - Tenure-Track, Assistant Professor Position in Mathematics - Gettysburg College invites applications for a new tenure-track, assistant professor position in mathematics beginning August 2001. Applicants must have a Ph.D. in mathematics or applied mathematics or expect to complete all requirements for the degree by September 2001. Promise of excellence in teaching and commitment to a vigorous research program are essential. Preference will be given to an individual who is willing to teach a broad range of undergraduate mathematics courses and who has the desire to involve undergraduate students in research. Gettysburg College is a highly selective liberal arts college located within 90 minutes of the Baltimore/Washington area. Established in 1832, the College has a rich history and is situated on a 220-acre campus with an enrollment of 2,300 students. The College seeks to promote diversity in its community through its affirmative action/equal opportunity programs; included in an attractive benefits package is a Partner Assistance Program. Please send a letter of application explaining your interest in our department, a curriculum vitae, a brief description of your teaching methods and objectives, and a summary of your research goals to: Mathematics Search Committee, Department of Mathematics, Gettysburg College, Gettysburg, PA 17325. Also arrange for the committee to receive three letters of recommendation addressing teaching effectiveness and research potential. Completed applications received by December 31, 2000, will receive full consideration.

HARVEY MUDD COLLEGE - DEPARTMENT OF MATHEMATICS - Assistant Professor of Mathematics - Harvey Mudd College invites applications for a tenure-track assistant professorship. Preference will be given to candidates whose research is in some area of algebra (including algebraic combinatorics, algebraic number theory and algebraic geometry. Excellence in teaching is absolutely essential, as is evidence of a strong and ongoing research program. Candidates will be expected to teach courses in abstract algebra and discrete mathematics, must be willing to supervise undergraduate research, and work with others in the development of departmental programs. Harvey Mudd College is a highly selective undergraduate institution of science, engineering and mathematics; the average SAT score of entering students is over 1,480. More than one-third of the student body are National Merit Finalists, and one year of high school calculus is a requirement for admission. Each year there are over 20 graduates in mathematics, with approximately half going to graduate school. Over 40% of mathematics alumni from HMC have obtained a Ph.D. degree. The college enrolls about 650 students and is a member of the Claremont College consortium, which consists of four other undergraduate colleges and two graduate institutions, forming an academic community of about 5,000 students. There is an active and vital research community of over 40 mathematicians in Claremont. Claremont is situated approximately 35 miles east of downtown Los Angeles, in the foothills of the San Gabriel Mountains. The community is known for its tree-lined streets and village charm. It is an easy drive from Claremont to the cultural attractions of the greater Los Angeles area, as well as the ocean, mountains and deserts of southern California. Applicants should send a curriculum vitae, a description of their teaching philosophy and experience, a description of their current research program, and arrange to have three letters of recommendation sent to: Professor Arthur T. Benjamin, Chairman, Search Committee, Department of Mathematics, Harvey Mudd College, Claremont, CA 91711-5990. Further information about the college and department may be found at http://www.hmc.edu. Preference will be given to applications completed by January 5, 2001. Harvey Mudd College is an equal opportunity employer and is committed to the recruitment of applicants historically underrepresented on college faculties.

INDIANA UNIVERSITY, BLOOMINGTON - DEPARTMENT OF MATHEMATICS - Two tenure track positions will be available starting in the 2001-2002 academic year. Outstanding candidates with a Ph.D. in all areas of pure and applied mathematics and statistics are encouraged to apply. One of these positions is restricted to the area of statistics, and this position could be a senior position with tenure. Excellent research potential, as well as a commitment to teaching are required. Indiana University is an equal opportunity/affirmative action employer. Preference will be given to applications received by December 1, 2000. Please send a letter of application to: Search Committee, Department of Mathematics, Indiana University, 831 East 3rd Street, Rawles Hall, Bloomington, IN 47405-7106.

## INSTITUTE FOR MATHEMATICS AND ITS APPLICATIONS see advertisement under UNIVERSITY OF MINNESOTA / IMA - Director

**IOWA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** The Department of Mathematics invites applications and nominations for the position of department chair and professor of mathematics. The university administration recognizes the importance of mathematics to science and technology and is committed to maintaining and strengthening the research and teaching functions of the department. Applicants should possess effective administrative and interpersonal skills and be dedicated to promoting excellence in research and excellence in both graduate and undergraduate education. The department has two associate chairs to assist with the administration of the program. Applicants should have a distinguished and continuing record of research and graduate advising appropriate for appointment to the rank of full professor, and will be expected to maintain a strong research program. There will be additional faculty hires as present and future retirements proceed over the next few years. The chair will be expected to provide leadership and direction in this hiring. The department currently has fifty tenured or tenure-track faculty. Research areas include ordinary and partial differential equations, control theory, functional analysis, combinatorics, algebra, probability, logic, numerical methods, computational fluid dynamics, and mathematical biology. The department of Mathematics, Iowa State University, Ames, Iowa 50011-2064 (chairsearch@math.iastate.edu). Consideration of applications will begin December 1, 2000 and will continue until the position is filled. Iowa State University is an Equal Opportunity/Affirmative Action Employer. Qualified women, minorities and members of under-represented groups are encouraged to apply.

**IOWA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** The department seeks applicants, pending funding, for a tenure track position to begin in August, 2001 at the assistant professor level in the area of numerical analysis and computational mathematics. An excellent record in research and teaching is required, and experience beyond the Ph.D. is desirable. Exceptional applicants for a higher rank may be considered. We are interested in hiring mathematicians whose research programs are complementary to the existing strengths in the department and who can interact with current faculty in the department as well as faculty in other units of the university. For information about the department visit our website at www.math.iastate.edu. Applicants must submit a vita and a brief statement describing their research accomplishments and plans. They must also arrange for four letters of recommendation, one of which must address the applicant's teaching ability and experience. All application materials should be sent to: **Max Gunzburger, Department of Mathematics, Iowa State University, Ames IA 50011-2064.** Applicants whose completed applications are received by January 15, 2001 are assured of receiving full consideration. Iowa State University is an Equal Opportunity/Affirmative Action Employer and strongly encourages women and members of under-represented groups to apply.

JOHNS HOPKINS UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for an Assistant Professor in the general areas of algebra, analysis, geometry, number theory and topology. Applications should be sent to: Appointments Committee, Department of Mathematics, Johns Hopkins University 404 Krieger Hall, Baltimore, MD 21218-2689 and should include a complete curriculum vitae, at least four letters of recommendation (including a letter concerning teaching) and a description of current and planned research. Applications received by December 1, 2000 will be given priority. (Applications in probability, statistics, operations research, and numerical methods will not be considered; applicants in these areas should contact the Dept. of Mathematical Sciences in the School of Engineering.) The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minority and women candidates are encouraged to apply.

JOHNS HOPKINS UNIVERSITY - DEPARTMENT OF MATHEMATICS - The J. J. Sylvester Assistant Professorship in Mathematics - The Department of Mathematics invites applications for a nontenure track three year Assistant Professorship to be awarded again this year on July 1, 2001. Preference will be given to candidates who have received their Ph.D. within the last two years and who have demonstrated high potential in teaching and research in the general areas of Algebra, Analysis, Geometry, Number Theory and Topology. The position carries a teaching load of two courses one semester and one the other semester with a competitive salary and a discretionary research fund. Applications should be sent to: J.J. Sylvester Assistant Professorship, Department of Mathematics, Johns Hopkins University, 404 Krieger Hall, Baltimore, MD 21218-2689 and should include a complete curriculum vitae, at least four letters of recommendation (including a letter concerning teaching) and a description of current and planned research. Applications received by December 1, 2000 will be given priority. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minority and women candidates are encouraged to apply.

KANSAS STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Subject to budgetary approval, applications are invited for tenure-track and visiting positions commencing August 5, 2001. Preference will be given to specialists in Analysis and Geometry. Applicants must have strong research credentials and a commitment to excellence in teaching. A Ph.D. in mathematics or a Ph.D. dissertation accepted with only formalities to be completed is required. Letter of application, current vita, description of research, three letters of reference evaluating research, and one reference letter evaluating teaching should be sent to: Louis Pigno, Department of Mathematics, Cardwell Hall 138, Kansas State University, Manhattan, KS 66506. Offers may begin by December 4, 2000, but applications for positions will be reviewed until February 1, 2001, or until positions are closed. AA/EOE.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS - Applied Mathematics - Applications are invited for a limited number of positions in applied mathematics starting fall 2001. Available positions include instructorships, lectureships, assistant professorships, and possibly higher levels. Appointments will be made mainly on the basis of demonstrated research accomplishments and potential. Complete applications must be received by January 3, 2001. To apply, please send a vita with a description of your recent research and research plans, and arrange to have three letters of reference sent. Address: Committee on Applied Mathematics, Room 2-345, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA 02139-4307. MIT is an Equal Opportunity, Affirmative Action Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics may make appointments at the lecturer and at the assistant professor or higher levels in pure mathematics for the year 2001 - 2002. The teaching load will be nine hours for the academic year (eight hours for assistant professor appointments). Open to mathematicians with doctorates who show definite promise in research. Applications should be completed by January 15, 2001. Applicants please arrange to have sent (a) a vita; (b) three letters of reference; (c) a description of your most recent research; and (d) a research plan for the immediate future to: Pure Mathematics Committee, Massachusetts Institute of Technology, Room 2-263, 77 Massachusetts Ave., Cambridge, MA 02139-4307. M.I.T. is an Equal Opportunity, Affirmative Action Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS - C.L.E. Moore Instructorships in Mathematics - Open to mathematicians with doctorates who show definite promise in research. Teaching loads are six hours per week during one semester, and three hours per week during the other. Applications should be completed by January 1, 2001. Please arrange to have sent (a) a vita; (b) three letters of reference; (c) a description of the research in your thesis; and (d) a research plan for the next year to: Pure Mathematics Committee, Massachusetts Institute of Technology, Room 2-263, 77 Massachusetts Ave., Cambridge, MA 02139-4307. M.I.T. is an Equal Opportunity, Affirmative Action Employer.

MICHIGAN STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Chairperson - Michigan State University invites nominations and applications for the position of Chairperson of the Department of Mathematics. MSU is a land-grant and AAU institution with total enrollment of approximately 43,000 graduate and undergraduate students. The Department of Mathematics is a group I research department and a major participant in the instructional and research activities of the university. Its personnel include 68 tenure stream faculty and more than 125 graduate students in the areas of pure and applied mathematics and mathematics education. The Chair will lead the faculty in shaping and developing the department's research, instructional, and service programs, including recruitments into numerous forthcoming faculty openings. Candidates should possess a Ph.D. in the mathematical sciences, outstanding research credentials, and an established record of university and professional service appropriate for a tenured appointment at the rank of professor. Candidates should also demonstrate effective leadership, communication, and administrative skills. The new Mathematics Chair must be strongly committed to: supporting continued improvement in the department's research standing, promoting growth in the areas of applied mathematics and mathematics education, developing interdisciplinary research initiatives, furthering excellence in teaching and instructional innovation, and enhancing relations within and outside the mathematics community. The position of Chairperson carries tenure at the rank of professor, and is available on 1 September 2001. Salary will be competitive, and commensurate with qualifications. To apply, please send a vita and have at least four letters of recommendation sent to: **Professor Joel Shapiro, Chair Search Committe, Department of Mathematics, Michigan State University, East Lansing, MI 48824**. Applications will be considered until the position is filled. Completed applications (including letters of recommendation)

MICHIGAN STATE UNIVERSITY - DEPARTMENT OF STATISTICS AND PROBABILITY - The Department of Statistics and Probability at Michigan State University has a tenure track Assistant Professorship available beginning August 16, 2001. The candidate should have a Ph.D. with concentration in statistics and/or probability and a strong research and teaching potential. Preference will be given to candidates with research interests in statistics. Please have curriculum vitae and three recommendation letters sent to: Search Committee, Department of Statistics and Probability, A415 Wells Hall, Michigan State University, East Lansing, MI 48824-1027. Selection process will begin December 1, 2000 and continue until the position is filled. MSU is an Affirmative Action/Equal Opportunity Institution. Minorities and women are strongly encouraged to apply.

MICHIGAN TECHNOLOGICAL UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Applications are invited for a tenure-track position at the Assistant Professor level in Applied Mathematics starting August 2001. The successful candidate will demonstrate a strong research potential, the ability to develop an externally funded research program, and a dedication to effective teaching. Preference will be given to applicants who complement the research activities of the department, either in application areas or in mathematical theory and techniques. Specific application fields of interest are materials science, viscoelastic fluid dynamics, multiphase fluid dynamics and geophysics. Send vita and 3 letters of reference to: Applied Math Search Committee, Department of Mathematical Sciences, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295. Michigan Technological University is an equal opportunity educational institution/equal opportunity employer.

MICHIGAN TECHNOLOGICAL UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Statistics - Applications are invited for a tenure track position in Statistics starting August 2001. Ph.D., outstanding research potential, and a demonstrated record of teaching effectiveness required. Preference will be given to applicants in Computational Statistics, Spatial Statistics, and Experimental Designs. Send vita and 3 letters of reference to: Statistics Search Committee, Department of Mathematical Sciences, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931-1295. Michigan Technological University is an equal opportunity educational institution/equal opportunity employer.

MINNESOTA STATE UNIVERSITY MOORHEAD - DEPARTMENT OF MATHEMATICS - Tenure-track position at rank of assistant professor to begin August 2001. A Ph.D. or Ed.D. in mathematics education is strongly preferred. Substantial progress toward a terminal degree is required. Eligibility for licensure at some level K-12 and good communication skills are required. Preference will be given to candidates with evidence of successful teaching at the K-12 and college level. Interest or experience in teaching a mathematics methods course and evidence of ability to work effectively as a member of a teaching team are desired. Duties include teaching mathematics education methods and content courses and undergraduate mathematics courses. Other responsibilities include advising students, developing in-service workshops, service to the university and maintaining an appropriate level of professional activity. The teaching load is twelve hours per semester, which may include supervising student teachers. Screening of applications will begin January 15, 2001. Applications accepted until filled. Completed applications must include resume, MSUM Standard Application Form, graduate and undergraduate transcripts, and three current letters of reference. Apply to: Don Mattson, Chair, Department of Mathematics, Minnesota State University Moorhead, Moorhead, MN 56563, (218) 236-2274; fax number: (218) 236-3692; email: mattson@mnstate.edu. Minnesota State University Moorhead is an equal opportunity/affirmative action employer and educator. Women, minorities, and persons with disabilities are encouraged to apply.

NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY - DEPARTMENT OF MATHEMATICS - Mathematics Faculty - New Mexico Institute of Mining and Technology, invites applications for positions as assistant professor in applied mathematics, and statistics. These are tenure track positions beginning in Fall of 2001. The base salary of \$42,000 is negotiable based upon experience. New Mexico Tech offers bachelor's in mathematics and master's degrees in mathematics, operations research & statistics, and industrial mathematics. Minimum qualifications are a Ph.D. in mathematics, statistics, or the equivalent, strong record of teaching excellence, a promising research record, and excellent English and communication skills. For the applied mathematics position, preference will be given to those with specialties in Numerical PDEs, Industrial Math or modeling, interest in interdisciplinary research, research interests that complement those of the department. For the statistics position, preference will be given to those with specialties in applied probability & statistics, stochastic processes, or geostatistics, interest in interdisciplinary research, research interests that complement those of the department. The successful applicant will teach two or three courses per semester (five per year), ordinarily in their area of interest. Opportunities for research with existing research projects at New Mexico Tech include the Langmuir Laboratory for Atmospheric Research, the Geophysical Research Center, the Energetic Materials Research and Testing Center, the National Radio Astronomy Observatory, Aerojet, Petroleum Recovery Research Center, and other Socorro based companies. Current faculty interest are applied mathematics, differential equations, mathematical physics, integral equations, numerical analysis, optimization, graph theory, and statistics. The starting date is August 15, 2001. Applications received prior to January 15, 2001 will receive full consideration. Applications will be evaluated until the positions are filled. Send a Curriculum Vita, teaching evaluations, transcripts, and a letter describing your teaching philosophy and research interests. Also, have three letters of recommendation sent. Send all material to: New Mexico Institute of Mining and Technology, Human Resources, Wells Hall, Box 121D for the statistics position or Box 120D for the applied position, Socorro, NM 87801. Information about the department can be found at http://www.nmt.edu/~math/. Email applications NOT accepted. AA/EOE

NORTH CAROLINA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for a tenure track appointment at the assistant level in financial mathematics, beginning in the fall of 2001. Candidates should have a strong ongoing research program and a demonstrated skill in teaching. The candidate's areas of interest should complement the current research activities within the department in the broad areas of stochastic processes, partial differential equations and scientific computation. The successful candidate will participate in the creation and development of a multidisciplinary Masters program in Financial Mathematics and Engineering. Applicants should send a vita and, at least three letters of reference to: Financial Mathematics Search Committee, Department of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695-8205. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, veteran status, or disability.

NORTH CAROLINA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for a tenure track appointment at the assistant level in **dynamical systems**, beginning in the fall of 2001. Candidates should have a strong ongoing research program and a demonstrated skill in teaching. The candidate's areas of interest should complement the current research activities within the department in the broad areas of population biology and dynamics, mathematical biology, singular perturbations and shock waves. The NCSU campus and the Research Triangle Park offer opportunities for collaboration studying nonlinear problems in academic, industrial and government settings. Applicants should send a vita and, at least three letters of reference to: **Dynamical Systems Search Committee, Department of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695-8205.** All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, veteran status, or disability.

NORTH CAROLINA STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for a tenure track appointment at the assistant level in symbolic computation, beginning in the fall of 2001. Candidates should have a strong ongoing research program and a demonstrated skill in teaching. We are primarily interested in researchers with an orientation to computational number theory (and applications to cryptography and computer science) or to computational geometry (and applications to computer aided design and engineering). Applicants should send a vita and, at least three letters of reference to: Symbolic Computation Search Committee, Department of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695-8205. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, veteran status, or disability.

NORTHERN KENTUCKY UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Applications are invited for several tenure track positions in computer science, mathematics education, statistics, and mathematics at the assistant professor level beginning August 2001. Higher rank may be possible. Doctorate in a mathematical science required. Normal teaching load is twelve hours per semester. Quality teaching is the Department's highest priority; continued scholarly activity and service are required. Oral and written competency in English is mandatory. For further information about the Department, the University, or the positions, see http://www.nku.edu/~math/. Send letter of application, curriculum vita, transcript, and three letters of recommendation to: Thomas J. Kearns, Chair, Department of Mathematics and Computer Science, Northern Kentucky University, Highland Heights, KY 41099. Candidates will be invited to campus beginning January 16, 2001, continuing until the positions are filled. NKU is located in the Cincinnati metropolitan area and serves approximately 12,000 students, including some 375 mathematics, mathematics education, and computer science majors. NKU is an equal opportunity/ affirmative action employer.

**OHIO UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for a tenure-track position in Applied or Computational Mathematics beginning September 1, 2001. The appointment is expected to be at the rank of assistant professor; however, exceptional candidates will be considered for an associate professorship. Minimum qualifications for this position include a Ph.D. and great promise in research and teaching. We seek candidates who have research interests that complement those of the department, and are committed to strengthening our graduate and undergraduate programs. The salary is competitive, with an excellent fringe benefit package. Review of applications will begin on January 10, 2001. Send curriculum vitae, an outline of research plans, statement on teaching philosophy, and three letters of recommendation to: **Chair, Search Committee, Department of Mathematics, 321 Morton Hall, Ohio University, Athens, Ohio 45701-2979.** For more information about the department, see http://www.math.ohiou.edu/ Ohio University is an Equal Opportunity/Affirmative Action employer.

**PORTLAND STATE UNIVERSITY - DEPARTMENT OF MATHEAMATICAL SCIENCES -** Applications are solicited for a possible postdoctoral position (max 3 years) as an assistant professor in mathematical sciences, starting September 16, 2001. Applicants must have (or complete by September, 2001) a doctoral degree in pure or applied mathematics or statistics, demonstrated excellence in teaching, and evidence of outstanding research potential. Strong consideration will be given to candidates whose research interests most closely complement existing faculty and support a new professionally based Ph.D. program. Postdoctoral duties include teaching one course per term and being an active participant in the initiation of the new Ph.D. program. Further program information is available on the department's home page, www.mth.pdx.edu. Qualified applicants are invited to submit an application including (1) a letter of intent including AMS application cover page, (2) a curriculum vitae, and (3) three letters of recommendation. Send materials to: Search Committee, Department of Mathematical Sciences, Portland State University, P.O. Box 751, Portland, OR 97207-0751. Review of files will begin February 15, 2001 and continue until the position is filled. Portland State University is an Affirmative Action/Equal Opportunity Institution.

**PURDUE UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for tenure-track Assistant Professor or three-year Research Assistant Professor appointments beginning August 2001. Ph.D. by August 2001, exceptional research promise, and strong teaching record required. Applications will also be accepted for possible appointments at the Associate Professor/Professor level. Ph.D. and excellence in research and teaching required. Outstanding applicants from all mathematical research areas will be considered. Because the department has several openings in applied mathematics, candidates who have significant research accomplishments in applied mathematics or computational applied mathematics are especially encouraged to apply. Several positions may be available for terms ranging from one semester to two years beginning August 2001. All applicants should have research interests in common with Purdue faculty. Send vita, summary of research interests/plans, and arrange for three letters of recommendation (one addressing teaching) to be sent to: **Carl Cowen, Head, Department of Mathematics, Purdue University, West Lafayette, IN 47907-1395.** Review of applications will begin November 15, 2000 and continue until available positions are filled. Offers for tenure-track positions may be made at any time; some offers for RAP and visiting positions will be made before the end of January 2001. Purdue is an Affirmative Action/Equal Opportunity Employer.

PURDUE UNIVERSITY - DEPARTMENT OF STATISTICS - Faculty Position(s) in Statistics - The Department of Statistics at Purdue University has one or more openings for faculty positions. Screening will begin December 1, 2000, and continue until the position(s) is (are) filled. Essential Duties: Conduct advanced research in statistical sciences, teach undergraduate and graduate students and maintain service in the Statistics Department. Essential Qualifications: Require Ph.D. in Statistics or related field, in hand or expected by August 13, 2001. Candidates must demonstrate potential excellence in research and teaching. Salary and benefits are competitive and commensurate with qualifications. Rank and salary are open. Candidate for assistant professor should send a letter of application, curriculum vita and three letters of reference. For senior positions, send a letter of application or nominations, curriculum vita, and the names of three references. Purdue University is an AA/EO employer and educator. Send applications to: Mary Ellen Bock, Head, Department of Statistics, Purdue University, 1399 Mathematical Sciences Building, West Lafayette, IN 47907-1399, USA.

PURDUE UNIVERSITY CALUMET - DEPARTMENT OF MATHEMATICS, COMPUTER SCIENCE, AND STATISTICS - Mathematics Education Position - The Department of Mathematics, Computer Science, and Statistics, which is in the School of Engineering, Mathematics, and Science, and the School of Education at Purdue University Calumet seek applications for a joint tenure track appointment in Mathematics Education beginning August 2001. Qualifications: A doctorate in mathematics education with a strong graduate mathematics component or a Ph.D. in mathematics with extensive experience in mathematics education research is required. Three years of successful teaching of mathematics in middle school, junior high school, or high school is also required. A candidate must be eligible for a secondary license in mathematics teaching. Responsibilities: Duties and responsibilities include teaching undergraduate and graduate mathematics education and mathematics courses, including content and methods courses for prospective and in-service K-12 teachers, supervising secondary field experiences, and working collaboratively with public schools. Candidates must have a commitment to teacher education, to excellence in teaching, and to sustaining a vigorous research program in mathematics education. Rank and Salary: Rank is open. To be considered for appointment at the rank of Associate or Full Professor, a strong publication record is expected. The salary is competitive and fringe benefits are excellent. Department of Mathematics, Computer Science, and Statistics Programs: The Department of Mathematics, Computer Science, and Statistics offers Bachelor's and Master's programs in Mathematics, and a Master of Arts in Teaching for secondary teachers. The preservice secondary mathematics teaching majors comprise approximately half the undergraduate mathematics majors. The Department teaches all content courses in Mathematics Education for Majors in elementary and secondary education and collaborates with the School of Education in the delivery of the methods courses. In addition, the Department collaborates with the School of Education to provide specialization in mathematics education within the Elementary Education Master's Program. The Department has 22 full-time faculty, including five in Mathematics Education, and a mathematics educator who serves as a specialist in the Department's developmental program. School of Education Programs: The School of Education, in collaboration with other academic units, prepares and supports educational professionals and related specialists who are advocates and models of quality education and lifelong learning. Purdue University Calumet offers initial teacher licensure program (Bachelor of Arts degree) in elementary education and several programs (Bachelor of Arts and Bachelor of Science) in secondary education including, in addition to mathematics, science, social studies, English, and foreign language teaching. The School of Education also offers Masters of Science degrees in elementary education, secondary education, educational administration, instructional design and technology, and counseling and personnel services. Research Interests in Mathematics Education: Current research interests of the mathematics educators in the Department range from developing an understanding of how college students create mathematical knowledge to studying the teaching/learning process of elementary school students and teachers by using classroom teaching experiments. There are many opportunities to collaborate with school systems in the immediate vicinity of the campus for research, teacher enhancement, and curriculum development projects. The University and Community: Purdue University Calumet is located in Northwest Indiana adjacent to the southeast side of Chicago. As part of the Land Grant Purdue University system, this comprehensive university enrolls more than 8,000 undergraduates and 1,000 graduate students. To Apply: Submit a letter of application, curriculum vitae, graduate transcript, and three letters of reference to: Professor Chris Rasmussen, Chair of Search Committee, Department of Mathematics, Computer Science, and Statistics, Purdue University Calumet, Hammond, IN 46323. Fax: 219-989-2165; Phone: 219-989-2705; Email: raz@calumet.purdue.edu. Review of applications will begin December 4, 2000, and will continue until the position is filled. Purdue University Calumet is an Equal Opportunity, Affirmative Action employer.

ROCHESTER INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS AND STATISTICS - Applications are invited for a tenure-track position at the Assistant Professor level, starting September 2001. Candidates should have a Ph.D. in Mathematics or Statistics. The primary focus is a strong commitment to and proven ability in undergraduate teaching, although continued scholarly activity and professional development are expected. Preference will be given to candidates in the areas of applied mathematics, modeling, operations research or statistics with an interest in innovative instructional methods using current technology. The Department offers Bachelors degrees in Applied Mathematics, Computational Mathematics and Applied Statistics as well as a Masters degree in Industrial and Applied Mathematics. Applicants should send a letter of application, vita, a statement of teaching philosophy, a description of teaching experience, a statement of research activities and plans, and direct three letters of recommendation to: Chair, Faculty Search Committee, Department of Mathematics and Statistics, Rochester Institute of Technology, 85 Lomb Memorial Drive, Rochester, NY 14623-5603. For more information about RIT and our Department, please visit our web page at www.rit.edu/~673www/mathstat.html. Review of applications begins on December 1, 2000 and will continue until the position is filled. RIT is an Equal Opportunity/Affirmative Action Employer and members of protected classes are particularly encouraged to apply.

RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY - DEPARTMENT OF MATHEMATICS AT NEW BRUNSWICK - The Rutgers University Mathematics Department invites applications for the following positions that begin Fall, 2001. TENURE-TRACK OR TENURED POSITION. The Department anticipates at least one appointment at the level of Assistant Professor or above. Strong candidates in all fields are encouraged to apply. Candidates must have the Ph.D., outstanding research accomplishments in pure or applied mathematics, and concern for teaching. NSF-VIGRE POSTDOCTORAL FELLOWSHIP (non-tenure track). This non-renewable position includes three years of academic year and summer support, a teaching load of one course per semester, and other special features. Restricted to citizens or permanent residents of the United States who are within 18 months of the award of their Ph.D. Candidates should show outstanding promise of research ability in pure or applied mathematics, and have concern for teaching. HILL ASSISTANT PROFESSORSHIPS (non-tenure track). These three-year non-renewable positions include reduced teaching load for research. Candidates should have received the Ph.D., show outstanding promise of research ability in pure or applied mathematics, and have concern for teaching. NON-TENURE-TRACK ASSISTANT PROFESSORSHIPS. These are three-year nonrenewable positions. Candidates should have a Ph.D., show evidence of superior teaching accomplishments, and show promise of research ability. Applicants should send a printed resume, with the AMS Application Cover Sheet attached, and have four letters of recommendation (one of which evaluates teaching) sent to: SEARCH COMMITTEE, Dept of Math-Hill Center, Rutgers University, 110 Frelinghuysen Road, Piscataway NJ 08854-8019. In addition, an electronic version of the AMS Application Cover Sheet should also be submitted at the web site https://www.mathjobs.org/jobs. It is essential to fill out this cover sheet completely, including specific position(s) applied for and the AMS Subject Classification number of your area(s) of specialization. Rutgers is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minority-group members. The Department will begin reviewing applications for tenure-track and tenure positions November 1, 2000 and for non-tenure track positions December 1, 2000 and will continue its review until the positions are filled. Updated details of these positions will appear on the Rutgers Mathematics Department web page at http://www.math.rutgers.edu.

#### SAINT JOHN'S UNIVERSITY - see advertisement under COLLEGE OF SAINT BENEDICT / ST. JOHN'S UNIVERSITY

SAN JOSE STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Two tenure track positions in mathematics. At least one will be in the area of statistics. Assistant professor rank is preferred, but appointment to associate professor is possible in exceptional circumstances. To be considered for the position, candidates must have earned their Ph.D. in mathematics by August 2001. Excellence in teaching is of primary importance. Ideal candidate will have an interest in establishing and promoting a pre-actuarial program. Candidates must be sensitive to the educational goals of a multicultural population. Please send a cover letter, vita, graduate transcript(s), and three letters of reference to: Dr. Michael Burke, Chair, Department of Mathematics and Computer Science, San José State University, San José, CA 95192-0103. Cover letter should address your approach to teaching and your willingness to live in an area with a high cost of housing. Application deadline is March 1, 2000. EOE/AAE

SEATTLE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Three tenure-track positions in mathematics beginning September, 2001 - The positions are open to mathematicians in any area of pure or applied mathematics, but preference may be given to those whose teaching and research interests complement those of our mathematics faculty. At least two of the positions will be filled at the assistant professor level; for the third position, an exceptional applicant with qualifications and teaching experience appropriate to the associate professor level will be considered. Seattle University, founded in 1891, continues a 450 year tradition of Jesuit higher education within its Catholic heritage. The University's Jesuit ideals underscore its commitment to the centrality of teaching, learning and scholarship, of values-based education, of service and social justice, of lifelong learning and of educating the whole person. Located in the heart of dynamic Seattle, the university is the largest independent Catholic university in the Pacific Northwest, serving approximately 6000 undergraduate and graduate students. The Mathematics Department is a vital component of the School of Science and Engineering, providing teaching support for all areas of the university as well as for mathematics; strong teaching recommendations; a commitment to continued scholarly growth, to the use of technology in teaching, and to contributing to the mission of Seattle University. A complete application must include a cover letter addressing how you could contribute to our mission in addition to the AMS Standard Cover Sheet, curriculum vitae, unofficial graduate transcripts, statements of your teaching philosophy and research plans, and three letters of reference including phone numbers. Please send to: **Mathematics Search Committee, Mathematics Department, Seattle University, 900 Broadway, Seattle, WA 98122-4340**. Closing date: December 4, 2000. Seattle University is an Affirmative Action/Equal Opportunity educational institution and employer, and welcomes

SOUTHEAST MISSOURI STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Tenure-track Assistant Professorship in Mathematics Education beginning August 2001. Duties include teaching primarily mathematics content courses for elementary and middle education majors or secondary methods course. Requirements include a doctorate in mathematics education with the equivalent of master's degree in mathematics or doctorate in mathematics with significant experience in teacher education, successful collegiate teaching experience, and commitment to diversity. The application procedures and complete details are available at http://www5.semo.edu/math/. An Equal Opportunity /M-F/ Affirmative Action Employer.

SOUTHERN ILLINOIS UNIVERSITY, EDWARDSVILLE - DEPARTMENT OF MATHEMATICS AND STATISTICS - Southern Illinois University Edwardsville, a comprehensive state university 20 miles from downtown St. Louis, Missouri, invites applications for two tenure-track positions in Mathematics at the rank of assistant professor beginning August 2001. Applicants should have a Ph.D. in some field of mathematics. We will consider applicants who have a strong commitment to teaching, and a demonstrated capacity to perform research. For one position, preference will be given to candidates with a strong background in applied mathematics, numerical analysis, or computational mathematics; the successful candidate will teach precalculus, calculus, differential equations, discrete math, numerical analysis, and other upper level courses in mathematics and applied mathematics. For the second position, preference will be given to candidates with a strong background in abstract algebra, number theory, or related fields; the successful candidate will teach precalculus, calculus, discrete math, abstract and linear  $[\rightarrow]$ 

[ ] algebra, and other upper level courses in mathematics. The Department of Mathematics and Statistics has 16 full time faculty members and offers undergraduate programs in mathematics, applied mathematics, statistics, actuarial science, and secondary education, and master's programs in mathematics, statistics and operations research, and computational mathematics. Send a letter of application, curriculum vita, transcripts (unofficial transcripts are acceptable for now), and three letters of recommendation to: Chair of Search Committee, Department of Mathematics and Statistics, Campus Box 1653A, Southern Illinois University Edwardsville, Edwardsville, IL 62026. Please use the AMS Standard Cover Sheet. Review of applications will begin on December 15, 2000 and continue until the position is filled. As an affirmative action employer, SIUE offers equal employment opportunity without regard to race, color, creed or religion, age, sex, national origin, or disability.

SOUTHERN METHODIST UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for one tenure-track assistant professor position to begin in the fall semester of 2001. Applicants must provide evidence of outstanding research and a strong commitment to teaching at all levels. The Department of Mathematics has an active doctoral program in computational and applied mathematics. The department is interested in promoting interdisciplinary activity with the departments in engineering and science at SMU. To apply, send a letter of application with a curriculum vita, a list of publications and a research and a teaching statement to: The Faculty Search Committee, Department of Mathematics, Southern Methodist University, P.O. Box 750156, Dallas, Texas 75275-0156. Applicants must also arrange for three letters of recommendation to be forwarded to the Faculty Search Committee. Screening of applications will begin December 8, 2000. To ensure full consideration for the position, the application must be postmarked by December 8, 2000, but the committee will continue to accept applications until the position is filled. The committee will notify applicants of its employment decision after the position is filled. SMU will not discriminate on the basis of race, color, religion, national origin, sex, age, disability or veteran status. SMU is also committee can be contacted by sending email to mathsearch@mail.smu.edu. [Tel: (214) 768-2506; Fax: (214) 768-2355]

STANFORD UNIVERSITY - DEPARTMENT OF MATHEMATICS - The department expects to make at least one Szego assistant professor or tenure track assistant professor appointment beginning in September 2001, among the following fields: (1) analysis, (2) geometry or topology, (3) algebra, number theory or logic, (4) applied mathematics or probability. Applicants for a Szego Assistant Professor position should not be more than 2 years from the PhD. Candidates should send a letter of application and a curriculum vitae, including a list of publications, and a cover sheet clearly stating the following: name, area of specialization, institution, (expected) date of Ph.D., and Ph.D. advisor. Also the candidate should arrange to have three letters of recommendation and some evidence of commitment to excellence in teaching sent to: Professor Leon Simon, Department of Mathematics, Stanford University, Stanford CA 94305 by January 15, 2001. Stanford is an Equal Opportunity, Affirmative Action Employer, and welcomes applications from women and minorities.

THE STATE UNIVERSITY OF NEW YORK AT BINGHAMTON - DEPARTMENT OF MATHEMATICAL SCIENCES - The Department of Mathematical Sciences at Binghamton University (The State University of New York at Binghamton) invites applications for a non-tenure-track three-year postdoctoral position in mathematics. Qualifications: A recent Ph.D. in mathematics or Ph.D. expected by Summer 2001, evidence of teaching ability and outstanding research potential. Research areas near those of current faculty will have priority. Screening begins January 1, 2001. Send CV and evidence of research and teaching credentials to: Erik Pedersen, Chair, Department of Mathematical Sciences, Binghamton University, Binghamton, NY 13902-6000. Also arrange for three letters of recommendation to be sent. Phone: 607-777-2148. Fax: 607-777-2450. Email: Postdoc\_Rec@math.binghamton.edu. The Department URL is http://math.binghamton.edu. Binghamton University is an equal opportunity/affirmative action employer.

THE STATE UNIVERSITY OF NEW YORK AT BINGHAMTON - DEPARTMENT OF MATHEMATICAL SCIENCES - The Department of Mathematical Sciences at Binghamton University (The State University of New York at Binghamton) invites applications for an assistant/associate professor in mathematics. Qualifications: A substantial research program in progress and a solid record of effective teaching. Desired: Graduate level teaching and research grants. Areas of interest related to activities of our current faculty have priority. Screening begins January 1, 2001. Send CV, evidence of research, teaching credentials, and three letters of recommendation to: Erik Pedersen, Chair, Department of Mathematical Sciences, Binghamton University, Binghamton, NY 13902-6000. Phone: 607-777-2148. Fax: 607-777-2450. Email: Junior\_Rec@math.binghamton.edu. The Department URL is http://math.binghamton.edu. Binghamton University is an equal opportunity/affirmative action employer.

THE STATE UNIVERSITY OF NEW YORK AT BINGHAMTON - DEPARTMENT OF MATHEMATICAL SCIENCES - The Department of Mathematical Sciences at Binghamton University (The State University of New York at Binghamton) invites applications for an associate/full professor in analysis. Branches of analysis with a connection to the areas of some current faculty will have priority. Desired qualifications: A substantial research program, research grants, and a strong teaching record at the undergraduate and graduate levels. Screening begins January 1, 2001. Send CV, evidence of research, teaching credentials, and three letters of recommendation to: Erik Pedersen, Chair, Department of Mathematical Sciences, Binghamton University, Binghamton, NY 13902-6000. Phone: 607-777-2148. Fax: 607-777-2450. Email: Senior\_Rec@math.binghamton.edu. \_. The Department URL is http://math.binghamton.edu. Binghamton University is an equal opportunity/affirmative action employer.

SYRACUSE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for a tenure-track position at the Assistant Professor level beginning August 2001. Candidates should have a Ph.D. in mathematics or mathematical statistics, a strong research record and potential, and a strong teaching record and potential. Preference given to candidates whose research interests are in either algebra/topology or applicable mathematics. For full details see our webpage at http://math.syr.edu. Preference also given to candidates whose research accomplishments and potential overlap or complement those of existing faculty. Postdoctoral experience is desirable. Applications should include a cover letter, CV, three letters of recommendation about the applicant's research, and at least one letter of recommendation about the applicant's teaching. Address applications to: Chair, Department of Mathematics, Syracuse University, Syracuse, NY 13244. To be assured of full consideration, applications must be received by December 30, 2000. Syracuse University is an Equal Opportunity/Affirmative Action Employer committed to fostering a diverse faculty.

**TEXAS A&M UNIVERSITY - DEPARTMENT OF MATHEMATICS -** Applications are invited for tenured and tenure-eligible faculty positions beginning fall 2001. The field is open, but we particularly seek applications from individuals whose mathematical interests would augment and build upon existing strengths both within the Mathematics Department as well as other departments in the University. Salary, teaching loads and start-up funds are competitive. For a **tenured position** the applicant should have an outstanding research reputation and would be expected to fill a leadership role in the department. An established research program, including success in attracting external funding and supervision of graduate students, and a demonstrated ability and interest in teaching are required. Informal inquiries are welcome. For an **Assistant Professorship**, we seek strong research potential and evidence of excellence in teaching. Research productivity beyond the doctoral dissertation will normally be expected. Senior positions may be for a semester or one year period and the number available will depend on funding. [  $\rightarrow$  ]

[ < ] The Visiting Assistant Professor positions are for a three year period. They are intended for those who have recently received their Ph.D. and preference will be given to mathematicians whose research interests are close to those of our regular faculty members. In addition, as part of our VIGRE grant, we expect to have up to four positions carrying a one-course-per-semester teaching load. For full consideration, the complete dossier should be received by January 15, 2001. Applicants should send the completed "AMS Application Cover Sheet", a vita, and arrange to have letters of recommendation sent to: Faculty Hiring, Department of Mathematics, Texas A&M University, College Station, Texas 77843-3368. Further information can be obtained from: http://www.math.tamu.edu/hiring. Texas A&M University is an EOE/AA employer and the Department encourages applications from women and minorities.

TEXAS TECH UNIVERSITY - DEPARTMENT OF MATHEMATICS AND STATISTICS - Applications are invited for at least three tenure-track assistant professor positions beginning Fall 2001. Applicants must have a Ph.D. by the starting date of August 15, 2001. Priority will be given to candidates in 1) Biomathematics, 2) Statistics, 3) Pure Mathematics, with research interests compatible with those of the department. The successful candidate must show strong promise or accomplishment in research and teaching. Texas Tech University is committed to diversity among its faculty. Women and minorities are strongly encouraged to apply. Please send a resume, a completed AMS standard cover sheet, and have three letters of recommendation sent to: Alex Wang, Hiring Chair, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042. Review of applications will begin immediately. Additional information is available at http://ttmath.ttu.edu/~awang/employ/employ.html. Texas Tech is an AA/EO employer.

TUFTS UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for an Assistant Professorship to begin September 1, 2001. Initial one year contract, renewable to a maximum of three years. Ph.D., promise of strong research and evidence of strong teaching ability required. Research interests preferred: Geometric group theory. The teaching load will be two courses per semester. Applicants should send a curriculum vitae and have three letters of recommendation sent to: Kim Ruane, Search Committee Chair, Department of Mathematics, Tufts University, Medford, MA 02155. Review of applications will begin January 25, 2001 and continue until the position is filled. Tufts University is an Affirmative Action/Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

TUFTS UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for a tenure-track Assistant Professorship to begin September 1, 2001. Initial one year contract, renewable to a maximum of three years. Ph.D., promise of strong research and evidence of strong teaching ability required. Research interests preferred: Numerical linear algebra. The teaching load will be two courses per semester. Applicants should send a curriculum vitae and have three letters of recommendation sent: Misha Kilmer, Search Committee Chair, Department of Mathematics, Tufts University, Medford, MA 02155. Review of applications will begin January 25, 2001 and continue until the position is filled. Tufts University is an Affirmative Action/Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM - DEPARTMENT OF MATHEMATICS - Applications are invited for two tenure-track positions at the assistant professor level. Applicants should have demonstrated strong potential in research and a commitment to excellence in teaching. Postdoc experience is desirable. We are especially interested in applicants with expertise in either geometric analysis, nonlinear p.d.e.'s, or inverse problems. Applicants whose research is compatible with the department's current research interests are also invited to apply. Please see our web page at http://www.math.uab.edu. Review of applications will begin December 1, 2000. In order to apply, send a curriculum vita and completed AMS standard cover sheet (http://www.ams.org/employment/coversheet-info.html) giving the AMS Subject Classification number. Please arrange for at least three letters of reference to be sent. All relevant materials should be sent to: Search Committee, Department of Mathematics, University of Alabama at Birmingham, Birmingham, AL 35294-1170. UAB is an AA/EO Employer.

THE UNIVERSITY OF ALABAMA AT TUSCALOOSA - DEPARTMENT OF MATHEMATICS - Director of Introductory Mathematics - The department invites applications for a tenure-track position as Director of Introductory Mathematics at the assistant/associate professor level to begin in June 2000. This is a 12month position. Candidates must possess a doctorate in mathematics or a doctorate in mathematics education with a Master's degree in mathematics (or the equivalent). The Director of Introductory Mathematics has primary responsibility for curriculum development, coordinating and scheduling introductory mathematics courses, and supervision of instructors and GTAs. Candidates must have successful teaching experience at the developmental level and post-secondary level, possess excellent communication skills, demonstrate knowledge of compensatory mathematics programs, materials, and methods, and have strong organizational skills. We are particularly interested in candidates with knowledge/experience in computer-based instruction. In addition, the Director is expected to teach at least one course per semester and to engage in scholarship in mathematics; The University of Alabama; Box 870350; Tuscaloosa, AL 35487-0350. Review of applications will begin in February and continue until position is filled. The University of Alabama is an AA/EO employer. For more information about the position or institution: http://www.ua.edu/

UNIVERSITY OF ALASKA, ANCHORAGE - DEPARTMENT OF MATHEMATICAL SCIENCES - The University of Alaska Anchorage invites applications for an entry level tenure-track position at the rank of Assistant Professor, beginning August 2001. Requirements include a Ph.D. in mathematics and a commitment to teaching a variety of mathematics courses. For more information on the vacancy announcement and application procedures, please contact the University of Alaska Anchorage, Human Resource Services, Administration Building, Suite 245, 3211 Providence Drive, Anchorage, AK 99508-8136, phone: 907-786-4608, www.finsys.uaa.alaska.edu/uaahrs. UAA is an AA/EO Employer and Educational Institution.

UNIVERSITY OF CALIFORNIA, DAVIS - DEPARTMENT OF MATHEMATICS - The Department of Mathematics at the University of California, Davis, is soliciting applications for a tenure-track/tenured position and a few Visiting Research Assistant Professor (VRAP) positions starting July 1, 2001. These positions and appointments are contingent upon budgetary and administrative approval. Appointment of the tenure-track/tenured position will be made commensurate with qualifications. It will normally be made at the level of Assistant Professor, but exceptional candidates will be considered for Associate Professorship with tenure. The Department of Mathematics plans to fill the tenure-track/tenured position in the area of Applied Mathematics/Scientific Computation. However, applications from exceptionally strong candidates with demonstrated excellence in the following areas are also considered: 1) Analysis and Partial Differential Equations; 2) Discrete Mathematics; 3) Geometry and Topology; and 4) Mathematical Physics. Minimum qualifications for this position include a Ph.D. degree in mathematical sciences and great promise in research and teaching. Duties include mathematical research, undergraduate and graduate teaching (4.0 quarter courses per year), and departmental and university service. Candidates for the Associate Professor position must have demonstrated outstanding attainment in research and teaching. The VRAP positions are renewable for a total of three years with satisfactory performance in research and teaching. The VRAP applicants are required to have completed their Ph.D. by the time of their appointment, but no carlier than 1997. The Department is interested in applicants in 1) Analysis and Partial Differential Equations; 2) Applied Mathematics; 3) Discrete Mathematics; 4) Geometry and Topology; 5) Mathematical Physics; and 6) Numerical Analysis and Scientific Computation. Applications will be accepted until the positions are filled, but to receive full consideration, the application should be received by Decembe

[ < ] Committee, Department of Mathematics, University of California, One Shields Avenue, Davis, CA 95616-8633. Our Application Form is identical to the AMS Standard Cover Sheet. Additional information on the Department may be found on the World Wide Web at http://math.ucdavis.edu/. The University of California, Davis, is an affirmative action/equal opportunity employer. The University undertakes affirmative action to assure equal employment opportunity for minorities and women, for persons with disabilities, and for special disabled veterans, Vietnam era veterans, and any other veterans who served on active duty during a war or in a campaign or expedition for which a campaign badge has been authorized.

UNIVERSITY OF CALIFORNIA, LOS ANGELES - DEPARTMENT OF MATHEMATICS - Subject to availability of resources and administrative approval, the following positions are available: (1) Several tenure-track and senior positions in all areas of mathematics. (2) Several E.R. Hedrick Assistant Professorships. Salary is \$50,800. Three year appointment. Teaching load: four quarter courses per year, which may include one advanced course in the candidate's field. (3) Several Research Assistant Professorships in Computational and Applied Mathematics (CAM). Salary is \$50,800. Three year appointment. Teaching load: normally is reduced to two or three quarter courses per year by research funding as available; may include one advanced course in the candidate's field. (4) Several Adjunct Assistant Professorships or Lectureships in the Program in Computing (PIC). Applicants for the Adjunct position must show very strong promise in teaching and research in an area related to computing. Teaching load: four one-quarter programming courses each year and one seminar every two years. One-year initial appointment, with the option of applying for renewal for a second year and possible longer, up to a maximum service of four years. Salary is \$54,400. Applicants for the Lectureship must show very strong promise in the teaching of programming. An M.S. in Computer Science or equivalent degree is preferred. Teaching load: six one-quarter programming courses per year. One-year appointment, probably renewable one or more times, depending on the needs of the program. Salary is \$43,152 or more, depending on experience. (5) Several VIGRE Assistant Professorships. Hedrick, CAM, or PIC applicants, who are U.S. citizens or permanent residents, may also apply for a VIGRE Assistant Professor position. Three-year appointment. Salary is \$50,800. The successful recipient will receive a summer stipend of \$6,500 for two summers and \$2,500 per year for travel, equipment, and supplies for three years. Teaching load: 3 courses per year. (6) Several Adjunct Assistant Professorships and Research Postdocs. Up to one year appointment, with the possibility of renewal. Strong research and teaching background required. Salary \$46,800-\$50,800. Teaching load for Adjuncts: five quarter courses per year. (7) Several visiting instructorships. For more details, see http://www.math.ucla.edu/~search. To apply, complete the application on the website, or send email to search@math.ucla.edu or write to: Staff Search, Department of Mathematics, University of California, Los Angeles, CA 90095-1555. Preference will be given to applications completed by January 8, 2001. UCLA is an Equal Opportunity/Affirmative Action Employer. Under Federal law, the University of California may employ only individuals who are legally authorized to work in the United States as established by providing documents specified in the Immigration Reform and Control Act of 1986.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA - DEPARTMENT OF MATHEMATICS - Faculty Positions - The University of California, Santa Barbara invites applications for the following positions in the Department of Mathematics, with the appointments to be effective July 1, 2001. ASSISTANT PROFESSOR POSITION: Candidates for this tenure track position must possess a Ph.D. by September 2001. The department's priorities are: 1. Numerical analysis or applied mathematics; in particular, the development, analysis and numerical resolution of nonlinear models from applied science. 2. Topology and geometry, particularly on the interface between the two fields. Demonstrated research excellence and potential to become an effective teacher are required. Candidates who best enhance the long-term research plans of the department will be given preference. LECTURER WITH POTENTIAL SECURITY OF EMPLOYMENT: Candidates must possess a Ph.D. in Mathematics by September 2001. The duties of this position primarily consist of teaching and coordination of large courses at the introductory level or courses on mathematics education for prospective teachers, orientation, training, supervision and evaluation of teaching assistants, and coordination of outreach efforts. Evidence of effective teaching and excellent interpersonal skills are required, and preference will be given to candidates who are familiar with instructional computing and contemporary methods of instruction. KY FAN ASSISTANT PROFESSORSHIP: The Ky Fan Assistant Professorship is a special two-year nonrenewable position which carries a research stipend and a course load of four one-quarter courses per year. Candidates must possess a Ph.D. by September 2001 and should have held their Ph.D. for no more than five years as of January 1, 2001. Candidates will be considered in the following areas: algebra/number theory, differential geometry, analysis, numerical analysis/applied mathematics, and low-dimensional topology. Selection will be based primarily on research achievement, but documented evidence of satisfactory teaching is necessary, and departmental research priorities will be taken into account. VISITING POSITIONS: Subject to availability of funds, one or more special one-year visiting assistant professorships may be available, with possibility of renewal for a second year. These positions carry a teaching load of five onequarter courses per year. Excellence in research, potential for interaction with faculty at UC Santa Barbara and evidence of good teaching are required. Candidates must possess a Ph.D. by September 2001. Applicants for these positions should send application materials to the APPROPRIATE COMMITTEE: the Numerical/Applied Committee, the Topology/Geometry Committee, the Lecturer PSOE Committee, the Ky Fan Committee, or the Visiting Assistant Professor Committee, at the Department of Mathematics, University of California, Santa Barbara, CA 93106-3080. These materials should include a vita, a publication list, a statement of research interests and teaching philosophy and the American Mathematical Society Cover Sheet (available online at http://www.ams.org). Include an email address and fax number if available. Applicants should also arrange to have at least four letters of recommendation (at least one of which is directed towards teaching) sent to the appropriate committee. Applicants for the tenure track position or the Ky Fan Assistant Professorship will automatically be considered for the visiting positions upon request, so duplicate applications are unnecessary. Applications, which are postmarked by December 22, 2000, will be given full consideration. UCSB is an affirmative action/equal opportunity employer.

UNIVERSITY OF CALIFORNIA AT SANTA BARBARA - DEPARTMENT OF STATISTICS AND APPLIED PROBABILITY - invites applications for open-level position, salary and rank dependent on qualifications, starting July 1 2001. Statistical Methodology or Applied Statistics specialization preferred, but other specializations in Statistics and Applied Probability considered. Requires Ph.D. in Statistics and demonstrated excellence in research and teaching. Applications for anticipated Lecturer and visiting positions are also invited. Current resume, papers and three reference letters to: Search Committee, Department of Statistics and Applied Probability, University of California, Santa Barbara, CA 93106-3110, USA. Apply by December 14, 2000 for primary consideration, however position open until filled. An EE/AO employer. Women and minorities are encouraged to apply.

UNIVERSITY OF COLORADO AT BOULDER - DEPARTMENT OF APPLIED MATHEMATICS - Assistant Professor - Applications are invited for a tenure-track assistant professorship to begin August 2001. Preference will be given to those candidates whose research emphasis is in statistics, stochastic partial differential equations or areas of applied probability. The teaching load is three courses per year. Areas of research expertise within the Department include computational mathematics, nonlinear waves and dynamics, analysis of differential equations, physical applied mathematics, and applied probability. Further information can be found on the Department's web page: http://amath.colorado.edu/appm/. Applicants should send a letter of application, a current curriculum vitae, a statement of research interests, an AMS Standard Cover Sheet (see http://www.ams.org/employment/cover-template.doc) and three letters of recommendation (sent directly) to: Chair, Search Committee, Department of Applied Mathematics, Campus Box 526, University of Colorado, Boulder, CO 80309. Review of applications will begin November 15, 2000 and will continue until the position is filled. The University of Colorado at Boulder is committed to diversity and equality in education and employment.

UNIVERSITY OF DAYTON - DEPARTMENT OF MATHEMATICS - The Department of Mathematics at the University of Dayton invites applications for anticipated multiple tenure track positions at the assistant or associate professor level starting in August 2001. Candidates must have a Ph.D. degree in mathematics, applied mathematics, mathematics education or statistics. One position focuses on statistics, one on analysis or applied mathematics and one on mathematics education. For other positions no preference is given to the research area, but the positions will be filled based on the current needs of the department. For all positions, applicants must have a strong commitment to research and the potential to become an effective teacher. Responsibilities for the analysis or applied mathematics position include teaching applied mathematics courses at the graduate level, and advising and curriculum development in the master's level program in applied mathematics. Responsibilities also include teaching a broad range of mathematics courses at the undergraduate level. Responsibilities for the statistics position include teaching statistics at the master's level, and advising and curriculum development in both the undergraduate program and the master's level program. Responsibilities for the position in mathematics education include teaching, advising, and curriculum development in support of K-12 pre-service and in-service mathematics teachers. The selection process begins December 4, 2000. To receive full consideration, all materials must be received by January 17, 2001. The application package should consist of a resume, three letters of recommendation, a statement of research plans and a statement of teaching philosophy. Both teaching and research abilities should be addressed in the letters. Please include an email address in your correspondence. Send application materials to: Dr. Joe Mashburn, Chair of the Search Committee, Department of Mathematics, University of Dayton, Dayton, OH 45469-2316. Feel free to contact the search committee at joe.mashburn@udayton.edu. Further information can be obtained at http://www.udayton.edu~mathdept. The University of Dayton is a private comprehensive Catholic university founded by the Society of Mary in 1850. It has more than 6,000 undergraduates and 3,000 graduate students. The Department of Mathematics offers B.A. and B.S. degrees in mathematics and the M.S. degree in applied mathematics. The University of Dayton is an Equal Opportunity/Affirmative Action employer. Women, minorities, individuals with disabilities and veterans are encouraged to apply. The University of Dayton is firmly committed to the principle of diversity.

UNIVERSITY OF FLORIDA - DEPARTMENT OF MATHEMATICS - Applications are invited for three tenure-track positions at the assistant professor level in: (i) Topology, (ii) Number Theory, (iii) Applied Mathematics. Priority is given to candidates who can interact with existing groups in the department. Appointments commence August 2001. Applicants must show strong research promise and are expected to excel in teaching as well. Applicants must forward curriculum vitae and list of publications to: Chair of Search Committee, Department of Mathematics, 358 Little Hall, University of Florida, Gainesville, FL 32611-8105. Applicants should ask referees to send three letters of recommendation directly to the above address. Completed applications are due December 15, 2000. The Department welcomes applications from women and minority candidates. The University of Florida is an EEO/AA institution. Anyone requiring special assistance in completing the application should contact the Search Committee Chair. For more information about the position or institution: http://www.math.ufl.edu

UNIVERSITY OF GEORGIA - DEPARTMENT OF MATHEAMTICS - Two postdoctoral positions with the title part-time instructor postdoctoral associate, offered by the Department of Mathematics beginning in the 2001-2002 academic year. The positions are for two years with a possibility of renewal for a third year. The department especially encourages applications from women and minorities. Duties consist of teaching three courses per year and conducting original research. Applicants are encouraged to identify a member of the current faculty with whom they would like to work. Eligibility: Applicants must exhibit potential for significant research and the skills necessary to be an excellent teacher. Deadline: To assure full consideration applications must be received by December 1,2000. Application information: To apply, send a vita with a list of publications and four letters of recommendation to: Chair, Search Committee, Department of Mathematics, The University of Georgia, Athens, GA 30602. Inquiries may be sent via email to search@math.uga.edu. The University of Georgia is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF GEORGIA - DEPARTMENT OF MATHEMATICS - Assistant Professor Positions - Applications are invited for four tenure-track positions at the rank of assistant professor, to begin in August, 2001. Candidates should have a Ph.D. in pure or applied mathematics and should exhibit outstanding research potential as well as a commitment to excellence in teaching. The area of priority for one of these positions is number theory. Applications from all areas of pure and applied mathematics will be considered for the other three positions. One of these three positions is designated to support teacher preparation and the teaching duties associated with this position will include mathematics content courses for education majors. Applicants should submit a completed AMS cover sheet, a curriculum vitae and a brief statement about their current and future research plans. Candidates for the position involving teacher preparation should include a statement about their interest in this field. Send all materials to: Search Committee Chair, Dept. of Mathematics, University of Georgia, Athens, GA 30602. They should also arrange to have three letters of recommendation concerning research and one concerning teaching sent directly to the above address. Inquiries may be sent via email to search@math.uga.edu. The University of Georgia is an Affirmative Action/Equal Opportunity Employer that is committed to increasing the diversity of its faculty. We especially encourage applications from women, minorities and under represented groups. To assure full consideration applications must be received by Dec. 1, 2000.

UNIVERSITY OF KANSAS - DEPARTMENT OF MATHEMATICS - Applications are invited for one or more tenure-track positions at the assistant or associate professor level beginning August 18, 2001, January 1, 2002, or as negotiated. (This position(s) is contingent on final budgetary approval.) Preference will be given to candidates in analysis, numerical analysis, and stochastic analysis/control. Candidates at the assistant professor level must have a Ph.D. in math or a related field or its requirements completed by August 18, 2001. Postdoctoral experience is preferred. Candidates at the associate professor level must have a Ph.D. in math or a related field and their research should be in the area of stochastic analysis/control with an outstanding record of research accomplishments, a proven ability to attract research support, a strong commitment to undergraduate and graduate teaching, and a record of leadership in research. Letter of application, detailed resume with description of research, completed AMS application form, and three recommendation letters should be mailed to: Jack Porter, Chair, Department of Mathematics, 405 Snow Hall, University of Kansas, Lawrence, KS 66045-2142 (or faxed to (785) 864-5255). For more details see www.math.ukans.edu/jobs or contact kumath@math.ukans.edu. Deadlines: Review of applications will begin on November 15, 2000 and will continue until the position(s) are filled. EO/AA Employer.

UNIVERSITY OF KANSAS - DEPARTMENT OF MATHEMATICS - Applications are invited for a temporary position at the assistant professor level beginning August 18, 2001, January 1, 2002, or as negotiated. (This position is contingent on final budgetary approval.) This position is normally renewable for a second and third year. Preference will be given to candidates in topology/set theory. Candidates must have a Ph.D. in math or related field or its requirements completed by August 18, 2001. Letter of application, detailed resume with description of research, completed AMS application form, and three recommendation letters should be mailed to: Jack Porter, Chair, Department of Mathematics, 405 Snow Hall, University of Kansas, Lawrence, KS 66045-2142 (or faxed to (785) 864-5255). For more details see www.math.ukans.edu/jobs or contact kumath@math.ukans.edu. Deadlines: Review of applications will begin on November 15, 2000 and will continue until the position is filled. EO/AA Employer.

UNIVERSITY OF KENTUCKY - DEPARTMENT OF MATHEMATICS - Applications are invited for at least two tenure-track assistant professorships to begin in fall 2001 (subject to budgetary approval). We are interested in applicants in the areas of discrete mathematics/combinatorial optimization, numerical partial differential equations and continuum mechanics/mathematical materials science. However, applicants in other areas are also welcome. We encourage applications from women and minorities. UK is an Equal Opportunity Affirmative Action Employer. For more information go to http://www.ms.uky.edu/~math/Info/news\_announce.html# Jobs

UNIVERSITY OF MARYLAND, COLLEGE PARK - DEPARTMENT OF MATHEMATICS - Avron Douglis Lectureships - Applications are invited for lectureships, starting Fall 2001. These positions are for recent Ph.D. recipients, with a preference for those not more than one year past the Ph.D. degree. The Lectureship is for two years and is non-renewable. Candidates must have superior research potential and a strong commitment to teaching. The Department of Mathematics provides an excellent scientific environment to foster the professional development of junior mathematicians. The teaching duties consist of three courses per year. The salary is \$45,000 per academic year, supplemented by a \$1,000 research stipend. Priority will be given to applications completed by December 15, 2000. The University of Maryland is an Equal Opportunity and Affirmative Action employer that strongly encourages applications from female and minority candidates. Please send a curriculum vitae and AMS Standard Cover Sheet, and arrange for three or more letters of recommendation, at least one of which speaks to the applicant's teaching credentials, to be sent to: Douglis Lectureship Committee, Department of Mathematics, University of Maryland, College Park, MD 20742.

UNIVERSITY OF MARYLAND, COLLEGE PARK - DEPARTMENT OF MATHEMATICS - Tenured and Tenure-track positions - Applications are invited for tenured and tenure-track positions in the Department of Mathematics. Strong preference will be given to candidates in (1) Applied harmonic analysis, (2) Algebraic geometry, and (3) Geometry, but candidates from all areas will be considered. Candidates at all levels will be considered. Priority will be given to applicants received by November 1, 2000. Appointments will commence in Fall 2001. The University of Maryland is an Equal Opportunity and Affirmative Action employer that strongly encourages applications from female and minority candidates. Please send a curriculum vitae and AMS Standard Cover Sheet, and arrange for three letters of recommendation to be sent to: The Hiring Committee, Department of Mathematics, University of Maryland, College Park, MD 20742.

UNIVERSITY OF MARYLAND, COLLEGE PARK - DEPARTMENT OF MATHEMATICS - Computational Nonlinear Dynamics Faculty Position - A theoretical nonlinear dynamicist with strong interest in computation is sought for a tenured or tenure-track appointment in the Department of Mathematics, possibly joint with the Institute for Physical Science and Technology. An outstanding record of research accomplishments and a proven ability to attract research support are important for a senior position. Good teaching is a priority of the university. Applications should be sent to Chair's Office, Computation Nonlinear Dynamics, Department of Mathematics, University of Maryland, College Park, MD 20742-4015. Priority will be given to applications received by December 31, 2000. Appointments will commence in Fall 2001. The University of Maryland is an Equal Opportunity and Affirmative Action employer.

UNIVERSITY OF MARYLAND, COLLEGE PARK - DEPARTMENT OF MATHEMATICS - Statistics - University of Maryland Statistics Program seeks candidates for tenured/tenure track positions (all levels), with strong preference for persons working in applied or computational statistics. Appointments begin 8/17/2001. Priority will be given to persons whose applications are completed by December 31, 2000. Send CV, AMS Standard Cover Sheet, 3 recommendations letters to: Hiring Committee, Department of Mathematics, University of Maryland, College Park, MD 20742. Affirmative Action/Equal Opportunity Employer. Female and minority candidates are encouraged to apply.

UNIVERSITY OF MICHIGAN, ANN ARBOR - DEPARTMENT OF MATHEMATICS - The Department has several openings at the tenure-track or tenure level. Candidates should hold the Ph.D. in mathematics or a related field, and should show outstanding promise and/or accomplishments in both research and teaching. Areas of special interest are: analysis, geometry/topology, applied and interdisciplinary mathematics, including computational science, probability, and actuarial or financial mathematics. However, we encourage applications from any area of pure or applied mathematics. Salaries are competitive, based on credentials. Applicants should send a CV, bibliography, descriptions of research and teaching experience, and have three or four letters of recommendation, at least one of which addresses the candidate's teaching experience and capabilities, sent to: Personnel Committee, University of Michigan, Department of Mathematics, 2074 East Hall, 525 E. University, Ann Arbor MI 48109-1109. Applications are considered on a continuing basis but candidates are urged to apply by November 1, 2000. More detailed information regarding available positions may be found on our web page: http://www.math.lsa.umich.edu. Inquiries may be made by email to math.chair@math.lsa.umich.edu. The University of Michigan is an equal opportunity, affirmative action employer.

UNIVERSITY OF MICHIGAN, ANN ARBOR - DEPARTMENT OF MATHEMATICS - Assistant Professorships, VIGRE Assistant Professorships, and T.H. Hildebrandt Research Assistant Professorships - These positions for up to three years are designed to provide mathematicians with favorable circumstances for academic career development in research and teaching. Assistant Professorships have a teaching responsibility of two courses per semester; the VIGRE and T.H. Hildebrandt positions have a responsibility of one course per semester. These positions may be combined with other postdoctoral fellowships giving additional reductions in teaching responsibility. Preference is given to candidates who receive the Ph.D. degree in 1999 or later and who submit a completed application by December 18, 2000. Salary is competitive and there are opportunities for supplemental summer salary. Application forms and further important information are available at http://www.math.lsa.umich.edu/information/positions.html, by Email at math.chair@math.lsa.umich.edu, or by mail from: Hiring Committee, Department of Mathematics, University of Michigan, 2074 East Hall, 525 E. University, Ann Arbor, MI 48109-1109.

UNIVERSITY OF MINNESOTA - SCHOOL OF MATHEMATICS - Tenure-Track Position starting Fall Semester 2001 - The School of Mathematics will have available a tenure-track (Assistant Professor or higher) position starting fall semester, 2001. Ph.D. or equivalent degree in mathematics, teaching and related education experience at the undergraduate level and research are required. This position will emphasize excellence in teaching, education, academic program development for K-12 and college levels, and innovative education scholarship/professional involvement. Preference will be given to applicants at any level whose background and experience are compatible with the above stated objectives. Salary will be commensurate with background and experience. Consideration of applicants will begin December 15, 2000 and will continue until the position is filled. Send statement of interest, current curriculum vitae, at least 4 letters of recommendation (including comments on teaching ability and educational experience), and a complete description of related experience and research to: Professor Harvey Keynes, School of Mathematics, University of Minnesota, 127 Vincent Hall, 206 Church Street S.E., Minneapolis, MN 55455. The University of Minnesota is an equal opportunity educator and employer.

For additional **JOB POSITIONS** and **ANNOUNCEMENTS** see the AWM Online Advertisements at: http://www.awm-math.org/ads.html

UNIVERSITY OF MINNESOTA / INSTITUTE FOR MATHEMATICS AND ITS APPLICATIONS - Director - The Board of Governors of the Institute for Mathematics and Its Applications (IMA) and the University of Minnesota seek a new Director of the IMA for an appointment beginning August 27, 2001 (or possibly earlier in the summer). The new Director will be offered a tenured Professorship in the School of Mathematics of the University of Minnesota. Candidates should have the qualifications to provide scientific and administrative leadership to the IMA. Distinguished academic credentials, including a Ph.D. or equivalent, and a record of scientific leadership are required. Salary and term as Director of the IMA are negotiable. The IMA was established in 1982 with financial support from the National Science Foundation. The Foundation has now renewed the funding for the IMA until 2005. The mission of the Institute is to identify areas of research in science, engineering and industry where mathematics can have an impact and to encourage participation of mathematicians in these areas. Nominations and applications should be sent to: Chair, IMA Director Search Committee, School of Mathematics, University of Minnesota, 206 Church Street S.E., Minneapolis, MN 55455. Consideration of applications will begin December 15, 2000. The University of Minnesota is an Equal Opportunity Educator and Employer.

UNIVERSITY OF MINNESOTA, DULUTH - DEPARTMENT OF MATHEMATICS AND STATISTICS - Tenure-track assistant professor in statistics starting August 27, 2001. Duties include teaching and advising undergraduate and graduate students, directing master's-level research projects, conducting original research, and departmental service. Candidates who are committed to statistical applications and collaborative research in sciences or engineering are particularly sought. Active research program; Ph.D. in statistics or related field required by August 27, 2001. Competitive salary. For more information, contact: Dr. Ronald Regal, Search Committee Chair, Dept. of Mathematics and Statistics, University of Minnesota-Duluth, Duluth, MN 55812, or call 218-726-8254. Review of completed applications starts January 22, 2001 and continues until the position is filled. Full position description and application procedures at http://www.d.umn.edu/math or email: math@d.umn.edu. The University of Minnesota is an equal opportunity educator and employer.

UNIVERSITY OF NORTH CAROLINA AT GREENSBORO - DEPARTMENT OF MATHEMATICAL SCIENCES - Professor/Department Head - The Department of Mathematical Sciences at the University of North Carolina at Greensboro invites applications and nominations for the position of Department Head. The appointment will be at the rank of Professor with tenure and will be effective August 1st, 2001. Applicants should hold a doctorate in computer science, mathematics, statistics, or a closely related area and have a strong record of theoretical or applied research, with a commitment to exemplary teaching at both the graduate and undergraduate levels. The Department of Mathematical Sciences is one of 20 departments in the College of Arts and Sciences at UNC Greensboro. The Department has 18 tenured/tenure-track faculty and 18 lecturers and part-time faculty. It offers the B.A., B.S., and M.A. degrees in pure and applied mathematics and statistics and the B.S. and M.S. degrees in computer science; approximately 350 students are currently enrolled in the various programs. The B.S. in Computer Science is accredited by the Computing Sciences Accreditation Board. The department fosters collaboration both within and outside the university through the Statistical Consulting Center and an Industrial Advisory Committee. For additional details, including faculty research interests, visit the Department's web page at http://www.uncg.edu/mat. UNC Greensboro, one of 16 campuses in the University of North Carolina system, is a doctorate-granting university with approximately 13,000 students in the College and six professional schools. Greensboro is a medium-sized city of about 220,000 in the Piedmont Triad region of North Carolina near the Research Triangle and other doctorate granting institutions, a location providing easy access to recreational opportunities at the coast and the mountains. The local metropolitan area (which includes the cities of High Point and Winston-Salem) has a population of almost 1 million and offers an excellent quality of life. (For more information on the city and the region, visit http://www.thedepot.com/). Review of applications will begin on January 8th, 2001, and will continue until the position is filled. Nominations and informal inquiries are encouraged; email should be directed to johnston@uncg.edu. Inquiries and applications will be treated confidentially on request. Applicants should submit a letter explaining their interest in the position, a separate statement that describes their approach to the responsibilities of a Department Head, a vita, and names and addresses of four references to: Timothy D. Johnston, Chair, Mathematical Sciences Headship Committee, Office of the Dean, 105 Foust Building, UNC Greensboro, NC 27402. EEO/AA:W/M/V/D

UNIVERSITY OF NORTHERN IOWA - DEPARTMENT OF MATHEMATICS - Assistant Professor of Mathematics - Seeking candidates for two tenuretrack positions in mathematics. A Ph.D. in any field of mathematics, history of mathematics, or statistics; a superior teaching record; and an emerging record of research/scholarship are required. The successful candidates will be expected to teach a broad spectrum of courses with a standard load of 3 courses per semester. Applicants with successful collegiate teaching experience, interest in taking leadership in courses in history of mathematics, or statistics; and an interest in effective teaching methods are preferred, though the department is open to considering candidates with expertise in other areas. Appointment begins August 2001. Salary is competitive and includes excellent fringe benefits. A current application file must be received by January 22, 2001 for full consideration. Please read the complete announcement at http://www.math.uni.edu. Address correspondence to: Search Committee Chair, Department of Mathematics, University of Northern Iowa, Cedar Falls, IA 50614-0506. AA/EOE.

UNIVERSITY OF NOTRE DAME - DEPARTMENT OF MATHEMATICS - Regular Positions in Mathematics - The Department of Mathematics of the University of Notre Dame invites applications for two positions starting August 24, 2001. The three fields of interest are Applied PDEs, Harmonic Analysis, and Lie Theory and Algebraic Geometry, but outstanding candidates in all fields are encouraged to apply. The positions are at the tenure track level, though a tenured appointment may be possible for an exceptional candidate. The teaching load is one course one semester and two courses the other semester. Salaries are competitive. Applications, including a curriculum vitae, a letter of application, and a completed AMS standard cover sheet, should be sent to: Steven A. Buechler, Chair, Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. Applicants should also arrange for at least three letters of recommendation to be sent to the Chair. These letters should address the applicant's research accomplishments and supply evidence that the applicant has the ability to teach articulately and effectively. Notre Dame is an equal opportunity employer. Women and minorities are urged to apply. The evaluation of candidates will begin December 1, 2000. Information about the department is available at http://www.math.nd.edu/math

UNIVERSITY OF NOTRE DAME - DEPARTMENT OF MATHEMATICS - Regular Position in Stochastic Analysis - The Department of Mathematics of the University of Notre Dame invites applications for a position in the field of Applied Stochastic Analysis to start on August 24, 2001. The position is at the tenure track level, but a tenured appointment may be possible for an exceptional candidate. The teaching load is one course one semester and two courses the other semester. The salary is competitive. Applications, including a curriculum vitae, a letter of application, and a completed AMS standard cover sheet, should be sent to: Steven A. Buechler, Chair, Department of Mathematics, University of Notre Dame, Notre Dame, IN 46556. Applicants should also arrange for at least three letters of recommendation to be sent to the chair. These letters should address the applicant's research accomplishments and supply evidence that the applicant has the ability to teach articulately and effectively. Notre Dame is an equal opportunity employer. Women and minorities are urged to apply. The evaluation of candidates will begin December 1, 2000. Information about the department is available at http://www.math.nd.edut/math.

ADVERTISING DEADLINE for the January/February 2001 issue is: DECEMBER 1, 2000

#### ADVERTISEMENTS

UNIVERSITY OF NOTRE DAME - COLLEGE OF SCIENCE - CLARE BOOTHE LUCE PROGRAM AWARD - Junior Faculty Chair Position For Women - The University of Notre Dame invites applications from qualified candidates for a Clare Boothe Luce Assistant Professorship within the College of Science. This is a tenure-track appointment at the Assistant Professor level beginning August 22, 2001. The position is restricted by the Luce Foundation to women who are U.S. citizens. Candidates should have a Ph.D. in one of the areas present in our departments of Biological Sciences, Chemistry and Biochemistry, Mathematics, or Physics. Preference will be given for appointments in fields where women are currently underrepresented in these departments. The successful applicant will be expected to have a strong commitment to excellence in teaching at both the undergraduate and graduate levels and to develop a vigorous independent research program. Competitive salary and start up funds are available. Interested candidates should send a letter of intent, a curriculum vitae, statements of research and teaching interests and have three letters of recommendation sent to: Dr. Kathleen Cannon, Associate Dean, College of Science, 229 Nieuwland Science Hall, University of Notre Dame, IN 46556. To insure full consideration, the Search Committee should receive all materials by December 8, 2000.

THE UNIVERSITY OF OKLAHOMA - DEPARTMENT OF MATHEMATICS - Applications are invited for one or more full-time, tenured track position(s) beginning 16 August 2001. The position is initially budgeted at the assistant professor level, but an appointment at the associate professor level may be possible for an exceptional candidate with qualifications and experience appropriate to that rank. Normal duties consist of teaching two courses per semester, conducting research, and rendering service to the Department, University, and profession at a level appropriate to the faculty member's experience. The position(s) requires an earned doctorate and research interests that are compatible with those of the existing faculty; preference will be given to applicants with potential or demonstrated excellence in research and prior successful undergraduate teaching experience. Salary and benefits are competitive. For full consideration, applicants should send a completed AMS cover sheet, curriculum vitae, a description of current and planned research, and have three letters of recommendation (at least one of which must address the applicant's teaching experience and proficiency) sent to: Search Committee, Department of Mathematics, University of Oklahoma, 601 Elm, PHSC 423, Norman, OK 73019, Telephone: 405-325-6711, FAX: 405-325-7484, Email: search@math.ou.edu. Screening of applications will begin on December 15, 2000 and will continue until the position is filled. The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer. Women and Minorities are Encouraged to Apply. OU has a policy of being responsive to the needs of dual-career couples.

UNIVERSITY OF OREGON - DEPARTMENT OF MATHEMATICS - Applications are invited for tenure-track positions in mathematics beginning in September 2001. Qualifications are a Ph.D. in the mathematical sciences, an excellent record of research accomplishment, and evidence of teaching ability. Applicants from all fields will be considered with preference given to those in geometry, topology, applied mathematics, PDE's, and analysis. Competitive salary with good fringe benefits. Send complete resume and at least three letters of recommendation to: Search Committee, Department of Mathematics, 1222 University of Oregon, Eugene, Oregon 97403-1222. Closing date is January 8, 2001. Women and minorities are encouraged to apply. An EO/AA/ADA Institution committed to diversity.

UNIVERSITY OF PITTSBURGH - DEPARTMENT OF MATHEMATICS - The Mathematics Department of the University of Pittsburgh invites applications for two tenure-track positions to begin in the Fall Term 2001 subject to budgetary approval, one position would be in Algebra and its applications and the other in Stochastic Analysis and its applications. The appointments are at the starting Assistant Professor level. We seek excellence in teaching and research so applicants should demonstrate substantial research accomplishment and dedication to teaching. We particularly encourage applications from members of under-represented minority groups and women. The University of Pittsburgh is an affirmative action, equal opportunity employer. Send a vita, three letters of recommendation, a research statement and evidence of teaching accomplishments by December 15, 2000 to: Search Committee, Department of Mathematics, University of Pittsburgh, Pittsburgh, PA 15260.

**UNIVERSITY OF REDLANDS - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE -** The Department of Mathematics invites applications for two tenure-track positions at the assistant professor level beginning in fall of 2001. One position is for a statistician or an applied mathematician; the other is for a mathematician in any specialty. Responsibilities for both positions include teaching six undergraduate courses per year, including computer-based courses; directing student research projects; and engaging in scholarly activity. Requirements include the Ph.D. in mathematics or statistics and evidence of excellence in and a commitment to both undergraduate teaching and scholarship in statistics or mathematics. Preference will be given to candidates who are willing and able to teach a wide variety of undergraduate mathematics and statistics courses, and who have experience in and a commitment to interdisciplinary teaching and scholarship. We seek candidates with interest and demonstrated ability in working with a diverse student population. The University of Redlands, which enrolls 1850 undergraduates, is a selective, private, comprehensive liberal arts university located in Southern California. To apply, submit a letter of application, a curriculum vitae, a statement of teaching philosophy, and three letters of reference, at least two of which must address teaching, to: **Dr. Richard Cornez, Chair, Mathematics Search Committee, Department of Mathematics, 1200 E. Colton Ave., Redlands, CA 92373.** Review of applications will begin on Friday, January 19, 2001, and will continue until the position is filled. Department representatives will attend the AMS-MAA Joint Meetings in New Orleans, January 10-13, 2001. The University of Redlands is an EEO employer. We especially encourage women and members of other underrepresented groups to apply.

UNIVERSITY OF SAN DIEGO - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - USD, an independent Catholic University, seeks applicants for a tenure-track Assistant Professor position in the Department of Mathematics and Computer Science to begin September 2001. Candidates must have a Ph.D. in mathematics or applied mathematics. Expertise in applied mathematics is desirable, but all highly qualified candidates with broad interests in mathematics or experience in the mathematical preparation of future elementary school teachers will be considered. The teaching load is effectively 3 three-hour undergraduate courses per semester. Faculty are expected to have a strong commitment to excellence in teaching and maintain active scholarly pursuits. Send resume, three letters of recommendation, and a summary of recent teaching evaluations to: Math Search Committee, Department of Mathematics and Computer Science, University of San Diego, 5998 Alcala Park, San Diego, CA 92110. USD is an AA/EOE employer. Priority will be given to applications arriving by January 16, 2001.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES - DEPARTMENT OF MATHEMATICS - The Core Mathematics Section of the Department of Mathematics invites applications for one position at the (tenure-track) assistant or (tenured) associate professor level. This position can be in any area of core mathematics. In addition, there will be several visiting and postdoctoral positions. Applicants must show exceptional promise in research and teaching. To apply, please submit the following materials in a single package: letter of application (including your email address, fax number, and position applied for), the AMS Cover Sheet, and curriculum vitae. Candidates for assistant professor, visiting, and/or postdoctoral positions should also arrange for three letters of recommendation to be sent. Mail all materials to: Core Math Search Committee, Department of Mathematics, DRB 155, University of Southern California, Los Angeles, CA 90089-1113. Review of applications will begin December 15, 2000, but applications will be accepted until January 15, 2001. Additional information about USC can be found on the Web at http://www.usc.edu/. USC is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF TENNESSEE, KNOXVILLE - DEPARTMENT OF MATHEMATICS - The Mathematics Department of The University of Tennessee seeks to fill a tenure-track assistant professorship in partial differential equations. A Ph.D. is required. Some postdoctoral experience is preferred but not required. Substantial research promise as well as dedication to teaching are paramount. Employment begins August 1, 2001. Applicants with research experience in any area of partial differential equations are encouraged to apply, including: dynamical systems, differential geometric problems, curvature-driven flows and applications, variational methods and geometric measure theory, mathematical physics, spectral problems, materials science, inverse problems, and control theory. Interested applicants should arrange to have a vita, three reference letters, a research statement (including abstracts), and evidence of quality teaching sent to: Professor John B. Conway, PDE Search, Department of Mathematics, University of Tennessee, Knoxville, TN 37996-1300. Electronic applications are not acceptable. Use of the AMS application form is appreciated. Review of applications will begin December 1 and will continue until the position is filled. Information about the department can be found at http://www.math.utk.edu/. UT Knoxville is an EEO/AA/TitleVI/TitleIX/Section504/ADA/ADEA institution in the provision of its education and employment programs and services.

THE UNIVERSITY OF TEXAS AT AUSTIN - DEPARTMENT OF MATHEMATICS - Openings for Fall 2001 include: (a) Instructorships, some of which have R.H. Bing Faculty Fellowships attached to them, and (b) two or more positions at the tenure-track/tenure level. (a) Instructorships at The University of Texas at Austin are post-doctoral appointments, renewable for two additional years. It is assumed that applicants for Instructorships will have completed all Ph.D. requirements by August 31, 2001. Other factors being equal, preference will be given to those whose doctorates were conferred in 2000 or 2001. Candidates should show superior research ability and have a strong commitment to teaching. Consideration will be given only to persons whose research interests have some overlap with those of the permanent faculty. Duties consist of teaching undergraduate or graduate courses and conducting independent research. The projected salary is \$38,000 for the nine-month academic year. Each R.H. Bing Fellow holds an Instructorship in the Mathematics Dept., with a teaching load of two courses in one semester d and one course in the other. The combined Instructorship-Fellowship stipend for nine-months is \$41,000, which is supplemented by a travel allowance of \$1,000. Pending satisfactory performance of teaching duties, the Fellowship can be renewed for two additional years. Applicants must show outstanding promise in research. Bing Fellowship applicants will automatically be considered for other departmental openings at the post-doctoral level, so a separate application for such a position is unnecessary. Those wishing to apply for Instructor positions are asked to send a vita and a brief research summary to: Department of Mathematics, The University of Texas at Austin, Austin, TX 78712, c/o Instructor Committee. Transmission of the preceding items via email (address: instructor@math.utexas.edu) is encouraged. (b) An applicant for a tenure-track or tenured position must present a record of exceptional achievement in her or his research area and must demonstrate a proficiency at teaching. In addition to the duties indicated above for Instructors, such an appointment will typically entail the supervision of M.A or Ph.D. students. The salary will be commensurate with the level at which the position is filled and the qualifications of the person who fills it. Those wishing to apply for tenuretrack/tenure positions are asked to send a vita and a brief research summary to: Department of Mathematics, The University of Texas at Austin, Austin, TX 78712, c/o Recruting Committee. Transmission of the preceding items via email (address: recruit@math.utexas.edu) is encouraged. All applications must be supported by three or more letters of recommendation, at least one of which speaks to the applicant's teaching credentials. The screening of applications will begin on December 1, 2000. The University of Texas at Austin is an equal opportunity employer.

UNIVERSITY OF WASHINGTON - DEPARTMENT OF MATHEMATICS - Applications are invited for one or more assistant professor positions, to begin in September 2001. Exceptional candidates at the associate or full professor rank may be considered if they also have a demonstrated record of mentoring students of under-represented groups (students of color and women). Availability of the positions is subject to budgetary approval. Applicants are required to have a Ph.D. by the starting date. Duties include undergraduate and graduate teaching and independent research. Applicants are encouraged to apply online at: https://www.mathjobs.org/. Applications should include a curriculum vitae, statement of research and teaching interests, three letters of recommendation, and a Mathematics Subject Classification (as found in the December index volume of Mathematical Reviews) of their primary research interest. Applications which are not submitted online should be sent to: **Appointments Committee Chair, Dept. of Mathematics, Box 354350, University of Washington, Seattle, WA 98195-4350.** Priority will be given to applicants whose completed applications are received by December 1, 2000. The University of Washington is an affirmative action, equal opportunity employer. The University is building a culturally diverse faculty and strongly encourages applications from female and minority applicants.

UNIVERSITY OF WASHINGTON - DEPARTMENT OF MATHEMATICS - Applications are invited for non-tenure-track acting assistant professor positions, each for up to a three-year period, to begin in September 2001. Availability of these positions is subject to budgetary approval. Applicants are required to have a Ph.D. by the starting date and to be highly qualified for undergraduate and graduate teaching and independent research. Applicants are encouraged to apply online at: https://www.mathjobs.org/. Applications should include a curriculum vitae, statement of research and teaching interests, three letters of recommendation, and a Mathematics Subject Classification (as found in the December index volumes of Mathematical Reviews) of their primary research interest. Applications which are not submitted online should be sent to: Appointments Committee Chair (AAP position), Dept. of Mathematics, Box 354350, University of Washington, Seattle, WA 98195-4350. Priority will be given to applicants whose completed applications are received by December 1, 2000. The University of Washington is an affirmative action, equal opportunity employer. The University is building a culturally diverse faculty and strongly encourages applications from female and minority applicants.

UNIVERSITY OF WASHINGTON - DEPARTMENT OF MATHEMATICS - Applications are invited for non-tenure-track lecturer positions to begin in September 2001 or later. Availability of these positions is subject to budgetary approval. Duties include teaching two or three freshman/sophomore mathematics courses per quarter. Applicants must have a master's degree or a PhD by the starting date. Preference will be given to applicants with evidence of an outstanding teaching record. Applicants are encouraged to apply online at: https://www.mathjobs.org/. Applications should include a curriculum vitae, statement of teaching interests and experience, three letters of recommendation, and other evaluations of teaching ability, such as student evaluations, and should be sent to: Appointments Committee Chair (Lecturer Position), Dept. of Mathematics, Box 354350, University of Washington, Seattle, WA 98195-4350. Priority will be given to applicants whose completed applications are received by December 15, 2000. The University of Washington is an affirmative action, equal opportunity employer. The University is building a culturally diverse faculty and strongly encourages applications from female and minority applicants.

UNIVERSITY OF WATERLOO - DEPARTMENT OF PURE MATHEMATICS - The Department of Pure Mathematics expects one or more tenure-track positions starting July 1, 2001. Candidates in any area of Pure Mathematics will be considered. In order to be considered for a position, a Ph.D. is required. Postdoctoral experience is preferred. An appointment will be offered only to someone with very strong research and teaching qualifications. The closing date for receipt for applications is December 1, 2000. Applicants should submit their curriculum vitae, together with the names of at least three referees, and should arrange for letters of reference to be sent directly from the referees. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, native people, and persons with disabilities. This appointment is subject to the availability of funds. Please send applications to: Dr. B. Forrest, Chair, Department of Pure Mathematics, University of Waterloo, Ontario, Canada N2L 3G1. The department's webpage is at http://math.uwaterloo.ca/PM\_Dept/homepage.html/

#### ADVERTISEMENTS

**UNIVERSITY OF WISCONSIN, LA CROSSE - DEPARTMENT OF MATHEMATICS -** The department invites applications for one (or more) tenure-track assistant professor position(s), beginning August 26, 2001, contingent upon availability of funding. Responsibilities: Teach both introductory and advanced mathematics or statistics courses (average 12 hours per semester); maintain a productive program of research in mathematics or statistics; contribute to departmental, college and university service activities. Qualifications: Ph.D. in mathematics or statistics (anticipated by August 2001); evidence of successful college/university teaching; experience (or demonstrated potential) in directing undergraduate students on research projects is desirable. Applications from all areas of pure or applied mathematics or statistics are encouraged. Current areas of strength within the department include computational mathematics, graph theory, and applied statistics. Applicants should submit an AMS Cover Sheet, a letter of application, a curriculum vitae, undergraduate and graduate transcripts, and arrange to have three letters of recommendation (at least one commenting on teaching) sent to: Bruce Riley, Mathematics Department, University of Wisconsin-La Crosse, La Crosse, WI 54601. All application materials must be received by January 22, 2001. The department will conduct preliminary interviews at the Mathematical Sciences Employment Center during the Joint Mathematics Meetings in New Orleans, January 10-13, 2001; thus, applicants are encouraged to submit their applications well in advance of the Meetings. UW-La Crosse is an affirmative action/equal opportunity employer.

**UNIVERSITY OF WISCONSIN, MILWAUKEE - DEPARTMENT OF MATHEMATICAL SCIENCES -** Applications are invited for two tenure-track positions at the assistant professor level to commence in Fall 2001. Position (1) Dynamical Systems or Geometric Topology. Position (2) Industrial Mathematics: Applied Mathematics, Computational Mathematics, or Operations Research. Candidates for both positions must have a strong research record, strong potential for extramural funding, and a demonstrated commitment to teaching. Responsibilities include: teaching two courses per semester, and taking an active role in the undergraduate, masters, and Ph.D. programs. Please send vita, description of research and statement of teaching philosophy, and arrange for at least three letters of recommendation to be sent to: Hiring Committee, Department of Mathematical Sciences, University of Wisconsin, Milwaukee, Milwaukee, WI 53201-0413 postmarked by January 5, 2001. An EE0/AA employer. Applications from female and minority candidates are strongly encouraged. See also http://www.uwm.edu/Dept/Math.

**UNIVERSITY OF WYOMING - DEPARTMENT OF MATHEMATICS - Tenure Track Position in Applied Mathematics -** The University of Wyoming Mathematics Department (Web site http://math.uwyo.edu) invites applications for a tenure-track Assistant or Associate Professorship in Applied Mathematics to begin August 2001. We seek candidates with an earned doctorate in MATHEMATICS, proven teaching ability and strong research in areas of interest in the department, especially computational mathematics, mathematical modeling, and numerical analysis. A strong commitment to undergraduate and graduate advising, outreach instruction and service is also necessary. Preference will be given to candidates with interdisciplinary research programs. Additionally, for associate Professor, an established, externally funded research program is required. Applicants should arrange to send a vitae, research plan, teaching philosophy, and three letters of recommendation to: **Applied Search Committee, Department of Mathematics, University of Wyoming, P. O. Box 3036, Laramie, Wyoming 82071, U.S.A.** Review of applications begins February 1, 2001. The University of Wyoming is an affirmative action/equal opportunity employer.

UNIVERSITY OF WYOMING - DEPARTMENT OF MATHEMATICS - Mathematics Academic Professional Lecturer - We invite applications for an Academic Professional Lectureship position to begin August 2001. The position is defined by a probation period followed by extended-term, renewable appointments. Minimum requirements are three years teaching experience with evidence of exceptional dedication and success with students, a strong mathematical background and a graduate degree in mathematics or a complementary area such as Curriculum and Instruction. A strong commitment to outreach instruction and service is necessary. Preference will be given to applicants who have experience in the use of technology and innovative curriculum in mathematics instruction. Preference will be given to applicants who have experience in the use of technology and innovative curriculum in mathematics instruction. Preference will be given to applicants who have experience in the use of technology and innovative curriculum in mathematics instruction. Preference will be given to applicants who have experience is necessary. Duties will include instruction, supervision, and staff development for instructors in two of three entry-level service courses in algebra and trigonometry. See our web site (math.uwyo.edu) for a current description of our department and these courses, Math 1400/1405/1450. Applicants should send a vitae, a statement of teaching philosophy, evidence of outstanding teaching merit, and three letters of recommendation to the APL Search Committee, Department of Mathematics, University of Wyoming, P.O. Box 3036, Laramie, WY 82071-3036. Review of applications begins March 1, 2001. The University of Wyoming is an affirmative action/equal opportunity employer.

WAKE FOREST UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for a tenure track position in computational mathematics at the assistant professor level beginning August 2001. Duties include teaching at the undergraduate and graduate levels and continuing research. A Ph.D. in mathematics or equivalent is required. Research areas such as numerical analysis, numerical linear algebra, numerical optimization, numerical solution of differential equations, and other areas in computational mathematics will receive first consideration. The department has 18 members and offers a B.S. and M.A. in mathematics, and a B.S. in each of mathematical business and mathematical economics. Send a letter of application and resume to: Richard D. Carmichael, Department of Mathematics, Wake Forest University, P.O. Box 7388, Winston-Salem, NC 27109-7388. AA/EO Employer.

WASHINGTON STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Tenure track assistant professor position available beginning Fall 2001. Preferred research areas are areas of applied and computational mathematics compatible with those represented in the department: partial differential equations, computation modeling and simulation, optimization, numerical analysis, control theory, applied probability, biological modeling and discrete mathematics. We require the following: Ph.D. in mathematics specializing in the above mentioned areas; evidence of quality teaching at the undergraduate level; strong potential for quality graduate instruction as well as dissertation direction; record of or potential for high quality research publications; and the ability to attract external funding. Send letter of application with a statement of current and planned research; a statement of teaching philosophy; a current vitae and three letters of reference to: Chair, Search Committee/Applied Math, Department of Mathematics, P.O. Box 643113, Washington State University, Pullman WA 99164-3113. Screening begins December 1, 2000 and will continue until position is filled. For additional information, see http://www.sci.wsu.edu/math/math.html. WSU is an EO/AA educator and employer. Protected group members are encouraged to apply.

WASHINGTON UNIVERSITY IN ST. LOUIS - DEPARTMENT OF MATHEMATICS - Opening for one tenure-track faculty position in statistics at the rank of Assistant Professor. Starting date: Fall of 2001. Teaching load: three courses per year. Applicants should have research interests that mesh with those of our permanent faculty. Please have six letters of recommendation sent directly to: Steven G. Krantz, Chair Dept. of Mathematics, Washington University, One Brookings Drive, Campus Box 1146, St. Louis, MO 63130. Email: chairman@math.wustl.edu. At least one of these letters should report on the candidate's teaching abilities. We will begin reviewing applications on October 20, 2000 and continue reviewing applications until the position is filled. Washington University is an affirmative action/equal opportunity employer and specifically invites and encourages women and minorities to apply. Employment eligibility verification required on hire. For more information about the position or institution: http://www.math.wustl.edu. Deadline for applications: December 1, 2000.

WASHINGTON UNIVERSITY IN ST. LOUIS - DEPARTMENT OF MATHEMATICS - Opening for one William Chauvenet Assistant Professorship. This is a two-year, non-tenure track faculty position. Starting date: Fall of 2001. Teaching load: three courses per year. Applicants should have research interests that mesh with those of our permanent faculty. These interests include algebraic geometry, commutative algebra, differential geometry, dynamical systems, harmonic analysis and wavelets, low-dimensional topology, operator theory, partial differential equations, real and complex analysis, and statistics. To apply, send a vita and a research plan. Have three letters of recommendation sent directly to: Steven G. Krantz, Chair Dept. of Mathematics, Washington University, One Brookings Drive, Campus Box 1146, St. Louis, MO 63130. Email: chairman@math.wustl.edu. At least one of these letters should report on the candidate's teaching abilities. We will begin reviewing applications on December 1, 2000 and continue reviewing applications until the position is filled. Washington University is an affirmative action/equal opportunity employer and specifically invites and encourages women and minorities to apply. Employment eligibility verification required on hire. For more information about the position or institution/company: http://www.math.wustl.edu. Deadline for Applications: December 1, 2000.

WAYNE STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Applications are invited for a possible tenure-track positions at the rank of Assistant/Associate Professor in any area of specialization. Applications from female and minority candidates are particularly encouraged. There is also the possibility of visiting positions for 2001-2002 in any area of mathematics. Ph.D. in mathematics and a strong interest in research and teaching are required for all positions. Applications should include a signed, detailed vita, description of current research interests, and four letters of recommendation, including one addressing teaching. Solid evidence of excellence in teaching at the undergraduate level is preferred over a statement of teaching philosophy. Applications received by January 1, 2001 will be given priority. Wayne State University is an equal opportunity/affirmative action employer. Wayne State University - People working together to provide quality service. All buildings, structures and vehicles at WSU are smoke-free. Send to: Lowell J. Hansen, Chair, Wayne State University, College of Science, Department of Mathematics, Detroit, Michigan 48202; Telephone: (313) 577-2479; Fax: (313) 577-7596.

WESLEYAN UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - The department invites applications for the following positions in Mathematics to begin in the academic year 2001-2002. Candidates for these positions must have a Ph.D. in Mathematics and are expected to have strong records in both research and teaching. Assistant Professor of Mathematics: We seek candidates for two tenure-track assistant professorships, one in analysis and the other in algebra. These positions are most suitable for candidates with an established research program, typically with some postdoctoral experience. For the analysis position, we are especially interested in probability theory, Lie groups, or geometry with connections to dynamics; for the algebra position, we are especially interested in any area of mathematics are encouraged to apply. Teaching duties for each of the above positions are two courses per semester. Wesleyan University is committed to increasing the diversity of its faculty and is an equal opportunity/affirmative action employer. Applications must be submitted by January 29, 2001. Applicants should arrange for at least four letters of recommendation, including one which evaluates teaching, to be sent to the address below. All correspondence and applications should be submitted to: Mathematics Search Committee, Department of Mathematics and Computer Science, Wesleyan University, Middletown, CT 06459. Email enquiries may be directed to mathjobs@wesleyan.edu; please mention that you are enquiring about the assistant professorships. More information concerning the Department of Mathematics and Computer Science and about Wesleyan University can be found via http://www.math.wesleyan.edu/

WESTERN ILLINOIS UNIVERISTY - DEPARTMENT OF MATHEMATICS - TENURE-TRACK POSITION (or positions, pending approval), Assistant Professor, August 2001. Applicants from all areas of mathematical sciences are invited to apply. Three-course teaching (with appropriate integration of computing technology), research, and service expected. QUALIFICATIONS: Ph.D. (or imminent) in a mathematical sciences area; demonstrated, or potential for, excellence in teaching; a record of, or potential for, research; a record of, or commitment to, service. SCREENING BEGINS December 15, 2000; continues until position filled. Preliminary interviews at New Orleans Joint Meeting. Send letter, vita, teaching philosophy, research description, three reference letters, and transcripts (photocopies): Iraj Kalantari, Chair, Mathematics Department, 1 University Circle, Western Illinois University, Macomb, IL 61455-1390. URL: http://www.wiu.edu/mathematics/. WIU is an Equal Opportunity and Affirmative Action employer. We are especially interested in applications from women and minorities, and individuals with disabilities.

WESTERN WASHINGTON UNIVERSITY - DEPARTMENT OF MATHEMATICS - One or more tenure-track Assistant Professor positions; begin Fall 2001. May be limited term if suitable tenure-track candidates unavailable. PhD. and evidence of effective undergraduate teaching and strong scholarship required. Areas of interest include algebra, combinatorics and topology, as well as modeling, optimization, numerical analysis and statistics. A strong commitment to teaching is expected. See /www.wwu.edu/~mathweb/ for details. WWU has about 500 faculty and 11,500 students in Bellingham, a city of 60,000 on oceanside hills between Seattle and Vancouver, with outstanding natural beauty and recreational opportunities. Submit WWU summary (see web page), vita, transcripts, description of teaching accomplishments and philosophy, and four letters addressing teaching and research, to: Mathematics Search, Math, WWU, Bellingham WA 98225-9063 by December 8, 2000 for full consideration. AA/EOE. For disability accommodations call (360) 650-3306 (V) or (360) 650-7606 (TYY).

WESTMINSTER COLLEGE - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Mathematics, Assistant Professor -The department seeks applications for a tenure-track position in mathematics beginning August 2001. Applicants must possess a Ph.D. for appointment as assistant professor, be committed to excellence in teaching in an undergraduate liberal arts environment, and be prepared to engage in continuing scholarly activity. The Department seeks candidates with broad intellectual interests. Candidates interested in developing new courses in statistics and directing undergraduate research projects are particularly encouraged to apply. Please send letter of application, a curriculum vita, three letters of recommendation, teaching evaluations, and graduate and undergraduate transcripts to: Barbara T. Faires, Chair, Department of Mathematics and Computer Science, Westminster College, New Willmington, PA 16172. (724) 946-7293. Email: mathsearch@westminster.edu. Applicant review will begin December 1, 2000. Westminster is an Equal Opportunity Employer.

**YORK UNIVERSITY - DEPARTMENT OF MATHEMATICS AND STATISTICS -** Applications are invited for a two-year contractually limited appointment for 2001-2003 at the Assistant Professor level in the Department of Mathematics and Statistics. The position is subject to budgetary approval, and is scheduled to commence by 1 September 2001. The successful applicant must have a Ph.D. and is expected to show evidence or promise of good quality teaching, and research in Probability Theory or Stochastic Processes. The selection process will begin January 15, 2001. Applicants should send resumes and arrange for three letters of reference (one of which should address teaching) to be sent directly to: **Probability Search Committee, Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario, Canada M3J 1P3,** Fax: (416) 736-5757, Email: chair@mathstat.yorku.ca, www.math.yorku.ca/Hiring/. As required by Canadian immigration, this advertisement is directed to citizens or permanent residents of Canada. For many years, York University has had a policy of employment equity including affirmative action program. Persons who are members of one or more of these three groups are encouraged to self identify during the selection process. Please note that candidates from these three groups will be considered within the priorities of the affirmative action program only if they self identify. The Department of Mathematics and Statistics welcomes applications from women, racial/visible minorities, persons with disabilities and aboriginal peoples. If additional assistance is required, the York affirmative action office can be reached at 416-736-5713.

Association for Women in Mathematics 2000/2001 MEMBERSHIP FORM AWM's membership year is from October 1st to September 30th. Please fill-in this information and return it along with your DUES to: LAST NAME FIRST NAME M.I. **AWM Membership** 4114 Computer & Space Sciences Building ADDRESS University of Maryland College Park, MD 20742-2461 The AWM Newsletter is published six times a year and is part of your membership. Any questions, contact AWM at awm@math.umd.edu; (301) 405-7892 or refer to our website at: http://www.awm-math.org □ I DO NOT wish for my AWM membership information to be released for the Combined Membership List. Email: Home Phone: Work Phone: do not publish home number do not publish work number (MMDDYYYY) [the date of birth field is to strictly help prevent duplicate entries] Date of Birth (optional): **PROFESSIONAL INFORMATION:** If student, GRADUATE or UNDERGRADUATE (circle one) Position: If not employed, leave position & institution blank Institution/Company: City, State, Zip: **DEGREES EARNED:** Degree(s) Institution(s) Year(s) Doctorate: Master's: Bachelor's ND 00 INDIVIDUAL DUES SCHEDULE Please check the appropriate membership category below. Make checks or money order payable to: Association for Women in Mathematics. NOTE: All checks must be drawn on U.S. Banks and be in U.S. Funds. AWM Membership year is October 1st to September 30th. \$ 50 REGULAR INDIVIDUAL MEMBERSHIP..... 2ND FAMILY MEMBERSHIP..... \$ 30 (NO newsletter) Please indicate regular family member: CONTRIBUTING MEMBERSHIP..... \$100 \$ 25 RETIRED or PART-TIME EMPLOYED MEMBERSHIP (circle one) \$ 15 STUDENT or UNEMPLOYED MEMBERSHIP (circle one)..... \$ ALL FOREIGN MEMBERSHIPS (INCLUDING CANADA & MEXICO)....FOR ADDITIONAL POSTAGE ADD 8 All payments must be in U.S. Funds using cash, U.S. Postal orders, or checks drawn on U.S. Banks. \$ BENEFACTOR [\$2,500] or FRIEND [\$1,000] (circle one)..... \$ I am enclosing a DONATION to the "AWM GENERAL FUND"..... \$ I am enclosing a DONATION to the "AWM ALICE T. SCHAFER PRIZE" \$ I am also enclosing a DONATION to the "AWM ANNIVERSARY ENDOWMENT FUND" Indicate if you wish for your contribution(s)/donation(s) to remain ANONYMOUS D Dues in excess of \$15 and all cash contributions/donations are deductible from federal taxable income. INSTITUTIONAL DUES SCHEDULE \$250 CATEGORY 1 (includes 10 student memberships; 1 free ad; 25% off additional Newsletter & online ads\*)... CATEGORY 2A (includes 3 student memberships; 1 free ad; 10% off additional Newsletter & online ads\*).... \$125 CATEGORY 2B (includes 6 student memberships; 10% off Newsletter & online ads\*)...... \$125 ADVERTISING: Institutional members on Categories 1 and 2a receive ONE FREE job link ad or ONE FREE Newsletter ad (up to 4 lines) for the membership year Oct. 1st to Sept. 30th. All institutional members receive discounts on other eligible \* advertisements (25% off for Category 1 and 10% off for Categories 2a and 2b). \*Eligible advertisements: The institutional discount applies to both classified and job link online ads as well as classified Newsletter ads, but it does not apply to Newsletter display ads. If institutional dues have not been received by the invoice date, the full advertising rate will be charged. Newsletter advertising deadlines are the 1st of every EVEN month. All institutions advertising are Affirmative Action/Equal Opportunity Employers. STUDENT NOMINEES: Institutions have the option to nominate students to receive the newsletter as part of their membership. List names and addresses of student nominees on opposite side or attach a separate page. [ADD \$15 (\$23 for foreign members) to the listed institutional rate for each student add-on over the initial 10 students for Category 1 over the initial 3 students for Category 2a & over the initial 6 students for Category 2b ]. For more advertising/membership info see www.awm-math.org TOTAL ENCLOSED \$ Indicate if GIFT membership FROM:

AWM

Volume 30, Number 6, November-December 2000

AWM would like to invite you to our events to be held in conjunction with the Joint Mathematics Meetings New Orleans Marriott Hotel and the ITT Sheraton New Orleans Hotel, New Orleans, Louisiana, January 10-13, 2001

1

vents

	Preliminary Schedule of AWM Eve	ents as of October 15, 2000				
Wednesday January 1	Oth		LOCATION (subject to change)			
2:45 p.m. 4:05 p.m.	Panel Discussion: "AWM and K-8 education: What sh	ould we do?"	La Galerie 5 Marriott			
2.45 p.m 4.05 p.m.	Organizers: AWM President Jean F Taylor Butge	rs Univ and AWM President-Elect Suzann	a lanhart Univ of Tennessee			
	Benelista, Chirley Malcom Head AAAS Directorate	for Education and Human Pasouroos Pro	arama: Judith Deitmen			
	Professor Department of Mathematics University of	Kansas: Erica Voolich, 7th grade teacher	Solomon Schoobter Day			
	Protessor, Department of Mathematics, University of Kansas; Erica Voolich, 7th grade teacher, Solomon Schechter Day					
	At each usion of papel AW/M will recognize the 11th Annu	al Alice T. Schafer Prize honoroos luippor				
4.05 mm 4.25 mm	At conclusion of parlet, Avviv will recognize the fifth Annu Business Meeting	an Ance 1. Scharer 1112e honorees [withor, fo	La Calorio E Marriott			
4.05 p.m 4:25 p.m.	Business Meeting		La Galerie 5, Marriott			
0:00 p.m 8:15 p.m.	Notiner Dinner	rer for a convel dispert. If you would like to	Location: to be announced			
	A www will have a get-together with the Noether Lectu	bit area or at the AM/M Papel on Medneed	join us,			
0.20	a sign-up sheet will be at the Awiwi Table in the exilic	Sit area of at the Avvivi Fallel off wednesd	ay. Outside of Crend Bellisseme			
9:30 p.m.	Reception	har available	Outside of Grand Bailtoonis			
TL	entire math community invited, refreshinents & cash	bar avallable.	A, B, C, Sheraton			
Thursday, January 11t	<u>h</u>		late in a set in the second set			
9:00 a.m 9:50 a.m.	22nd Annual Emmy Noether Lecture: "Nonlinear equ	ations in conformal geometry"	Grand Ballrooms A, B, C,			
	presented by Sun-Yung Alice Chang, Princeton Univers	ity and the University of California, Los Ang	geles Sheraton			
	ABSTRACT: Elliptic equations have been and continue to be	an important tool in the study of problems in geon	netry. In the recent decades, non-linear			
	second order elliptic equations with critical exponents have pla	ayed a special role in the solutions of several impo	ortant problems in conformal geometry;			
	by second order semilinear equations to higher order semiline	ar equations as well as second order fully non-line	ar equations A common feature			
	essential to understanding such equations is the analysis of b	low up in these equations. This analysis involves	classifying entire solutions to such			
	equations in euclidean space. I plan to discuss examples of b	lowup phenonmena in several such situations.				
4:25 p.m 7:00 p.m.	Joint Prize Session: Presentation to the winners of the		Grand Ballrooms A, B, C,			
	11th Annual Louise Hay Award for Contributions to	Mathematics Education and the	Sheraton			
	11th Annual Alice T. Schafer Prize for Excellence in	Mathematics by an Undergraduate Woman				
	These award presentations are held in conjunction w	ith the Joint Prize Session. A cash bar re	eception will immediately follow.			
Friday, January 12th						
6:30 p.m 9:30 p.m.	AWM Workshop Dinner & Discussion Group [for Work	shop presenters, mentors, panelists & organizers	Location: to be announced			
Saturday, January 13th	1					
8:20 a m = 4:10 p m	AWM WORKSHOP: presentations by Women Gradua	te Students& Recent Ph.D.'s	Pontchartrain & Sheraton			
0.20 a.m. 9 4.10 p.m.	The entire math community is invited to attend all W	orkshop presentations. The AWM Works	shon is supported by the			
	Air Force Office of Scientific Research, Office of Nav	al Research and the National Science Fou	ndation (pending funding approval)			
	Organizers: Gail Ratcliff, University of Missouri, St. Louis, S	Sue Geller, Texas A&M University & Jodie D. No	vak, University of Northern Colorado			
8:30 a.m 10:30 a.m.	AWM sponsored research talks by recent women Ph.I	D.'s I				
8:30 a.m 8:50 a.m.	Amy N. Myers, University of Pennsylvania	"Counting Permutations by their Rigid Patterns"				
9:00 a.m 9:20 a.m.	Christine E. Heitsch, University of British Columbia	"Computational Complexity of Generalizaed Patte	ern Matching"			
9:30 a.m 9:50 a.m.	Diane Maclagan, Institute for Advanced Study	"The Baues problem and the toric Hilbert scheme	и			
10:00 a.m 10:20 a.m.	Gretchen L. Matthews, University of Tennessee, Knoxville	"Gap sets and error-correcting codes"				
10:30 a.m 12:00 p.m.	AWM sponsored Poster Session featuring Graduate S	tudents(light refreshments will be available	)			
	Joni E. Baker, University of Wisconsin, Madison	"Weak $P_{\kappa}$ + -points in $u(\kappa)$ "				
	Kristine Baxter, University of Illinois at Urbana-Champaign	"Goodwillie Calculus Towers of Functors of Hopy	f Algebra Type"			
	Mireille Boutin, University of Minnesota	"Moving Frames and Cartesian Lie Group Action	15 ''			
	Kirsten J. Boyd, Stanford University	"Wavelet Homogenization Methods for Partial Di	fferential Equations"			
	Dorothy Buck, University of Texas at Austin	"The Geometry of DNA and DNA-Protein Interac	tions"			
	Melinda Evrithiki Koelling, University of Michigan, Ann Arbor	Dynamics of Non-Abelian Toda-like Flows				
	Aurelia Minut, Michigan State University	"L' Estimates for Maxwell's Equations in Stratific	ed Media"			
	Kathryn Nyman, Cornell University	"Incidence Numbers for Line and Pseudo-line Art	rangements"			
	Victoria A. Sapko, University of Nebraska, Lincoln	Questions On and Uses of Local Conomology"	k-			
	Małgorzata Stawiska, Northwestern University	"Hyperbolic sets for holomorphic endomorphism.	s of P <sup>-m</sup>			
	Csilla Tamás, Purdue University	"Analytic Rigidity of K-trivial Contractions in Di	nension Three"			
12.00	Kimberly Tysdal, wesleyan University	organizeral	pns			
12:00 p.m 12:30 p.m.	AWM Lunch for Workshop presenters, mentors, panelists a	"	Dontohertrein & Charatan			
12:30 p.m 2:00 p.m.	Panel Discussion: Launching a Career in Mainematics	Panalista Canalum & Condan Destmenth Calle	Pontchartrain A, Sheraton			
	Moderator: Jodie Novak, University of Northern Colorado	rancusts: Carolyn S. Gordon, Dartmouth Colleg	te University			
2:00 1:00	washington D.C.; ramara G. Kolda, Sanda Waholai Laborat	o 'e H	the Ontrocisity			
2:00 p.m 4:00 p.m.	A WW Sponsored research talks by recent wollien rin.	"Spectral properties of elliptic lover potentials on	non-smooth domains"			
2:00 p.m 2:20 p.m.	Katrina Barron University of California, Santa Cruz	"Factorization of formal exponentials and uniform	nization"			
2:50 p.m 2:50 p.m. 3:00 p.m 3:20 p.m.	Jennifer E. Beineke, Trinity College, Hartford	"Hidden Symmetries for a Renormalized Integral	of Eisenstein Series"			
3:30 p.m 3:50 p.m.	Maria Basterra, University of Illinois at Urbana-Champaign	"The Witten Genus and Equivariant Elliptic Coho	mology"			
For more details on the choice events, places see the following websites: www.ame/org/amentae.or www.ameth.org						
For more details on the above events, please see the following websites: www.ams/org/amsmtgs or www.awm-math.org. At the meeting, please						

For more details on the above events, please see the following websites: www.ams/org/amsmtgs or www.awm-math.org. At the meeting, please stop by the AWM Table in the Exhibit area (Grand Ballroom, Marriott) for an AWM Events Program or refer to your Joint Meetings Program.

Volume 30, Number 5, September-October 2000

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