AWM

ASSOCIATION FOR WOMEN IN MATHEMATICS

Volume 33, Number 6 NEWSLETTER November–December 2003

AWM ELECTION!!

The ballot is enclosed between pages 8 and 9. Be sure to vote! Ballot due: **December 15, 2003**

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PRESIDENT'S REPORT

AWM Elections. The AWM elections are upon us. You will find statements and biographies of the candidates and a ballot in this newsletter. We have an excellent slate, led by Barbara Keyfitz for President-Elect and Rebecca Herb for Treasurer. The four candidates for the two positions of Member-at-Large on the Executive Committee are Krystyna Kuperberg, Maxine Rockoff, Elaine Terry, and Ann Trenk. Your ballot is needed by December 15. Please vote!

Is onsite childcare needed for future Joint Mathematics Meetings? Would you use an onsite childcare service at the Joint Mathematics Meetings if one were available? The AWM is assessing the need for such a service and investigating feasibility. You will find a survey on page 24 of this newsletter and on the AWM website. If you are interested in such a service, please fill out a survey, preferably to arrive by December 1. It is essential that we get an idea of the demand for such a service before proceeding with further efforts.

What's happening at the January Meetings? The AWM is pleased to announce that Professor Svetlana Katok, Pennsylvania State University, will deliver the 25th annual Emmy Noether Lecture, entitled "Symbolic dynamics for geodesic flows."

This year's AWM panel on Wednesday afternoon will address "Supporting the diverse personal lives of mathematicians." Panelists Mary Beth Bradley, Robert Bryant, Jerome Dancis, Dawn Lott, Cleopatria Martinez, and Elizabeth Stanhope, along with moderator Helen Moore, will address the challenges faced by mathematicians in a variety of life situations that are frequently overlooked in discussions concerning career and personal life. Topics to be addressed by the panel include gay/lesbian two-body problems, special needs and single parenting, dealing with loss or isolation, and preserving one's culture. The panel will initiate a discussion that will be continued in the setting of a web forum to be moderated by Christina Sormani. I hope that you will join us for the panel and stay afterward to

AWM
ASSOCIATION
FOR WOMEN IN
MATHEMATICS

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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honor the Alice Schafer Prize awardees. Following the awards ceremony, please join us for a short business meeting to learn more about what the AWM is currently doing and to share your ideas.

The AWM Workshop for Graduate Students and Recent Ph.D.'s on Saturday will include research talks, a poster session, and a panel addressing issues concerning launching a mathematical career. All are invited.

Please join us for the Joint Prize Session on Thursday at which we will award the Louise Hay Award and Schafer Prize.

Of course, the popular AWM reception will once again follow the Gibbs Lecture.

Leadership workshop. If you missed the November 20 deadline to apply for funding to attend the workshop "After Tenure: Women mathematicians taking a leadership role," please check the AWM website to see if there will be an additional selection on January 20. (At the time of this writing, an additional selection is scheduled and will be cancelled only if all funds are allocated in the November selection.) Please see the announcement on page 16.

Strategic Planning. The AWM Executive Committee is about to undertake a major strategic planning effort to evaluate our goals, priorities, and programs and to reinforce our organizational structure in order to meet our goals. Your input is welcome on the following questions (or on questions we haven't thought to ask). You may contact me or any other member of the Executive Committee.

What do you feel the priorities of the AWM should be?

Which of the existing AWM programs do you feel are most valuable? (See the AWM website www.awm-math.org for descriptions of all our programs.) Are there some you feel should be expanded? dropped? Do you have suggestions for new initiatives?

Do you feel that the current organizational structure gives effective representation to the membership?

Upcoming deadlines. In addition to the deadline for the leadership workshop already mentioned above, please note the following deadlines:

Michler Collaborative Research Grants for travel to work with a research collaborator (see page 18) due February 10;

AWM Travel Grants and Mentoring Grants (see pages 11 and 20) due February 1;

Applications to hold a Sonia Kovalevsky High School Day (see page 14) due February 4;

Applications to participate in AWM Workshop, July 2004 (see page 8) due January 26; and

Nominations for Kovalevsky Lecturer (see page 7) due December 1.

Year-End Appeal. The AWM has had many one-time expenses this year as we have moved to new office space within the University of Maryland (aside: you may continue using our old office address until otherwise announced), and we have upcoming expenses associated with our strategic planning effort. At the same time, grant funds are reduced due to the economic climate. We would be deeply grateful for any donations. All donations are fully tax deductible.

People. On behalf of the AWM, I would like to thank Renee Fister for her dedicated service as AWM clerk. We're delighted to welcome Maura Mast, who assumed the role of clerk on October 1.

Thanks also to Shunhui Zhu for his hard work as AWM web editor. Shunhui was asssisted by his daughter Jennifer.

As the year ends, I would like to thank the many, many volunteers who contribute so much to the AWM.

Looking forward to seeing many of you at the Joint Mathematics Meetings,

Carolyn Gordon

Carolyn Gordon
Dartmouth College
October 1, 2003

MEMBERSHIP AND NEWSLETTER INFORMATION

Membership dues

Individual: $50 Family (no newsletter): $30
Contributing: $100 Retired, part-time: $25
Student, unemployed, developing nations: $15
Friend: $1000 Benefactor: $2500
All foreign memberships: $8 additional for postage
Dues in excess of $15 and all contributions are deductible from 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:
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 US branch), US money order, or international postal order. Cash payment will be accepted if necessary, but only in US 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 $100 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 Bayer, Math Dept., University of Kansas, 405 Snow Hall, 1460 Jayhawk Boulevard, Lawrence, KS 66045-7523; email: bayer@math.ukans.edu; fax: 785-864-5255 and all **education column** material to Ginger Warfield, Math Department, 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 ONLINE

Online Ads Coordinator

Aileen Gormley
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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 and Online Forums

http://www.awm-math.org

AWM-Net Editor

Dianne O'Leary
oleary@cs.umd.edu

AWM-Net

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

AWM DEADLINES

Leadership Conference:
November 20, 2003 and January 20, 2004 (second cycle anticipated; check AWM website for latest info)

Kovalevsky Lecturer Nomination:
December 1, 2003

AWM Election: Ballots due December 15, 2003

AWM Workshop, July 2004:
January 26, 2004

NSF-AWM Mentoring Travel Grant:
February 1, 2004

NSF-AWM Travel Grant: February 1 and May 1, 2004

Sonia Kovalevsky High School Mathematics Days: February 4, 2004

Michler Collaborative Research Grants:
February 10, 2004

AWM CONTACT INFO

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AWM ELECTION

This year, we are electing a President-Elect, Treasurer, and two Members-at-Large of the Executive Committee. The positions of Member-at-Large are contested, so we encourage you to vote. Statements and biographical data provided by the candidates follow. Those elected will take office on February 1, 2004.

You should find a ballot between pages 8 and 9 of this *Newsletter*. Also, family members who do not receive the *Newsletter* will receive a ballot by a separate mailing. Institutional, affiliate, and corporate memberships do not carry voting privileges. Please note that a validating signature is required on the envelope; if the signature does not appear, your votes will not be counted. Ballots must be received by **December 15, 2003**.

If you do not receive a ballot or you spoil your ballot, a replacement to mail in may be found at www.awm-math.org. However, the deadline for receipt of ballots will not be extended to accommodate these special cases.

PRESIDENT-ELECT

Barbara Lee Keyfitz, University of Houston

Will we always need an Association for Women in Mathematics? Yes, we will. AWM was started at a time when this presidential candidate was just beginning her career. The term "two-body problem" had not yet been invented, there were few women faculty in science departments and even fewer in engineering (where I worked for nine years after getting my Ph.D. degree).

The professional outlook for women has changed greatly. This year's headline announcing the new elections to membership in the National Academy of Science was "record number of women elected"—a comment which draws two responses. First, women are achieving recognition in greater numbers; second, it's still news.

Organizations like AWM have helped women to better their careers in tangible and intangible ways: by providing lecture opportunities and prizes, by professional development sessions, through mentoring and leadership roles. But, even when acclaim for the achievements of women mathematicians and scientists has become routine, the AWM will still be a place where women can enjoy meeting and working with other women.

I feel honored to have been nominated to be president of AWM. I look forward to working with the officers and staff of the organization to expand the presence of AWM in AMS, MAA and SIAM activities, to continue the excellent traditions of the *Newsletter*, and to develop new mentoring and leadership opportunities for women researchers, teachers, and scholars.

Biographical Sketch: Barbara Keyfitz received her undergraduate education at the University of Toronto and her M.S. and Ph.D. from NYU's Courant Institute. She is now John and Rebecca Moores Professor of Mathematics at the University of Houston. Her research area is Nonlinear Partial Differential Equations. She is a Fellow of the American Association for the Advancement of Science and serves on the editorial boards of the *SIAM Journal of Applied Mathematics* and *Mathematical Methods in the Applied Sciences*. She has just completed a term on the Scientific Advisory Panel of the Fields Institute in Canada. Before joining the faculty at the University of Houston in 1983, she was a faculty member in engineering at Columbia and Princeton and in mathematics at Arizona State University. She has also held visiting positions at the University of Nice, at Duke University, at Berkeley, at the Institute for Mathematics and its Applications in Minneapolis, at the Fields Institute, and at Brown University. She is Vice President for Programs for the Society for Industrial and Applied Mathematics and a member of the Steering Committee for Section A of the American Association for the Advancement of Science.

TREASURER

Rebecca Herb, University of Maryland

I received my Ph.D. from the University of Washington, Seattle, in 1974, and have been on the faculty of the University of Maryland, College Park, since 1977. My main area of research is representation theory and harmonic analysis of real and p-adic reductive groups.

I have served the AWM in the past on the Executive Committee, the Travel Grants Selection Committee, and the Sonia Kovalevsky Days Grant Selection Committee. I am currently an organizer of the AWM leadership workshop for women which will be held in March, 2004. I have also served on the Council of the American Mathematical Society and the Editorial Board of the *Proceedings of the AMS*.

The main tasks of the treasurer are formulating yearly budgets, oversight of grants, and keeping full and accurate records of the financial affairs of the Association. I look forward to working with the officers, executive committee, and staff of the AWM in carrying out these duties.

MEMBER-AT-LARGE

Krystyna Kuperberg, Auburn University

I highly respect and admire AWM's commitment to all forms of activities designed to attract young women to mathematics, inspire their interest, and encourage them to aim as high as their talent and imagination allows. Girls can compete in mathematics with boys, on the same level, on every level—they only need confidence and support. Encouragement can come in various forms: praise, competition, an interesting problem or a lecture, and even criticism, as long as it does not discriminate.

In the age when mathematics as a field experiences inadequate funding and lacks popularity, the work of AWM is very important. The organization not only sets an example of how to reach out to the next generation, but targets a large group of the society with an enormous underutilized potential.

AWM is dedicated to excellence and high mathematical standards. The opportunity to run for an office of AWM is an honor.

Maxine L. Rockoff, New York Academy of Medicine

I was a member of the AWM in its early years, then dropped out as my career moved away from mathematics. I rejoined in 1999, when then-president Jean Taylor asked me to review the information systems that supported the AWM and its office at the University of Maryland. I subsequently had an opportunity to meet a large number of the AWM's current membership when I facilitated a set of planning sessions at an annual AWM meeting in New Orleans in 2001. I was quite struck by the vibrancy of the organization and the extent of its programs for encouraging and assisting women mathematicians. I would be pleased to be of further service if elected as a Member-at-Large. My contributions would come from outside the field, but could help with the managerial and fund-raising aspects of AWM's operations.

My career started as a programmer at the University of Pennsylvania, where I subsequently earned my Ph.D. in mathematics in 1964 with a thesis in numerical analysis that came out of a physiological problem on which I was working. I was a mathematical modeler of physiological systems at Yale and then Washington University

from 1965 through 1971. I joined the Federal government in 1971 in the National Center for Health Services Research, where I developed a program in which technology was used to improve the delivery of health services; it included an early set of telemedicine projects. I was very active in SIAM during that period, having been a member of the SIAM Council from 1974 to 1976, chaired the SIAM Education Committee from 1976 to 1978, and served on the Board of Directors from 1976-1978, chairing it the last year. I joined Merrill Lynch in 1980, applying many of the technological notions developed for health care to the brokerage industry (there really are parallels between the activities of brokers who advise clients and doctors who advise patients). I consulted on organizational implementations of technology, especially telecommunications and computers in support of cooperative work, from 1985 to the present, with occasional shifts into W-2 jobs to accomplish some specific objective. For examples, I worked as Senior Administrator for the Carnegie Commission on Science, Technology and Government, I initiated and managed a program to "wire up" settlement houses (social services agencies in inner cities), and now I am Director of the Division of Information Management at the New York Academy of Medicine, charged with steering a magnificent medical library into a world in which information management has been transformed by technology. I am also appointed as Senior Lecturer in the Department of Biomedical Informatics at Columbia University.

Elaine A. Terry, Saint Joseph's University

I am honored to have been nominated for Member-at-Large of the Association for Women in Mathematics. I am an assistant professor of mathematics at Saint Joseph's.

The AWM works to ensure that opportunities in the mathematical sciences are made available to girls and women. In particular the AWM promotes the research and professional efforts of women mathematicians. Through the Sonia Kovalevsky High School Mathematics Days (SKHSMD) the AWM works to ensure that young women are exposed to opportunities in the mathematical sciences. With research today showing that high school women of various backgrounds tend to outscore their male counterparts it is important that the Association continue with SKHSMD. As a Member-at-Large I will: (i) help promote the mathematical sciences as a viable option for women and girls; (ii) use my ties with other professional organizations to increase the Association's membership of underrepresented women; and (iii) support the Association's efforts to expand research opportunities to underrepresented women. I believe that my four years experience as SKHSMD coordinator together with my commitment to teaching and learning mathematics places me in a position to serve the AWM. I would be honored to ensure the aims of the AWM as a Member-at-Large.

Ann Trenk, Wellesley College

I have been a member of AWM since I was a graduate student and would be honored to serve on the Executive Committee. My undergraduate and graduate degrees come from departments whose faculty were all men, and I appreciated AWM's showcasing the accomplishments of women. In the 15 years that I've been attending mathematics conferences, I've seen a dramatic increase in the number of women attendees and speakers. I am fortunate to teach at an institution where women are not hindered by the perception that some fields are dominated by men. I look forward to a time when all students and faculty members feel welcome to the field of mathematics.

In recent years I have taken on leadership positions as Chair of my department, Local Arrangements Chair and Program Committee member for the MAA Northeastern Section's Fall meeting and as Program Director for the Discrete Mathematics Activity Group of SIAM. I have spent sabbaticals at the Center for Discrete Math and Computer Science (DIMACS) at Rutgers University and the School of Operations Research and Industrial Engineering (ORIE) at Cornell and spent time in the summers teaching in programs for talented high school students and programs for elementary and middle school teachers. I've enjoyed and learned a great deal from these positions and hope my experience will enable me to contribute to the leadership of AWM.

Biographical Information: Ann Trenk was an undergraduate mathematics major at Harvard University. Before attending graduate school, she taught high school mathematics at Middlesex School. Her Ph.D. is in Mathematical Sciences from Johns Hopkins University in 1991. She then spent a year as a postdoctoral fellow at Dartmouth College before starting her current faculty

position at Wellesley College.

Ann is now an Associate Professor and Chair of the Mathematics Department at Wellesley College. Her research is in Graph Theory and Ordered Sets and her book *Tolerance Graphs* (coauthored with Martin C. Golumbic) will be published this fall.

LETTER TO THE EDITOR

I would like to inform the AWM membership of a case of gender discrimination at Columbia. Professor Graciela Chichilnisky received a Ph.D. in mathematics with Professor Jerrold Marsden and a Ph.D. in economics with Professor Gerard Debreu at the University of California, Berkeley. She is now the UNESCO Professor of Mathematics and a Professor of Statistics at Columbia University. She is also director of Columbia's Program on Information and Resources (PIR) and chair of the Program on Mathematical Structures in the Environmental and Social Sciences.

In 1991 she took legal action against Columbia claiming gender-based inequity in pay and promotions as well as violations of academic freedom and retaliation. A settlement was reached in 1995 but Columbia soon began an all-out campaign against Chichilnisky including: not paying the salary of her UNESCO chair; not informing her of department meetings; dismantling the PIR offices and damaging her computer files; not delivering her incoming mail, and even opening it; freezing millions of dollars in research funds she had raised; and paying her close to 50% less than the average salary of male full professors in the Department of Economics.

These and other similar actions, which have not ceased, prevented her from inviting visitors, directing students, honoring existing financial and academic commitments to researchers, and fulfilling her research contracts.

Chichilnisky obtained a restraining order against Columbia forbidding further destruction of her offices in March 2000 and filed a second lawsuit alleging breach of the 1995 Settlement Agreement, retaliation, and sex discrimination. Columbia once again entered negotiations. In February of this year Columbia broke off settlement talks, fired its lawyer handling the negotiations, and countersued Chichilnisky on administrative issues that are clearly not substantive.

Her case is being supported by the American Association of University Women – Legal Advocacy Fund (see their web sites www.aauw.org/laf/cases/chichilnisky.cfm and www.northnet.org/nysaauw/laf.htm#convent). Colleagues and supporters have recently formed a support committee. We hope to persuade Columbia to return to settlement discussions with Chichilnisky. We invite you to get more information about Chichilnisky and the case from me at 608-798-3814 or mwhirsch@chorus.net. We hope you will join us in urging Columbia University to resolve this case with prompt and genuine settlement efforts.

Sincerely,

Charity Hirsch, Chair
Support Committee for Graciela Chichilnisky

NOMINATIONS FOR THE AWM-SIAM SONIA KOVALEVSKY LECTURE

The Assocation for Women in Mathematics in cooperation with the Society for Industrial and Applied Mathematics is requesting nominations for the 2004 AWM-SIAM Sonia Kovalevsky Lecture. This lecture is given annually at the SIAM Annual Meeting by a woman who has made distinguished contributions in applied or computational mathematics. The AWM-SIAM Sonia Kovalevsky Lecture was given for the first time on June 20, 2003 at the SIAM/CAIMS meeting in Montreal. The Department of Energy is the sponsor covering expenses for this new lecture series.

Letters of nomination should include an outline of the nominee's contributions to applied or computational mathematics, along with a list of some of her most important research papers. Send *five copies* of the letter to: The AWM-SIAM Sonia Kovalevsky Lecture Selection Committee, AWM, 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). Nominations via email or fax will not be accepted. The nomination deadline is **December 1, 2003**.

AWM WORKSHOP FOR WOMEN GRADUATE STUDENTS AND RECENT PH.D.'S

supported by the Department of Energy, the National Security Agency,
the Office of Naval Research, and the Association for Women in Mathematics

Over the past fifteen 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 12–13, 2004 (*pending final funding approval*) in conjunction with the Society for Industrial and Applied Mathematics (SIAM) 2004 Annual Meeting and the Life Sciences 2004 Conference at the Oregon Convention Center in Portland, Oregon, July 12–16, 2004.

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 research minisymposium will have a definite focus selected from the areas of Mathematical Biology, Modeling, Control, Optimization, Scientific Computing, and PDEs and Applications. AWM will offer funding for travel and two days subsistence for as many as twenty participants. Departments are urged to help graduate students and recent Ph.D.'s obtain supplementary institutional support to attend the workshop presentations and the associated meetings. All mathematicians (female and male) are invited to attend the 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, a graduate student must have begun work on her thesis problem, and a recent Ph.D. must have received her degree within approximately the last five years, whether or not she currently holds a postdoctoral or other academic or non-academic position. All non-US citizens must have a current US address. All applications should include a cover letter, a summary of research work (one or two pages), a title and abstract (75 words or less) of the proposed poster or talk, and a curriculum vitae. A supporting letter of recommendation from a faculty member or research mathematician who knows their research is required for graduate student applicants and recommended but not required for recent Ph.D.'s. Additional letters of support are encouraged. 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 final title and abstract with name, affiliation, address, etc. by mid-February to SIAM for the meeting program; AWM will provide instructions with the notification. For some advice on the application process from some of the conference organizers 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: www.awm-math.org

APPLICATION DEADLINE: Applications must be received by **January 26, 2004**.
Applications via email or fax will not be accepted.

please fold and place ballot in envelope

AWM BALLOT

Must be received by December 15, 2003

Only individuals who are members of AWM are eligible to vote.

President-Elect: (vote for **one**):

- ☐ Barbara Lee Keyfitz
  University of Houston
- ☐ _____

Treasurer: (vote for **one**):

- ☐ Rebecca Herb
  University of Maryland
- ☐ _____

Members-at-Large (vote for **two only**):

- ☐ Krystyna Kuperberg
  Auburn University
- ☐ Elaine A. Terry
  St. Joseph's University
- ☐ Maxine L. Rockoff
  New York Academy of Medicine
- ☐ Ann Trenk
  Wellesley College
- ☐ _____
- ☐ _____

Please VALIDATE your vote by signing your name on the outside envelope.

Unvalidated ballots will not be counted.

EDUCATION COLUMN

Conjecture, Proof and *Didactique*

One of the topics that is guaranteed to stir up conversation among mathematicians dealing with secondary and post-secondary students is proofs—whether students understand them, why students don't understand them, when they should be taught, how they should be taught, by whom they should be taught, etc. At the high school level, discussion often revolves around the "two-column proof" and its effectiveness and/or necessity. At the college level, once past the moaning phase, the conversation broadens out to optimal timing for a course addressing proof directly, best form for such a course, expected clientele and what is being done at other colleges and universities. In fact, a number of interesting things are indeed being done—but that's another column. This particular column deals instead with a much younger bunch of learners.

First let me give some context. I recently had the good fortune to be one of the presenters of a workshop on *Didactique* at the seventh Symposium on Elementary Mathematics Teaching at Charles University in Prague. *Didactique* is a French research program in mathematics education which is well into its fifth decade, but is only now getting to be known to the English-speaking world. Since the official language of the symposium was English, this seemed to Guy Brousseau, founder of *Didactique*, to be a good opportunity to spread the word. By way of rounding out the information imparted in two relatively general introductory sessions, he opted to present in detail one single set of lessons. His choice was the topic of counterexamples. I was so taken by the sequence and the depth of its possibilities that I decided to present it here.

Before I do that, though, I need to give a little more context, as well as a disclaimer about my intentions: this is not a panacea to be hurled at the heads of innocent primary teachers! At the core of *Didactique* is the Theory of Situations, which looks at teaching and learning not by focusing on one or two elements of the teacher-student-subject triangle, but by studying in all its complexity the set of relationships of the learners, the mathematics and the milieu. The milieu includes the other students, the concepts being learned, the concepts available to be used in constructing an understanding of the concept at hand, and other things of similar nature. The Situations in question are not recipes on offer, but elements of a study of what understanding it is possible for students to develop under a given set of circumstances. Many of the Situations were first tried out at an observation school (a public school in a blue-collar district) where students were taught all other topics in the standard way, and mathematics in a special way, often using such situations, and often under very careful observation. A rich collection of conclusions can be drawn from these studies—conclusions about the growth of knowledge and the mathematical capacities of students who are given the opportunity to take responsibility for some of their own mathematical understanding. Furthermore, these conclusions and the study that goes into them provide ideas and perspectives that have a lot to offer towards deepening the understanding of mathematics education. The only danger lies, as I indicated above, in regarding the Situations as recipes.

Onward to specifics: the Situation I am about to describe was studied with a class of fourth graders and is entitled The Biggest Number. The objective was to give students the opportunity to engage in the activity of a mathematician, rather than simply making use of a process mathematicians have produced. One very fundamental day-to-day activity in mathematical research is testing for validity by looking for counterexamples. The Biggest Number Situation was developed around the idea of counterexamples. I will first describe the bare bones of the Situation, then point out how it is used and what it achieves.

Phase one: the teacher announces, "I am going to give you five numbers. Your job is to use each of those numbers exactly one time and apply the regular operations (+, –, ×, and ÷) to produce the biggest number you can. If you can say exactly what you did, carry out the operations accurately, and get the biggest number anyone gets, you get a point." She then gives them the numbers 3, 8, 7, 5, 4. Essentially all of them stick with multiplication. A few computational errors arise and get sorted out, but most of the discussion comes in attempting to describe the method—how to verbalize it and whether order matters. Once that is done, they practice

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

on a few more and begin to think it's all a ruse for getting them to practice multiplication.

Then comes the next phase: "This time you are going to describe a method before you have the numbers. It has to be a description that someone else can use, and it has to apply no matter what numbers I give you. Work with three other students, and when your team has agreed to a method and a description of it, make a poster of it. Then all of you will look at the posters and each team will choose one produced by a different team and will apply that to our next set of numbers. If your team's poster is chosen, your team gets a point, but if it turns out not to work, you have to return the point plus a penalty. Are you ready?" And they get to work producing and choosing posters.

Once every team has made a choice and committed itself to following the method chosen, the teacher presents the numbers 4, 6, 2, 0, 5. After a brief period of chaos and rebellion, they settle back down to reformulate their methods, requiring that any zeros be added and everything else be multiplied. The teacher follows up with 3, 4, 6, 1, 2, and once the dust settles from that, with 5, 1, 4, 1, 7. The rest of the sequence you can deduce.

So what, besides fun and games and a highly engaged class, goes on during this sequence? For a start, there is the tremendous challenge of articulating a process instead of just following one—a particularly acute challenge when one considers that these are fourth graders, as yet unfamiliar with algebraic notation (the teacher suggests using letters to represent the unknown numbers, but in several repetitions of the Situation not one student took the suggestion). Then there is the shift in perspective from regarding a mathematical statement not as an edict from God (or the teacher, which is roughly equivalent) but as something about whose validity they need to be concerned. Then finally there is the repeated realization that all it takes is one counterexample to destroy a conjecture's validity (a realization so often repeated, in fact, that one student finished up with a plaintive query whether there were any mathematical theorems that didn't have counterexamples!). There is even the opportunity, given a skilled teacher, to discuss the fact that no collection of examples can constitute a proof, while one counterexample constitutes a disproof.

Wouldn't you love to have students coming to you—whether you are teaching them in middle school, high school or college—with those ideas firmly inculcated?

NON-STANDARD CAREERS

We continue our series of articles about women in mathematics whose careers have taken some unexpected twists and turns but have wound up satisfying. And we repeat our invitation: if you or someone you know has had such a career and would like to write about it, or to talk on the phone and have somebody else write about it, please get in touch with Ginger Warfield (warfield @math.washington.edu).

A Far Cry From Galois Fields*

I began my math career in the home of the purest of the pure: undergraduate mathematics at Princeton. Bourbaki and abstraction lay at the core of the Princeton math department of the 1970s.

- If you actually wanted to solve differential equations, you belonged in the engineering school's course.
- The only flavor of topology was algebraic.
- We never computed any groups during the algebra courses.

Math majors sat in Fine Library reading Hardy's *Mathematician's Apology*, "A mathematician is a maker of patterns. His patterns, like the painter's or the poet's, must be beautiful...." and learning topology from Spanier.

My other early mathematical influence was an NSF-funded summer math program, Hampshire College Summer Studies in Math (HCCSiM), which I attended the summer after my junior year of high school. I had a wonderful time and kept going back; I spent six summers teaching at HCSSiM during college and graduate school. Though the program concentrated on pure mathematics, its philosophy—"find patterns, make conjectures, prove things"—was far more computational than the mathematics of the day.

Meanwhile I attended Princeton, learning about field extensions without seeing an actual algebraic number. When I arrived at Cornell for graduate work, I was

Susan Landau, Sun Microsystems Inc.

* Title with acknowledgements to Muriel Sparks's *A Far Cry from Kensington*, Houghton Mifflin, 1988.

nevertheless interested in studying *computational* number theory and algebra. But this was the seventies and computation was anathema in mathematics departments. Then I happened upon an algorithms course in computer science.

My math colleagues were all under the impression that computer science was programming. Algorithms turned out to be graph theory, algebra, and proofs, in short, mathematics. I had great fun. Within a year, I was working with a faculty member in computer science. In the late seventies, theoretical computer science was experiencing much excitement about algebra. Because of the connection to the graph-isomorphism problem, computer scientists were interested in group-theory algorithms, while because of its use in public-key cryptography, number theory was also of great interest. This was terrific for me. However, after a year of little progress, fearing I would be in graduate school forever, I left Cornell.

One year later, I found myself back in graduate school—MIT—where my advisor had discovered a polynomial-time algorithm for testing primality (under the Extended Riemann Hypothesis). Two and a half years afterwards I had found a polynomial-time algorithm for determining solvability by radicals, an exponential improvement on the previous algorithm (which in turn was an exponential improvement on Galois' original technique) and completed my Ph.D. thesis.

Of course, there are more strands to the story. One is my husband. I started at MIT just a few weeks after I had married a fellow alum of the summer math program. My husband, another mathematician turned computer scientist (in his case, the mathematics was logic), took a position at Tufts while I was at MIT. Two-body problems are complicated; ours was no exception. When I finished my Ph.D., the computer science job market was great. But my husband and I were both theoretical computer scientists and two theoreticians was one too many for most departments. In addition, I was twenty-eight, we wanted kids, and I wasn't willing to wait till after tenure to start a family.

Our solution was that my husband took a position at Yale, while I went to Wesleyan (the schools are about forty minutes apart). I was part of the fledgling computer science group within the mathematics department. Wesleyan is a university with an odd mix: mostly an

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.

Travel Grants. 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, US air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

Eligibility. 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. (See http://www.nsf.gov/od/lpa/news/publicat/nsf03009/mps/dms.htm#1 for the list of supported areas.) Applicants must be women holding a doctorate (or equivalent experience) and having a work address in the US (or home address, in the case of unemployed mathematicians). Anyone who has been awarded an AWM-NSF travel grant in the past two years is ineligible. Anyone receiving significant external governmental funding (more than $1000 yearly) for travel is ineligible. Partial travel support from the applicant's institution or from a non-governmental agency does not, however, make the applicant ineligible.

Target dates. 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 location (city/state/country), and amount of support requested, 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) a list of all current and pending travel funding (governmental and non-governmental) and the amounts available for your proposed trip 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 two deadlines for receipt of applications are **February 1** and **May 1, 2004**.

undergraduate college but with Ph.D. programs in the sciences and ethnomusicology and bright and engaging students.

I very much liked my math colleagues, I liked the Wesleyan math department's emphasis on research, and I liked the bright and articulate undergraduates. I was less happy with the effort I had to expend convincing the administration and the other Wesleyan faculty that the study of computer science was appropriate at a liberal arts college (this was in the mid 1980s). Nonetheless, I was quite pleased with the choice. I proved theorems, taught classes, and had two children within my first five years at Wes. But best-laid plans and all that—my husband didn't get tenure at Yale.

Six years past my Ph.D., we were back on the job market. In the economic downturn of the late eighties, we were looking for two senior positions (or close to tenure for me). I had added a wrinkle, one that seemed useful at the time. At an odd juncture in my career—five years post-Ph.D.—I had applied for an NSF math postdoc so that I could concentrate on theorems while my children were small. The postdoc gave me some flexibility in the job hunt. We moved to the University of Massachusetts at Amherst, where my husband had a tenured position in computer science and I had promises.

Another strand in my story is that I have always been interested in public policy. In college I hadn't seen how to weave together my interest in pure mathematics with my concern for public policy. In graduate school, the two areas again seemed far apart. During my graduate school years, the *Notices of the AMS* began running a series of "Special Articles," pieces on mathematical subjects of general interest. Since many mathematicians had heard about the mathematics of public key, I proposed an article that combined the mathematics and public policy issues of cryptography. The editor agreed and I wrote "Primes, Codes, and the NSA" for the *Notices*. I liked the experience of doing the article. Four years later, while at Wesleyan, I followed this article with a decidedly non-political piece on symbolic computation. As soon as I had finished it, a political brouhaha erupted about US government suppression of cryptography research. Still at Wesleyan, I wrote a third article for the *Notices*, "Zero Knowledge and the Department of Defense." I was enjoying the writing, although the Wesleyan math department made it clear to me that this expository work would not count towards tenure. That was okay; my research was going well. I did these expository pieces out of love and a feeling that they were important.

In 1993 two things happened: my expected job at UMass did not materialize and the US government announced the proposed Escrowed Encryption Standard (EES), more commonly known as the Clipper Chip. The idea behind EES was that there would be an easily implementable algorithm for encrypting phone conversations. The keys would be stored with agencies of the US government.

To say this was controversial was an understatement. The US public policy committee of the Association for Computing Machinery put together a panel to study the public policy implications of EES. Knowing something of my situation at UMass, the chair of the policy committee asked me to work for the panel—a position I could fill working mostly from home.

The panel was high powered, with widely divergent views. Panelists included an assistant to the Director of the National Security Agency and the co-inventor of public-key cryptography, Whitfield Diffie. My background, skills, and energy rapidly moved me from staff of the report to chief writer. The report was a success, though, because of the widely divergent views of the committee members, the study didn't take strong stands. Instead the report focused on carefully delineating the issues. Diffie, a Distinguished Engineer at Sun Microsystems, suggested we collaborate on a book on cryptography policy. He thought it would take six months. It took three and a half years.

During that time my husband and I searched for academic positions and raised our kids. I continued in a research position at UMass. Writing the book further engaged me in policy. With Diffie, and on my own, I wrote op-eds that appeared in the *Christian Science Monitor* and the *Chicago Tribune*. I appeared on National Public Radio, talking about cryptography and wiretapping. I was invited to give keynotes and serve on various policy panels.

I began to look less and less like a mathematician/theoretical computer scientist and more and more like a policy wonk. A year after our book came out, Sun offered me a position as senior staff engineer. I would do one third technical work of interest to Sun, one third technical work of my own interest, one third policy work. I could work from home, with travel to Sun in California and in Boston. I accepted and it's been wonderful.

My work is an odd combination of the technical—I recently chaired a security review of a Sun project—and policy—currently I am helping shape Sun's public-policy stance on digital-rights management. Sometimes I look at cryptography and talk to Sun engineers and sometimes I visit the Sun public policy office in DC and write op-eds. I give talks on policy, on security, on cryptography, and on all three mixed together. I participate in policy seminars and workshops. I serve on the Information Security and Privacy Advisory Board, a Federal board which advises the Director of the Office of Management and Budget and the Secretary of Commerce on issues related to privacy and security of Federal civilian computer systems. I write papers. I don't prove theorems anymore. It is difficult to prove theorems if you don't spend much of your time thinking about mathematics—and I don't. I miss the clarity of mathematics, the chase to prove a theorem, the utter absorption as you hone your arguments. I am having a terrific time. But it's definitely a far cry from Galois fields.

BOOK REVIEW

European Women in Mathematics: Proceedings of the Tenth General Meeting, Emilie Mezzetti and Sylvie Paycha, editors, World Scientific, River Edge, NJ, 2003, ISBN981-238-190-2, x+409 pp..

Reviewer: Margaret Bayer, Book Review Editor, University of Kansas, Lawrence, KS 66045-7523, bayer@math.ukans.edu

I knew that there was a published proceedings of the 10th general meeting (2001) of the European Women in Mathematics, but my university library doesn't own it, I didn't have time to get it by interlibrary loan, and I didn't want to shell out $98 for my own copy. So I was happy to find it on the shelf of the UC Berkeley math library (I'm spending the fall at MSRI.) And it has been a pleasure to read and browse in it.

The EWM grew out of discussions at the International Congress of Mathematicians in Berkeley in 1986. Since then it has sponsored ten general (international) meetings, on a schedule of every odd year since 1991. By the time you read this, the 11th general meeting will have taken place in Luminy, Marseilles (November 3–7, 2003).

The program for the 10th meeting, as is typical, combined mathematics and issues of the profession. The main sessions, each with three or four talks, were: EMS lectures on convex polytopes by Michele Vergne, a session on Cohomology theories, a session on Mathematics applied to finance, a session on The uses of geometry, a session on Mathematics outside the classroom: cultural differences, and a session on the Socio-political dimensions of gender inequality. (The European Mathematical Society each year names a distinguished mathematician to give a series of lectures of an advanced expository nature in a couple of locations. Michele Vergne was so honored in 2001, and chose to give one series at the EWM meeting.) Participants in the 10th EWM meeting were also invited to display their research at a poster session. I did not attend the meeting, but the *Proceedings* conveys some of the special flavor it had.

Besides papers from the conference, the *Proceedings* includes an interesting section on the activities of the EWM and the function of the meetings. The EWM organizes the general meetings and other (regional) meetings and workshops, maintains a web site (www.math.helsinki.fi/EWM) with career and networking information, has a mentoring program, publishes an annual newsletter, and has conducted survey research on career paths.

I found most interesting a section of the *Proceedings* entitled "The Mathematical Part of EWM Meetings." The organization takes seriously their goal of "fostering scientific communication among the women and men in the mathematical community." The mathematical research talks at the meetings are approached as a laboratory for learning good lecture technique.

Each speaker submits in advance a draft of the lecture to the session coordinator. The draft is sent to several readers, including people outside the field ("stupid" or "naive" readers). The readers are to send back comments, to ensure that the talk will be accessible to the general mathematical audience. The coordinator is asked to plan a coherent session made up of talks that progress in level of difficulty. An open and interactive atmosphere is cultivated in the talks at the meeting itself. On occasion the audience has included a non-specialist plant, whose job is to ask clarifying questions. Also, the organizers promote the idea that it is non-threatening and

appropriate for an audience member to help answer a question.

In preparing the published *Proceedings*, a process similar to the pre-meeting one is followed. In particular, nonspecialist, "naive" readers are asked to read drafts and make suggestions before a paper is finalized. The meeting organizers also try to make the most of the poster session. Summaries of posters are submitted in advance. These are printed and distributed at the meeting, and posters are grouped by subject.

I have never attended a meeting where so much attention is paid to presentation. This process is designed to promote a better exchange of mathematical ideas, to enable the participants to make connections among different areas of mathematics, to build self-confidence, and to improve the participants' skills of speaking about, listening to, writing and reading mathematics. All mathematicians could benefit from this experience. In organizing their meetings, the EWM has made a serious and concrete contribution to improving the career experience of women.

I will not report in this review on the mathematical papers in the *Proceedings*, except to say that the authors have generally aimed to make their work understandable for non-experts. Also, the session on Mathematics applied to finance includes something I have never seen in mathematical proceedings before: a report on a discussion on "The ethics of using mathematics in finance."

I turn now to the session on Mathematics outside the classroom: cultural differences. The reality is that ordinary people's perception of mathematics comes almost exclusively from their school experience. This

SONIA KOVALEVSKY HIGH SCHOOL MATHEMATICS DAYS

Through grants from Coppin State College and the National Security Agency (NSA), the Association for Women in Mathematics will 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.

An additional selection cycle will be held in February 2004 for Spring 2004 using funds remaining after the August 2003 selection cycle. AWM anticipates awarding up to six additional grants ranging on average from $1500 to $2200 each ($3000 maximum per school) to universities and colleges. Historically Black colleges and universities are particularly encouraged to apply. Programs targeted toward inner city or rural high schools are especially welcome. If selected, institutions will receive (upon request) 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) plans for activities, including specific speakers to the extent known; b) qualifications of the person(s) to be in charge; c) plans for recruitment, including the securing of diversity among participants; d) detailed itemized budget (i.e., food, room rental, advertising, copying, supplies, student giveaways, etc. Honoraria for speakers should be reasonable and should not, in total, exceed 20% of the overall budget. Stipends and personnel costs are not permitted for organizers. This grant does not permit reimbursement for indirect costs or fringe benefits. Please itemize direct costs in 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 in late February for high school days to be held in Spring 2004. 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 June 1, 2004, 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, or visit www.awm-math.org. Applications must be received by **February 4, 2004**; applications via email or fax will not be accepted.

perception is generally quite negative and is reinforced by images in the media. The result is a lack of awareness of the role mathematics plays in technological innovation, of the imaginative aspects of mathematics, and of the active development of the field of mathematics. One conclusion is that the mathematics community should focus energies on getting the message to teachers.

In Europe, as in North America, journalists want the sensational, and mathematics is usually not represented in that way. But Europe is blessed with mathematical magazines for young people, which have not taken hold in the US. Traveling museum exhibits on mathematics exist in France, Germany, and Italy. The *Proceedings* includes some discussion of World Mathematics Year 2000. To continue the public awareness work of WMY2000, the European Mathematical Society formed the Committee for Raising Public Awareness of Mathematics (www.mat.dtu.dk/people/V.L.Hansen/rpa.html).

Mireille Chaleyat-Maurel writes in the *Proceedings* of her interest in comparing the popularization of mathematics in different European countries and investigating possible differences between men and women concerning popularization of mathematics. Unfortunately, she did not find data on these topics, but she reports that southern European countries organized many more events for WMY 2000 than northern or eastern European countries. Chaleyat-Maurel's article includes pictures of mathematical posters made in connection with WMY 2000 for display on subway trains. In another article, Franka Miriam Bruckler describes the attempts of mathematics popularization in Croatia, where there is no money available and efforts are dependent on the volunteer work of people already overextended.

Finally, the EWM 10th meeting had a session on the "Socio-political dimension of gender inequality." In 1998 the Research Directorate General of the European Commission set up a task force on Women in Science. The task force produced a report, "Science Policies in the European Union: Promoting Excellence through Mainstreaming Gender Equality." Claudine Hermann, who was a member of the task force, summarizes the report in the *Proceedings*. (The report itself may be found at www.cordis.lu/improving/women/documents.htm.) Included is a table giving the percentages of faculty (all fields) that are women in 23 countries, mostly western European. In general, by this measure, women are doing best in southern Europe, Scandinavia is in the middle, and the German and Dutch-speaking countries are at the bottom. The figures for mathematics are distinct from those for all of academia. The EWM web page includes a table of percentages of women among mathematics students, mathematicians, and full professors of mathematics for 29 countries.

I was curious about the meaning of the word "mainstreaming" in the task force report. In her article about actions and groups in Italy, Rosa Maria Spitaleri gives the definition used in the report: "Mainstreaming is the systematic integration of equal opportunities for women and men into the organisation and its culture and into all programmes, policies and practice; into ways of seeing and doing." Spitaleri describes a period in which various structures have developed in Italy to provide a focus on the status of women in science and other sectors of the economy. These include national political structures (the Equal Opportunity Ministry, the Equality and Equal Opportunities National Commission, and the National Committee for Equality and Equal Opportunities in Labour), academic organizations (the Working Group on Women's and Gender Studies in the Ministry of Education, the Associazione Italiana Donne in Matematica, and equal opportunity committees at individual universities), and studies by the national research body (CNR). She indicates that the current need is for "networking and visioning," to overcome isolation and coordinate activities for greatest effectiveness.

Ina Kersten and Emilia Mezzetti report on the questionnaire project of the Committee on Women and Mathematics of the European Mathematical Society. In 1999, the EWM wrote and distributed a questionnaire on career paths. Part of the motivation was to determine if age limits on funding opportunities and jobs discriminate against women. The results (from a small number of responses) were reported in the *Proceedings* of the 9th EWM Meeting. Subsequently, the EMS Women and Mathematics Committee adapted the questionnaire, and the report here summarizes the responses of 109 men and women. The EMS committee plans to continue studying the issue.

The EWM meeting and *Proceedings* give a wonderful model for how mathematics and professional and gender concerns can be addressed in a single setting. I encourage you to get the book (recommend that your library buy it, use interlibrary loan ...), and to read the mathematical papers, as well as the sections I've reported on here.

AFTER TENURE: WOMEN MATHEMATICIANS TAKING A LEADERSHIP ROLE

(A WORKSHOP DEDICATED TO THE MEMORY OF RUTH MICHLER)

Supported by the University of North Texas and the National Science Foundation
through Ruth Michler's POWRE grant

Announcement: The AWM will hold a workshop at the University of Maryland, College Park, during the weekend of March 12–14, 2004. The workshop will prepare women who have already established careers in the mathematical sciences to become leaders in the profession. The target audience will be women who have been recently tenured at academic institutions or who are at a similar level in an industrial or government position. The workshop will bring together this audience with senior women who are leaders in the profession. Senior participants will include: Ruth Charney, Brandeis University; Carolyn Gordon, Dartmouth College; Rebecca Herb, University of Maryland, College Park; Linda Keen, Lehman College, CUNY; Gail Ratcliff, East Carolina University; and Jean Taylor, Courant Institute of Mathematical Sciences, NYU.

Format: Leadership activities will include panels, informal discussions and case studies. The panels and discussions will address issues concerning being a department chair or college administrator, being involved in the professional societies, being a research leader, and being an effective mentor. Mathematical activities will include expository talks.

Applications: Applicants must be women holding tenure or equivalent experience and must have a work address in the US. The applicant's research must be in a field that is supported by the Division of Mathematical Sciences of the NSF. (See http://www.nsf.gov/od/lpa/news/publicat/nsf03009/mps/dms.htm#1 for the list of supported areas.)

Each applicant should submit *five copies* of each of the following: 1) a cover letter; 2) a curriculum vita; 3) a statement explaining the applicant's experience and interest in leadership posititions; and 4) a supporting letter from a senior mathematician (e.g., the chair of the applicant's department).

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

Leadership 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: www.awm-math.org

Initial deadline: **November 20, 2003**. The initial decisions on selection for participation and funding will be made late-November/early December. An additional selection cycle will be held with deadline **January 20, 2004** if space and funds remain after the November 2003 selection cycle **(check www.awm-math.org for announcement on status of additional selection cycle.)** Applications via email or fax will not be accepted.

AWARDS AND HONORS

CONGRATULATIONS to our host department. The department and its members have garnered several honors recently. The University of Maryland Department of Mathematics has been awarded a multi-year VIGRE grant from NSF to support undergraduate and graduate students and postdoctoral fellows. Distinguished University Professor JAMES YORKE has been named one of the two winners of the Japan Prize for 2003, awarded by the Science and Technology Foundation of Japan. Assistant Professor KONSTANTINA TRIVISA has won a prestigious five-year CAREER award from the National Science Foundation. Professor RICHARD SCHWARTZ has been awarded a Guggenheim Fellowship for 2003.

Portraits of OLGA TAUSSKY TODD (1906–1996) and JOHN TODD (1911–) were added to the Portrait Gallery of Distinguished NBS/NIST Alumni in September 2002. The gallery honors staff members and research associates of the National Bureau of Standards, now the National Institute of Standards and Technology.

John Todd was recognized for his research and leadership at NBS during the formative years of scientific computing. In 1947 Todd joined NBS, working closely with John Curtiss to establish the new National Applied Mathematics Laboratory (NAML, later known as the Applied Mathematics Division). NAML included the Institute for Numerical Analysis, which was housed at UCLA. In 1949, Todd became Chief of the NAML's Computation Laboratory in Washington. The Computation Laboratory co-developed (with the NBS Electronics Division) and operated the Standards Eastern Automatic Computer (SEAC). Dedicated in 1950, SEAC was the first operational stored-program electronic digital computers in the United States. Todd assembled a capable group of researchers, and both led and participated actively in research on mathematical methods for exploiting the new computational power that was at hand. He studied methods for evaluating mathematical functions, generating random numbers (for Monte Carlo calculations), conformal mappings, and computations with matrices. He worked on the construction of mathematical tables. During this period, NBS became the leading center for a newly emerging field of legitimate mathematical research: numerical analysis. In 1954, Todd became Chief of the Numerical Analysis Section of the Applied Mathematics Division, a position he held until 1957.

Olga Taussky Todd was recognized for her contributions to the NBS applied mathematics program in the areas of algebra, number theory, and matrix theory during her tenure there from 1947–57. In 1947, Taussky Todd became a full-time consultant to the NBS NAML. Stimulated by the computer revolution, researchers such as Taussky Todd began to establish matrix theory as a new field of study. Taussky Todd's wide knowledge of mathematics and mathematicians is credited with playing an important part in the development of the NBS Institute for Numerical Analysis. Many researchers in linear algebra and applications were invited to NBS as staff or as visitors, making NBS the leading center for work in this area. Today, linear algebra and matrix theory are as a necessary tool for all scientists. Taussky Todd also developed novel techniques for solving mathematical problems on the newly emerging computers.

CONGRATULATIONS to the following winners of awards and honors. The 2001 Kenneth O. May Medal for outstanding contributions to history of mathematics: LAM LAY YONG, National University of Singapore. 2002 AAAS Fellow: FAN CHUNG GRAHAM, UC San Diego. 2002 Whitehead Prize of the London Mathematical Society: MARIANNA CSÖRNYEI, University College, London, for work in real analysis, geometric measure theory, and geometric nonlinear functional analysis. 2002 d'Alembert Prize of the Société Mathématique de France: jointly to JEAN BRETTE, Palais de la Découverte, CATHERINE GOLDSTEIN, Université Paris-Sud, MIREILLE CHALEYAT-MAUREL, Université Paris V, and GÉRARD TRONEL, Université Pierre et Marie Curie for their presentations during WMY2000. 2003 Sloan Fellows: TRACHETTE L. JACKSON, University of Michigan, Ann Arbor; SYLVIA SERFATY, New York University, and LUMINITA VESE, UCLA. 2003 member of the National Academy of Engineering: ELAINE S. ORAN, US Naval Research Laboratory, "for unifying engineering, scientific, and mathematical disciplines into a computational methodology to solve challenging aerospace combustion problems."

http://math.nist.gov/mcsd/highlights/alumni02.html

— continued page 22 —

COLLABORATIVE RESEARCH GRANTS FOR WOMEN

Dedicated to the memory of Ruth Michler

Supported by the University of North Texas and the National Science Foundation
through Ruth Michler's POWRE grant

The objective of the Collaborative Research Grants is to enable women who are already tenured to carry out collaborative research at other institutions. (Women who are not yet tenured are referred to the Mentoring Grants Program.) The length of stay may vary from one week to several months, although only partial support will be provided for the longer stays. Each grant will fund travel, accommodations, and other required expenses for a tenured woman mathematician to travel to an institute or a department to do research with a specified individual. Typical grants will be under $4000, although higher amounts may be awarded in exceptional cases. All travel must be completed by August 31, 2004. For foreign travel, US air carriers must be used (exceptions only per federal grant regulations; prior AWM approval required).

Applications: Applicants must be women mathematicians with a work address in the US. Preference will be given to women who have been recently tenured or who have an equivalent level of experience in an industrial or governmental position. The applicant's research must be in a field that is supported by the Division of Mathematical Sciences of the National Science Foundation. (See http://www.nsf.gov/od/lpa/news/publicat/nsf03009/mps/dms.htm#1 for the list of supported areas.)

An application should consist of: 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 collaborator (who must indicate his/her availability at the proposed travel time), together with the curriculum vita of the proposed collaborator; 5) a proposed 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. If you have questions, contact AWM by phone (301-405-7892) or email (awm@math.umd.edu).

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

Collaborative Research Grant 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: www.awm-math.org

APPLICATION DEADLINE: Applications must be received by **February 10, 2004**.
Applications via email or fax will not be accepted.

OPPORTUNITIES

Nebraska Conference

The sixth annual Nebraska Conference for Undergraduate Women in Mathematics will take place February 6–8, 2004 at the University of Nebraska – Lincoln. This conference is a national showcase for research projects by undergraduate women. In addition to the main program of undergraduate research talks, the organizers are very pleased to have plenary addresses by Dr. Fern Hunt of the National Institute of Standards and Technology and Professor Nancy Kopell of Boston University. There will also be panel discussions about such topics as "Choosing a Graduate School" and "Careers Using Mathematics." Lloyd Douglas from NSF will be on hand to discuss opportunities available through NSF. The conference attracts students from all over the US and Puerto Rico. Participants hear a lot of interesting mathematics, meet with other women who share their interest in mathematics, and, if they have participated in research programs, present their research.

The conference began in 1999 as part of the UNL Department of Mathematics' effort to continue their work in mentoring women students and was funded in part by the Department's 1998 Presidential Award For Excellence in Science, Mathematics & Engineering Mentoring. That year, a little over 50 undergraduates participated in the conference. Over the years, the conference has grown in both size and prestige and last year hosted 180 undergraduates. The conference has hosted such prominent keynote speakers as Karen Uhlenbeck and Dusa McDuff. Last year, Jean Taylor of Rutgers University and Jennifer Chayes from Microsoft Research gave keynote addresses. The conference is currently funded by grants from the NSA and NSF.

Not only does the conference offer a wonderful mathematical program, it also offers young women the opportunity to meet other women, in various stages of their careers, who share their interest in mathematics, and it provides participants with a wealth of information about opportunities for such things as undergraduate research, fellowships and career possibilities.

Past participants have been very enthusiastic about their conference experience. One participant said, "I wish I'd known about this program two years ago—I needed the confidence even more then. I will spread the word about this program to all I know. I *never* expected to get this much out of just a three-day event. This has been so wonderful!" Another said, "The conference has been a pivotal piece of my undergraduate math career and a great forum to learn about other opportunities out there and meet my future female peers in mathematics." And more than one participant has said that the conference was "one of the best experiences of my undergraduate career."

This year's organizers are UNL professors Allan Donsig, Wendy Hines, Richard Rebarber, and Judy Walker and UNL students and conference alumni Kathy Bartley, Melissa Desjarlais, Pari Ford, Libby Beer and Elizabeth Green. More information may be found at the conference website: www.math.unl.edu/~ncuwm.

Wendy Hines, University of Nebraska – Lincoln

AAAS Meeting to Offer Strong Mathematics Program

The 2004 Annual Meeting of the American Association for the Advancement of Science, February 12–16, in Seattle, WA 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:

- The Convergence of Computer Graphics and Computer Vision (P. Anandan and Jim Kajiya, Microsoft Research)
- Optimal Stent Design for Cardiovascular Intervention (Suncica Canic, University of Houston)
- Phase Transitions in Computer Science (Allon Percus, Institute for Pure and Applied Mathematics)
- The Changing Nature of Proof in Mathematics: Past, Present, Future (Warren Page, City University of New York)
- Community Structure of the Internet and WWW (Jennifer Tour Chayes, Microsoft Research)

Other symposia that will be of interest to the mathematical community include: The Rise of Machine Learning; Forum for School Science: Preparation of

Warren Page (wxpny@aol.com), Secretary of Section A of the AAAS

Science and Mathematics Teachers; Wavelet-Based Statistical Analysis of Multiscale Geophysical Data; Bioterrorism Policy and Quantitative Methods; Modeling and Risk Assessment; 21st Century Photonics; Intellectual Property and the Research Exemption: Its Impact on Science; and What Progress Have We Made in Integrating Technology into Teaching and Learning?

The above symposia are only a few of the 150 or so AAAS program offerings in the physical, life, social, and biological sciences. For further details about the 2003 AAAS program, see the October 17, 2003 issue of *Science*.

AAAS annual meetings are the showcases of American science, and they encourage participation by mathematicians and mathematics educators. (AAAS acknowledges the generous contributions of AMS for travel support and SIAM for support of media awareness.) 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 seeks 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 7:45–10:45 P.M. Friday, February 13, 2004 at the Sheraton Seattle Hotel (room to be determined). I invite you also to send me, and encourage your colleagues to send me, symposia proposals for future AAAS annual meetings.

Project NExT/YMN Poster Session

Project NExT and the Young Mathematician's Network invite submissions of abstracts for a poster session to be held on Thursday, January 8, 2004 from 2:00 to 4:00 P.M. (room TBA) at the Joint Mathematics Meetings in Phoenix. 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 provided onsite. We expect to accept thirty posters from different areas within the mathematical sciences. Should you have a

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 seven grants, in amounts up to $4000 each. Each grant will fund travel, accommodations, 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. Awardees may request to use any unexpended funds for further travel to work with the same individual during the following year. In such cases, a formal request must be submitted by the following February 1st to the selection committee, or the funds will be released for reallocation. (Applicants for mentoring travel grants may in exceptional cases receive two such grants throughout their careers, possibly in successive years; the second such grant would require a new proposal and would go through the usual competition.) For foreign travel, US air carriers must be used (exceptions only per federal grant regulations; prior AWM approval required).

Eligibility. Applicants must be women holding a doctorate or equivalent experience and with a work address in the US (or home address if unemployed). The applicant's research may be in any field that is supported by the Division of Mathematical Sciences of the National Science Foundation. (See http://www.nsf.gov/od/lpa/news/publicat/nsf03009/mps/dms.htm#1 for the list of supported areas.)

Each applicant should submit *five copies* of each of the following: 1) a cover letter (if a prior AWM-NSF mentor grant has been awarded, indicate so); 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 indicate his/her availability at the proposed travel time), together with the curriculum vita of the proposed mentor; 5) a proposed 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 all application materials 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, 2004**.

special requirement involving a computer hookup, please let us know and we will check to see whether it may be accommodated.

If you are interested in participating, submit copies of your abstract to: Professor Ken Ross, Department of Mathematics, University of Oregon, Eugene, OR 97403-1222, phone: (541) 346-4721, fax: (541) 346-0987 (label fax clearly for "Ken 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 fax clearly for "Kevin Charlwood"), email: kevin.charlwood@washburn.edu.

Our poster sessions the past seven years have been a great success. 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 9, 2003**. Preference will be given to those who did not earn a Ph.D. prior to 1998; 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. Submissions will be acknowledged quickly by email. Accepted abstracts will be posted at www.youngmath.net/Documents/2003/Posters/ before the Joint Meetings.

Science Books and Films

Published since 1965 by the American Association for the Advancement of Science (AAAS), *Science Books and Films* (*SB&F*) is the only critical review journal devoted exclusively to print and non-print materials in all of the sciences (including mathematics!) for all age groups. *SB&F* is published six times a year and reviews over 150 materials in each issue. *SB&F* provides reviews of the scientific accuracy and presentation of print, audiovisual, and electronic resources intended for use in science, technology and mathematics education. Careful evaluation of these resources is vital to a better understanding of science by the next generation.

As an affiliate of AAAS, members of AWM are entitled to subscribe to *SB&F* at the special members price of $35.00 per year ($45.00 for nonmembers). To receive the special price online, go to www.sbfonline.com/subscribenow.htm. Towards the middle of the page is a section that says "Are you an AAAS member or a member of an AAAS affiliate organization? If so, then click here to subscribe at our special member's rate using your member number or promotional code." Use AFL03 for the member code.

Also note that *SB&F* is always looking for reviews to add to the database.

Heather Beecheler, Editor

CIES

The Council for International Exchange of Scholars (CIES) is pleased to announce the third year of the Fulbright New Century Scholars Program (NCS), a global program for individual research and multidisciplinary/multinational collaboration within the Fulbright Scholar Program. The research theme for NCS III is "Toward Equality: The Global Empowerment of Women."

NCS III will support accomplished scholars and professionals who wish to share their work and build collaboration within and across issue communities. Approximately 30 fellows will be selected from the US and around the world. NCS Scholars will conduct individual research, make an international exchange visit of two to six months, and participate in a program of seminars in the US and abroad. In so doing, they will identify and carry forward collaborative projects to advance research, education and/or policy to improve the lives of women.

Participants will receive awards in the amount of $41,500, plus travel and per diem for orientation and program seminars. The complete program description, application guidelines and materials are now posted on the CIES website at http://www.cies.org/ncs/. Deadline for receipt of applications at CIES is **December 15, 2003**; selections will be announced in February.

MentorNet

The MentorNet One-on-One Mentoring Programs are a chance to make a big difference in the life of someone

Jennifer Dockter, Ph.D., Director of Programs, jdockter@mentornet.net

else, while spending as little as 20 minutes a week using email. The mentoring programs pair women engineering, science and math community college, undergraduate and graduate students and postdocs as protégés with female or male professionals from all sectors as mentors for one-on-one, email-based mentoring (e-mentoring) relationships. Our flagship Industry E-Mentoring Program is for protégés interested in working in industry or at a government laboratory or agency, while our Academic Career E-Mentoring Program (new for 2003) is for graduate students and postdocs interested in a faculty career.

The program has proven effective by providing real-world information, encouragement, advice, and access to networks that are otherwise often unavailable to women students in the male dominated fields of engineering and science. This is why over 90% of participants would recommend MentorNet's e-mentoring programs to a friend or colleague.

How can you volunteer to be a mentor? 1) Join the MentorNet Community. 2) Sign in to the Community and follow the One-on-One Mentoring Programs links to create a mentor profile. Since 1998, MentorNet has matched nearly 20,000 protégés and mentors with strong results. We hope you will join them! For more information, please go to www.MentorNet.net.

ICME-10

Under the auspices of ICMI (International Commission on Mathematical Instruction) the 10th International Congress on Mathematical Education, ICME-10, will be held in Copenhagen, Denmark, July 4–11, 2004. The aim of the ICME is to: show what is happening in mathematics education worldwide, in terms of research as well as teaching practices; exchange information on the problems of mathematics education around the world; and learn and benefit from recent advances in mathematics as a discipline. See www.icme-10.dk/.

Mass Media Summer Fellowships

The AMS provides support each year for one or two graduate students to participate in the Mass Media Science and Engineering Summer Fellows Program, program of the AAAS. The application deadline for summer 2004 is **January 15, 2004**. See ehrweb.aaas.org/massmedia.htm for further information.

GIRLS IN SCIENCE AND ENGINEERING

New Formulas for America's Workforce: Girls in Science and Engineering is a recent publication of the Research on Gender in Science and Engineering Division of Human Resource Development, Education and Human Resources, NSF.

Find experts. Get ideas. More than 200 easy-to-read stories bring to life NSF-funded projects (1993–2001) to broaden girls' and women's participation in science and engineering. The book's comprehensive index makes it easy to find descriptions of special programs for middle school girls, engineering students, museums, math teachers, learning technology, and more. This jargon-free guide to changing attitudes in teachers, students, parents, and administrators is available online at www.nsf.gov/pubs/2003/nsf03207/start.htm. In addition, the free printed book (NSF 03-207) and CD-ROM (NSF 03-208) are available via NSF Publications at www.nsf.gov/home/orderpub.htm. Anyone interested in science and engineering education may request multiple copies for distribution at workshops, conferences, or meetings.

MORE AWARDS AND HONORS

CONGRATULATIONS to those below for their meritorious achievements.

2003 Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics, awarded by the MAA at the Joint Mathematics Meetings: JUDITH V. GRABINER, Pitzer College, RANJAN ROY, Beloit College, and PAUL ZEITZ, University of San Francisco. From Grabiner's citation: "Professor Grabiner enjoys an international reputation as a scholar in the history of mathematics. Her teaching career spans 35 years, with most of that at California State University, Dominguez Hills and (since 1985) Pitzer College. She is universally praised for the depth and range of her knowledge of mathematical history and is famous for giving talks that are knowledgeable, witty, charming, and beautifully organized and that hold the

interest of both the trained mathematician and the 'I hate math' undergraduate. She is a sought-after speaker."

2003 MAA Certificates of Meritorious Service: KARIN CHESS, Owensboro Community College, Kentucky Section and CHARLOTTE KAPPE, State University of New York at Binghamton, Seaway Section. 2003 Kovalevskaia Prize: MIRIAM LÓPEZ PÉREZ, José Antonio Echevarria Polytechnic University, Cuba, who developed better equations to model the use and distribution of electrical energy in Cuba's national network. 2003 Clay Mathematics Institute long-term prize fellow: MARIA CHUDNOVSKY, Princeton University. The Institute says: "The fellowship provides a young mathematician employment under ideal conditions for a period of up to five years. A Fellow may work at the location that best suits his or her research; traveling and research expenses, as well as provisions for collaboration, are available in addition to a generous salary."

2003 Leibniz Prize awarded by the Deutscheforschungsgemeinschaft: HÉLÈNE ESNAULT and her husband ECKHART VIEHWEG, both at Universität Essen, for over twenty years of joint work in algebraic and arithmetic geometry. 2003 Dannie Heineman Prize for Mathematical Physics: YVONNE CHOQUET-BRUHAT, Université Pierre et Marie Curie and JAMES YORK, Cornell University "for their separate as well as joint work in proving the existence and uniqueness of solutions to Einstein's gravitational field equations for a variety of sources and for formulating these equations so as to improve numerical solution procedures with relevance to realistic physical systems."

2002 NSF Postdoctoral Fellowships (name, Ph.D. institution, fellowship institution): SHELLY L. HARVEY, Rice University, UC San Diego; TARA S. HOLM, MIT, UC Berkeley; and JESSICA S. SIDMAN, University of Michigan, UC Berkeley. 2003 NSF Postdoctoral Fellowships: LAURA G. DEMARCO, Harvard University, University of Chicago; ELIZABETH D. MANN, Oxford University, MIT; LAURA F. MATUSEVICH, UC Berkeley, Harvard University; COLLEEN C. MITCHELL, Duke University, Boston University; and ANDREEA C. NICOARA, Princeton University, Harvard University. 2003 NSF Graduate Research Fellowships (name, undergraduate institution, intended graduate institute): KATHERINE A. BOLD (University of Texas, Austin), New School University, New York; KATHLEEN A. GRUHER (University of Chicago), MIT; MELANIE M. LEE (UCLA), Stanford University; ROSALYN C. RAEL (Western New Mexico University), Cornell University; DEENA R. SCHMIDT (University of Akron), Cornell University; ELIZABETH A. SCOTT (Rice University), UC Berkeley; KIRSTEN G. WICKELGREN (Harvard University), Princeton University; HEIDI L. WILLIAMS (Dartmouth College), Brown University; MELANIE E. WOOD (Duke University), Harvard University; TATIANA V. YARMOLA (UC Berkeley), Cornell University; and JOSEPHINE T. YU (UC Davis), MIT.

2002 Trjitzinsky Memorial Awards: CHALLIS KINNUCAN, Bates College; JULIE BRINTON, Brigham Young University, SUZANNE L. ROBERTSON, The College of William and Mary; and AIMEE J. GROUDAS, University of Hartford. 2002 AMS Awards for Outstanding Pi Mu Epsilon Student Paper Presentations: ELIZABETH DONOVAN, Worcester Polytechnic Institute, "Maximum chromatic status of a graph" and TERESA SELEE, Youngstown State University, "The assumptions and strategies of repeated games."

FY 2001 CAREER award: MARINA VANNUCCI, Texas A&M University, Some Applications of Wavelets in Statistics. 2003 AMS-AAAS Mass Media Fellowship: CLAUDIA CLARK, Northeastern University, who was based at Voice of America for summer 2003.

SUSAN FRIEDLANDER, University of Illinois at Chicago, and HELEN MOORE, American Institute of Mathematics, will represent AWM on the Joint Committee on Women for 2003–2004.

MELANIE E. WOOD, Duke University was one of the five highest-ranking individuals in the 63rd William Lowell Putnam Competition. Sister and brother PO-LING LOH and PO-RU LOH of Madison, Wisconsin were among the twelve highest scorers in the 2003 USA Mathematical Olympiad.

2002 National Defense Science and Engineering Graduate Fellowships (name, institution, awarding office): TEENA GERHARDT, Stanford University, Army Research Office (ARO); CAMILLIA SMITH, Michigan State University (ARO); and LAUREN WILLIAMS, MIT, Air Force Office of Scientific Research.

AWM SURVEY ON CHILDCARE NEEDS AT THE JOINT MATHEMATICS MEETINGS

The Association for Women in Mathematics is investigating the feasibility of onsite childcare at the Joint Mathematics Meetings. It is essential for us first to obtain a better idea of the demand for such services. If you are interested in onsite childcare, please return your survey, preferably by **December 1**, either

- by post to AWM; 4114 Computer and Space Sciences Building; University of Maryland; College Park, MD 20742-2461
- or by email to Maura Mast (AWM clerk) at mmast@math.umb.edu.

1. If an onsite children's program were available, would you be more likely to attend the Joint Mathematics Meetings in 2005?

   Yes ☐ No ☐

2. If an onsite children's program were available, would you be likely to attend a greater proportion of the Meetings events?

   Yes ☐ No ☐

3. If this service were offered at the 2005 Joint Annual Meetings, to what extent would you use it each day?

   Full day (roughly 8:30–5:30) ☐ Half day ☐

   Off and on during the day ☐ Would not use it ☐

4. What is the maximum you would be willing to pay for a quality children's program?

   $6 per hour per child ☐ $7 per hour per child ☐

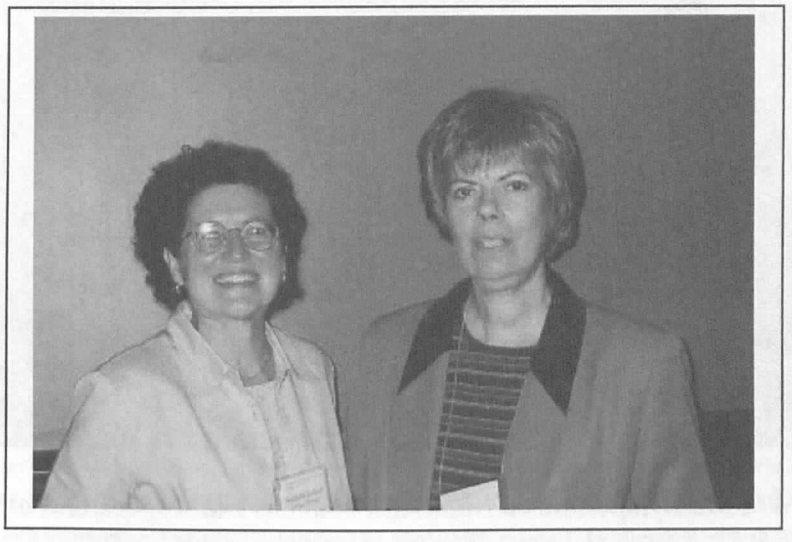
   $8 per hour per child ☐ $9 per hour per child ☐

   $10 per hour per child ☐ other _____

5. What are the ages of your children who would use the service?

6. Any additional comments?

AWM WORKSHOP AT SIAM, JUNE 2003

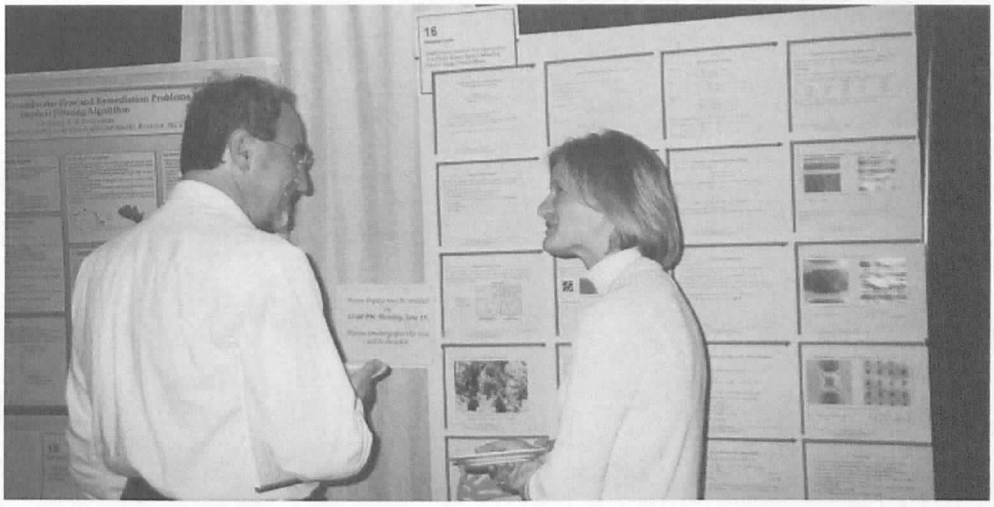


(L to R): Suzanne Lenhart, University of Tennessee & Oak Ridge National Laboratory and Barbara Keyfitz, University of Houston

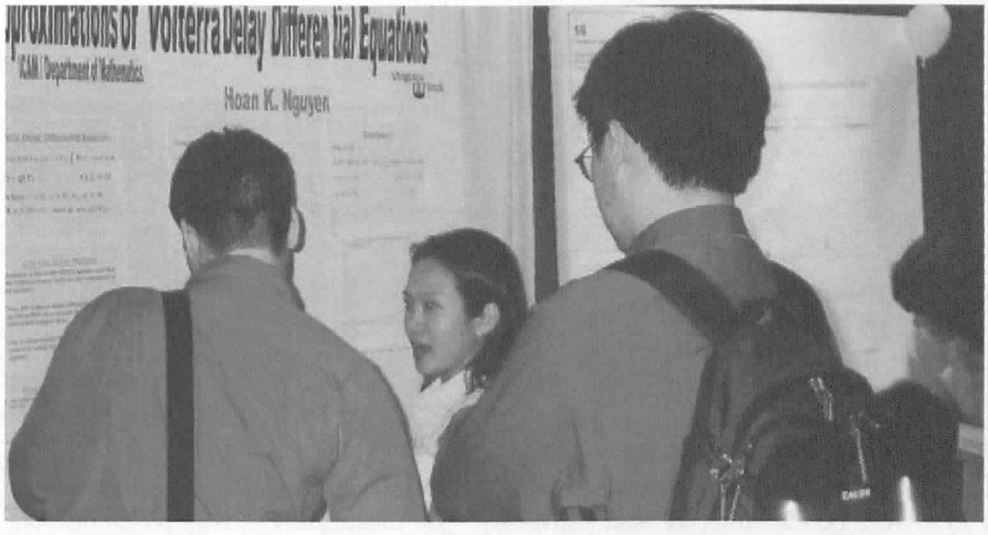
AWM Minisymposium on Career Opportunities and Perspectives
(L to R): Sue Ann Campbell, University of Waterloo; Carlos Castillo-Chavez, Cornell University; Helen Moore, American Institute of Mathematics Research Conference Center; Carolyn Cho, Physiome

AWM Minisymposium on Numerical Methods and Applications of PDEs
(L to R): Kehinde O. Ladipo, Univerity of Houston/Houston Community College; Katharine F. Gurski, National Institute of Standards & Technology; Kirsten Boyd,University of Texas, Austin; Jennifer Ryan, Brown University

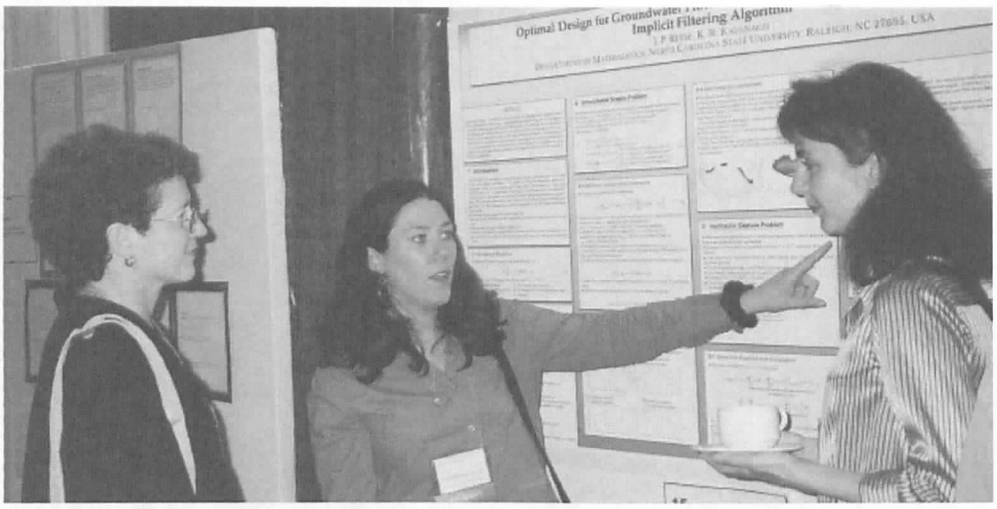
AWM Minisymposium on Applications in Biology and Fluids
(L to R): Christina M. Weaver, State University of New York at Stony Brook; Katarzyna A. Rejniak, Ohio State University; Leona Harris Clark, U.S. Environmental Protection Agency; Lyudmyla L. Barannyk, New Jersey Institute of Technology



Heather Lehr, University of Texas, Austin *(on right)* explaining her poster entitled *"Homogenization of a Darcy-Stokes System Modeling Flow in Vuggy Porous Media"*



Hoan K. Nguyen, Virginia Polytechnic Institute & State University *(center)* explaining her poster entitled *"Approximations and Sensitivities for a Class of Delay Differential Equations"*



K.R. Kavanagh, *North* Carolina State University *(center)* explaining her poster entitled *"Optmial Design for Groundwater Flow and Remediation Problems"*

L to R: Kim Burch, Montclair State University; Jyoti Champanerkar, New Jersey Institute of Technology, Urmila Malvadkar, University of California, Davis in front of Jyoti's poster entitled *"Global Hopf Bifurcations and Their Applications"*

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University of Nebraska Lincoln

Sixth Annual

Nebraska Conference for
Undergraduate Women in Mathematics

February 6 - 8, 2004

A national showcase for research projects of undergraduate women in the mathematical sciences.

Main Program
Talks by undergraduate women about their own research

Plenary Speakers
Fern Hunt,
National Institute of Standards and Technology

Nancy Kopell,
Boston University

For more information or to register, request funding or sign up to give a talk, visit us on the web at

www.math.unl.edu/~ncuwm

or write to us at

ncuwm@math.unl.edu

Department of Mathematics
University of Nebraska-Lincoln
810 Oldfather Hall
Lincoln, NE 68588-0323

Deadline for registration
January 26, 2004

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TENURED OR TENURE TRACK POSITIONS
STARTING FALL SEMESTER, 2004

The School of Mathematics may have available several tenure track Assistant Professor or tenured Associate or Full Professor positions starting fall semester, 2004. Ph.D. or equivalent terminal degree in mathematics or closely related field by the beginning date of appointment, outstanding research and teaching abilities are required. Applications at all levels are invited; preference will be given to applicants whose research interests are compatible with those of the School. Salary competitive. Consideration of applications will begin December 3, 2003 and continue until available positions are filled. Send letter of application, current curriculum vitae, at least 4 letters of recommendation, one of which should address teaching ability, and description of research to:

Lawrence F. Gray, Head, School of Mathematics
University of Minnesota, 127 Vincent Hall, 206 Church St. S.E.
Minneapolis MN 55455

See also http://www.math.umn.edu

The University of Minnesota is committed to the policy that all person shall have equal access to its programs, facilities, and employment without regard to race, color, creed, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

School of Mathematics
University of Minnesota-Minneapolis
DUNHAM JACKSON ASSISTANT PROFESSOR

This is a three-year appointment from fall semester, 2004 through spring semester, 2007 with a teaching load of 3 one-semester courses per academic year. Outstanding research and teaching abilities are required. Preference will be given to applicants whose research interests are compatible with those of the School. Applicants should have received a Ph.D. in mathematics no earlier than Jan. 1, 2003, and no later than August 25, 2004. Summer School teaching may be available during the summers of 2005 and 2006 to supplement regular stipend. Salary competitive. Consideration of applications will begin December 3, 2003 and continue until available positions are filled. Send letter of application, current curriculum vitae, minimum 4 letters of recommendation, one of which should address teaching ability, and description of research to:

Lawrence F. Gray, Head, School of Mathematics,
University of Minnesota, 127 Vincent Hall, 206 Church St. S.E.
Minneapolis MN 55455

See also http://www.math.umn.edu

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National Security Agency

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EDGE 2004:

Spelman College

ATLANTA, GA • JUNE 7 - JULY 2

Giving the EDGE to Women in Mathematics

The EDGE Summer Program Funded by the National Science Foundation and the Andrew W. Mellon Foundation, the Enhancing Diversity in Graduate Education (EDGE) Program, a post baccalaureate summer enrichment program, is designed to strengthen the ability of all women to 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 who (i) have been accepted to a graduate program in the mathematical sciences or (ii) have just completed their first year of graduate school in the mathematical sciences. All applicants should have completed standard junior--senior-level undergraduate courses in analysis and abstract algebra and have a desire to earn the doctorate degree. Women from minority groups who fit one of the above two categories are especially encouraged to apply. Final acceptance to the program is contingent upon acceptance to a graduate program in the mathematical sciences.

In 2004 the summer program will be held at Spelman College in Atlanta, Georgia during June 7-July 2, 2004 with Professor Yewande Olubummo as local coordinator. The EDGE Program is co-directed by Sylvia Bozeman (Spelman College), Rhonda Hughes (Bryn Mawr College). A stipend of $2,000 plus room & board will be awarded to participants. Applicants chosen to participate in the program will be notified by April 15, 2004.

Applications should consist of the following: (1) a completed application form; (2) a statement describing the expected value of this program to the applicant's academic goals; (3) two letters of recommendation from mathematical sciences faculty familiar with the applicant's work; (4) a transcript and current resume (5) a list of graduate programs to which the applicant has applied, together with a ranked list of her two or three top choices.

The application deadline is March 1, 2004. Applications should be sent to: EDGE Program, Department of Mathematics, Spelman College, P.O. Box 270 Atlanta, GA 30314. For more information visit the program's website at http://www.edgeforwomen.org/.

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Association for Symbolic Logic
ASL Travel Awards

Student Travel Awards: The 2004 ASL Annual Meeting, 2004 ASL European Summer Meeting, and Other ASL or ASL-Sponsored Meetings. The ASL will make available modest travel awards to graduate students in logic and (for the European Summer Meeting only) to recent Ph.D.'s so that they may attend the 2004 ASL Annual Meeting in Pittsburgh, Pennsylvania, or the 2004 ASL European Summer Meeting in Torino, Italy. Student members of the ASL also may apply for travel grants to other ASL or ASL-sponsored meetings. 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 (preferably 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, *and, in the case of an ASL student member application to attend an ASL or ASL-sponsored meeting other than the Annual Meeting or European Summer Meeting*, a paragraph indicating why it is important to attend the meeting; (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. Women and members of minority groups are strongly encouraged to apply. In addition to funds provided by the ASL, the program of travel grants to the ASL Annual Meeting and the European Summer Meeting 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 flag carrier. Application by email is encouraged; put "ASL travel application" in the subject line of your message.

For the 2004 ASL Annual Meeting applications and recommendations should be received before the deadline of March 8, 2004, by the Program Chair: Sergei Artemov, Program in Comp. Sci., CUNY Graduate Ctr., 365 Fifth Ave. #4319, New York, NY 10016, USA; email: `SArtemov@gc.cuny.edu`.

For the 2004 ASL European Summer Meeting, applications and recommendations should be received before the deadline of April 1, 2004, by the Organizing Committee: LC2004, Department of Mathematics, University of Torino, via Carlo Alberto 10, 10123 Torino, Italy; `email: lc2004@unito.it`.

For ASL student member travel grants to other ASL or ASL-sponsored meetings, applications and recommendations should be received at least three months prior to the meeting at the ASL Business Office: ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, New York 12604, USA; Fax: 1-845-437-7830; email: `asl@vassar.edu`. Decisions will be communicated least two months prior to the meeting.

2004 ASL Annual Meeting. *May 19–23, 2004, Pittsburgh, PA.*
2004 ASL European Summer Meeting *July 25–31, 2004, Torino, Italy.*

For further information about these meetings, and other ASL and ASL-sponsored meetings, visit the ASL website at `https://aslonline.org/Meetings.htm`.

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`.

University of California, Los Angeles

Faculty Position in the Department of Mathematics

The Department of Mathematics at the University of California, Los Angeles invites applications for regular faculty positions, which are to be effective as early as the 2004-05 academic year. This position and appointment is contingent upon budgetary and administrative approval.

Appointment of the tenure-track/tenured positions will be made commensurate with qualifications. These 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 positions in the areas of operator algebras, probability/math physics and applied mathematics. Minimum qualifications include a Ph.D. degree in mathematical sciences and great promise in research and teaching. Duties include mathematical research, undergraduate and graduate teaching (4.5 courses per year, with a reduced load in the first 6 quarters), and departmental and University service. Candidates applying at the Associate Professor level must have demonstrated outstanding attainment in research and teaching.

To initiate the application process or find out more about the position, please log-on to **http://www.math.ucla.edu/~search** and follow the instructions for the on-line application. Applications will be accepted until January 30, 2004. Women and minorities are encouraged to apply.

Under Federal law, the University of California can employ only individuals who are legally authorized to work in the U.S., as established by providing documents specified in the Immigration Reform and Control Act of 1986.

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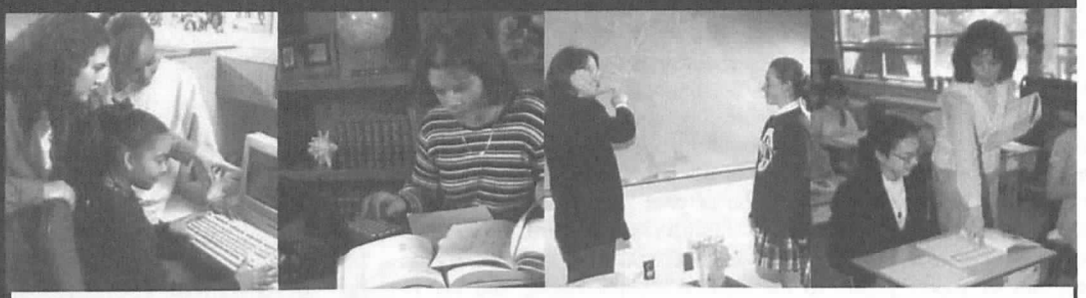

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BALL STATE UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Tenure-track Assistant Professor – Applications are invited for a tenure-track position in applied mathematics available August 20, 2004. Duties include: teaching approximately 8 to 9 hours per semester, predominantly at the undergraduate level; research in mathematics; and professional service. Salary and benefits are competitive and commensurate with qualifications. In addition, one or more temporary positions may be available, pending budgetary approval. Additional benefits for first-year faculty are negotiable. Minimum qualification: all requirements for a doctorate in mathematics completed by August 1, 2004. Preferred qualification: research interests compatible with the needs and interests of the department, especially numerical analysis, computational methods, and financial mathematics. The Department of Mathematical Sciences 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 B.A., B.S., M.A., M.S., and M.A.E. degrees in these areas. The bachelor's degrees in mathematics include options in mathematics, statistics, financial mathematics, and applied mathematics-physics. More information about the Department, its programs, and its faculty is available at www.bsu.edu/web/math/. An applicant's file is complete when all of the following have been sent 1) letter of application; 2) AMS Standard Cover Sheet available from the AMS or 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; and 6) copy of graduate transcripts showing highest degree earned to: **Giray Okten, Chair, Mathematics Search Committee, Department of Mathematical Sciences, Ball State University, Muncie, IN 47306** (Tel: 765.285.8640; Fax: 765.285.1721; E-mail: msearch@math.bsu.edu. Review of completed applications will begin December 15, 2003, and will continue until the position is filled. Applicants should also notify the search committee chair if they plan to attend the 2004 AMS/MAA Joint Meetings in Phoenix. Ball State University is an equal opportunity, affirmative action employer and is strongly and actively committed to diversity within its community.

BARUCH COLLEGE - DEPARTMENT OF MATHEMATICS – Tenure-track Assistant/Associate Professor - The department invites applications for an anticipated tenure-track Assistant/Associate Professor positions, depending upon qualifications, beginning September 2004. Required: Ph.D. in Mathematics, Applied Mathematics or related field; demonstrated commitment to research; strong undergraduate teaching skills. Research areas such as probability, numerical analysis, mathematical finance, partial differential equations, discrete mathematics, optimization, scientific computing, economic modeling, and actuarial mathematics will receive first consideration. Employment experience or interdisciplinary research in finance or economics is helpful. Baruch is one of the City University of New York's senior colleges, housing the Zicklin School of Business, the Weissman School of Arts and Sciences, and the School of Public Affairs. It has approximately 15,000 undergraduate and graduate students in its three schools. An AA/EO/IRCA/ADA employer. Send AMS cover sheet, curriculum vitae, at least three letters of reference, at most two reprints/preprints, and short statements describing approach to teaching and research plans by December 15, 2003, to **Mathematics Department Search Committee, Baruch College – CUNY, Box B6-230, One Bernard Baruch Way, New York, NY 10010.**

BROWN UNIVERSITY – DEPARTMENT OF MATHEMATICS – One professorship at the Associate Professor level with tenure, the appointment to begin July 1, 2004. [Exceptionally qualified candidates may be considered for appointment at the level of Professor.] This position is targeted in the area of **analysis,** broadly construed. Candidates should have a distinguished research record and a strong commitment to excellence in undergraduate and graduate teaching. Preference will be given to applicants with research interests consonant with those of the present members of the Department (for a list of faculty members and their fields, see http://www.math.brown.edu/faculty/faculty.html). Applicants who wish to be considered for these positions should send a letter of application along with a curriculum vitae and arrange to have at least five letters of recommendation sent to: **Senior Search Committee, Department of Mathematics, Box 1917, Brown University, Providence, Rhode Island 02912.** Applications must be postmarked by December 12, 2003, in order to receive full consideration. Later applications will be accepted and considered to the extent feasible. Email inquiries can be addressed to srsearch@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action employer and encourages applications from women and minorities.

BROWN UNIVERSITY – DEPARTMENT OF MATHEMATICS – J.D. Tamarkin Assistant Professorship – One three-year non-tenured non-renewable appointment, beginning July 1, 2004. The teaching load is one course one semester, and two courses the other semester, and it consists of courses of more than routine interest. Candidates are required to have received a Ph.D. degree or equivalent by the start of this appointment, and they may have up to three years of prior academic and/or postdoctoral research experience. 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 vitæ, an AMS Standard Cover Sheet, and three letters of recommendation must be received by December 1, 2003. All inquiries and materials should be addressed to: **Junior Search Committee, Department 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 should be addressed to juniorsearch@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA – DEPARTMENT OF MATHEMATICS - Two Tenure-track Assistant/Associate Professor Positions - Two tenure track positions, Asst. or Assoc. Prof. Level. Math Ed.: Teach math ed courses, opportunity to teach math courses, provide in-service programs for local schools, assist with development of MS in math ed, advise students pursuing teaching credentials, collaborate with others involved in math ed.. Qualifications: Doctorate in Math Ed. with master's in Math (or equivalent), or doctorate in Math with strong background in math ed. Will consider ABD's with imminent degree completion. Knowledgeable about current trends in math ed. and applications of technology in math ed. Strong preference to applicants able to supervise student teachers. Applied Math or Statistics: Teach courses at all levels in math or stats. Preference given to applicants having expertise in design of experiments, multivariate analysis, statistical consulting, time series analysis, control theory, DEs, estimation theory, math modeling, stochastic DEs. Qualifications: Ph.D. in Math or Stats or in related area, completed by 9/2004. Position dependent upon funding. Both Positions: Expected to engage in professional development and scholarly research, committee service, student advising, curriculum development. Benefits include start-up package, reduced teaching load for first year. Rank/salary commensurate with experience/qualifications. Qualifications: Evidence of, or potential for, teaching excellence, conducting scholarly activities, directing master's candidates, working with diverse student body. Review begins 1/12/2004, and continues until position is filled or closed. Submit application form indicating position, curriculum vitae, teaching philosophy statement, research statement, undergraduate and graduate transcripts, minimum of 3 recent reference letters. Package must address background and interest in all qualifications, and may be examined by all department tenure track faculty. Send to: **Faculty Search Committee, Math Dept., Cal Poly Pomona, 3801 W. Temple Ave., Pomona, CA 91768-4007; 909-869-4008**; Fax: 909-869-4904; math@csupomona.edu. Visit http://www.csupomona.edu/~math/position. AA/EEO.

NEW ADDRESS: Please inform us of any changes, so we can keep our database up-to-date. Mail changes using the **form on the BACK COVER** or drop us an **email, awm@math.umd.edu.** Thanks.

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CALIFORNIA STATE UNIVERSITY, HAYWARD - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Faculty Positions in Mathematics – (Position #04-05 MCS-GENERAL/APPLIED-TT) http://www.mcs.csuhayward.edu . The Department invites applications for a tenure-track appointment in mathematics. The position, effective Fall 2004, is at the Assistant Professor rank. Applicants must have a Ph.D. in mathematics or applied mathematics by September, 2004. Preference may be given to applicants who can teach courses in applied mathematics. The candidate will be expected to teach a variety of mathematics courses, ranging from service courses to graduate-level courses, with classes meeting both day and evening. Candidates must exhibit the potential for excellent teaching and research and for leadership in curriculum development. Other responsibilities include service to the University, the profession, and the community. For full details about these positions and about our programs visit http://www.mcs.csuhayward.edu. e-mail inquiries: mathsearch@mcs.csuhayward.edu. Send resume and arrange to have three letters of reference sent to **Department of Math/CS California State University, Hayward, CA 94542-3092.** Refer to position #04-05 MCS-GENERAL/APPLIED-TT. Review of applications will begin December 15, 2003. CSUH, situated in the hills overlooking the San Francisco Bay, is an EOE, committed to its mission of "educational excellence for a diverse society".

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant/Associate Professor Level - The Department of Mathematics invites applications for a tenure-track appointment at the assistant or associate professor level effective Fall 2004. The candidate must hold a Ph.D. in the mathematical sciences and have experience with projects involving K-12 education or a Ph.D. in mathematics education with a master's degree in mathematics at the time of the appointment. In addition, the candidate must have familiarity with K-12 mathematics education, either as a pre-college teacher, or as a leader in programs designed to prepare K-12 teachers. The candidate must have a strong commitment to excellence in teaching both at the undergraduate and graduate level; in particular we are seeking candidates with experience in teaching pre-service teachers. Research experience or potential for research and publication is expected. A significant part of the appointee's service will involve the preparation of K-12 teachers. This will include, but is not limited to, the following: (1) student advisement, especially for math majors preparing to become secondary teachers, prospective elementary school teachers, and students in the teacher credential program; (2) teaching and coordinating courses specially designed for pre-service teachers, as well as participation in ongoing improvements in the design and assessment of those courses; (3) creation and maintenance of partnerships with colleagues in the College of Education, the Liberal Studies Program and mathematics teachers at local high schools. For more details regarding the responsibilities of the position please see the full ad on our web site http://www.csun.edu/math Applicants should send a vita, the AMS standard cover sheet and three letters of recommendation, one of them addressing the candidate's teaching abilities, to the **Hiring Committee, Department of Mathematics, CSUN, Northridge, CA 91330-8313** by January 5, 2004. Email (inquiries only) math.hiring1@csun.edu . California State University is an Equal Opportunity, Title IX, sections 503 and 504 employer.

CARNEGIE MELLON UNIVERSITY - CENTER FOR COMPUTATIONAL FINANCE – Post Doctoral Fellowship - The Center for Computational Finance expects to appoint a post-doctoral fellow in mathematical finance, beginning in September 2004. This position will be funded by Morgan Stanley and the National Science Foundation, and is contingent upon approval of the National Science Foundation funding. Applicants should have a strong record of accomplishment in probability research and a serious interest in the applications of probability to finance. This will be a two-year appointment with no teaching duties. The recipient will be expected to make short visits to Morgan Stanley during the academic year, and Morgan Stanley is expected to offer an internship in the summer between the academic years. 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. For full consideration, applications should be received by January 12, 2004. All communications should be addressed to: **Computational Finance Post-doctoral Committee, Department of Mathematical Sciences, Carnegie Mellon University, Pittsburgh, PA 15213.** Carnegie Mellon University is an Affirmative Action/Equal Opportunity Employer.

CASE WESTERN RESERVE UNIVERSITY – DEPARTMENT OF MATHEMATICS – One or more visiting Faculty positions - Contingent on funding and staffing needs, the Department of Mathematics of Case Western Reserve University anticipates one or more visiting faculty, instructor, or lecturer positions for 2004-05. Desired: PhD in mathematics. Submit: letter of application (including e-mail and fax), AMS cover sheet, vitae, and have three letters of evaluation sent. Mail to: **Chair, Department of Mathematics, CWRU, Cleveland, OH 44106-7058**. No e-mail or fax applications. Screening begins February 1; applications will be accepted until positions are filled. CWRU is an Equal Opportunity/Affirmative Action Employer. Women and minorities are strongly encouraged to apply.

COLGATE UNIVERSITY – DEPARTMENT OF MATHEMATICS – The Neil R. Grabois Chair in Mathematics – Colgate University announces the establishment of the Neil R. Grabois Chair in Mathematics. The chair will be filled at either the Associate or Full Professor level. We are looking for someone with broad interests in the mathematical sciences, an established research reputation, and a record of excellence in teaching at the undergraduate level. The successful candidate will join a department with a strong commitment to meeting the diverse needs of its students and will have the opportunity to help enrich the program in the mathematical sciences. Candidates should submit a letter of application, a full curriculum vitae with a list of publications and three letters of reference to **Professor Thomas Tucker, Chair, Department of Mathematics, Colgate University, 13 Oak Drive, Hamilton, NY 13346.** Review of applications will begin December 1. Colgate University is an Equal Opportunity/Affirmative Action Employer. Developing and sustaining a diverse faculty and staff further the university's educational mission. Nominations are also accepted and should be directed to Professor Tucker. For further information about the Mathematics Department and Colgate University, see www.colgate.edu/math.

CORNELL UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Cornell University Department of Mathematics invites applications for the following positions beginning July 1, 2004:(1) Tenure-track Assistant Professor (or higher rank with administrative approval). Nov 1, 2003 deadline; (2) Four H.C. Wang Assistant Professors, non-renewable, 3-year term, Dec 1, 2003 deadline; (3) Three VIGRE Postdoctoral Associates (contingent upon funding), non-renewable, 3-year term, Dec 1, 2003 deadline; Beginning August 16, 2004: (4) Visiting positions, academic year or one semester teaching positions (any rank), Dec 1, 2003 deadline. For information about our positions and application instructions, see: **http://www.math.cornell.edu/Positions/facpositions.html.** Cornell University is an Affirmative Action/Equal Opportunity Employer.

CORNELL UNIVERSITY – DEPARTMENT OF MATHEMATICS – Senior Lecturer - The Cornell University Department of Mathematics seeks applications for the position of Sr. Lecturer; full-time; 5-year renewable term appt.; 7/1/2004 - 6/30/2009. This individual would be Coordinator of the Mathematics Department Outreach and K-12 Education Program. We expect this individual to initiate and run activities that bring together mathematics department faculty, Cornell students, and the mathematics education and local K-12 education communities. The individual should have qualifications and expertise to supervise student teachers and to teach mathematics education and undergraduate mathematics courses. Applicants should submit a letter of application, three letters of reference and a curriculum vita to **Kenneth S. Brown, Chair, Department of Mathematics, 320A Malott Hall, Cornell University, Ithaca, NY 14853-4201**. For more information see http://www.math.cornell.edu/Positions/positions.html. Deadline January 31, 2004. We hope to make a decision in March. Cornell University is an Affirmative Action/Equal Opportunity Employer.

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DARTMOUTH COLLEGE – DEPARTMENT OF MATHEMATICS - Tenure-track Assistant Professorship with initial appointment in the 2004-2005 academic year, in Applied Mathematics. Candidates need have practical experience in statistical techniques and methods and desire to take charge of statistics curriculum. Projects are currently funded by NSF, DoD, and NIH. Collaborations with the department of computer science, medical and engineering schools, and program in cognitive neuroscience exist. Collaborations and/or appointments in Dartmouth's M.D./Ph.D. program, as well as Dartmouth's Institute for Secure Technologies Studies, are also possible. In exceptional circumstances, an appointment to a higher level may be possible. Teaching duties consist of two courses per quarter for two ten-week quarters or one course for each of two quarters and two courses for one quarter. Get a copy of the application information and the required response form online at http://www.math.dartmouth.edu/recruiting/, or send letter of application, curriculum vita, and brief statement of research results and interests. Four letters of recommendation should be sent, at least one of which specifically addresses teaching and, if your native language is not English, on your ability to use English in a classroom, to **Donna Black, Recruiting Secretary, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, NH 03755-3551.** Applications received by January 5, 2004 considered first. Women and minorities are particularly 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. $44,676.00 for nine months; $9,928.00 summer research stipend. Get all information and required response form at http://www.math.dartmouth.edu/recruiting/. Or, send letter of application, curriculum vitae, graduate school transcript, thesis abstract, statement of research plans and interests, and at least three, preferably four, letters of recommendation to **Donna Black, Department of Mathematics, Dartmouth College, 6188 Bradley Hall, Hanover, New Hampshire 0375-3551.** Files complete by January 5, 2004 considered first. Dartmouth College is committed to diversity and strongly encourages applications from women and minorities.

EMORY UNIVERSITY – DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - The Department of Mathematics and Computer Science, Emory University, invites applications for an anticipated tenure track Assistant Professorship or a tenured appointment at the rank of Associate Professor or Professor, effective 2004-2005. Applicants must have a research program in topology and hold a PhD in Mathematics. We are especially interested in applicants whose research interests complement those of current faculty in topology, algebra and analysis. The department offers several undergraduate programs within Emory College, a PhD in Mathematics and an MS in Computer Science in the Graduate School; 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: **Chair, Screening Committee, Department of Mathematics and Computer Science, Emory University, Atlanta GA 30322.** Screening of applications will begin on 1 January 2004. Informal inquiries are welcome; please see our web page at www.mathcs.emory.edu/News/Ops for further details. Emory University is an Affirmative Action/Equal Opportunity Employer.

FAIRFIELD UNIVERSITY - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Tenure-track Assistant Professor - The Department of Mathematics and Computer Science at Fairfield University invites applications for a tenure-track assistant professorship in mathematics to begin in September, 2004. A doctorate in mathematics is required. Strong evidence of research potential, demonstrated success in classroom instruction and a solid commitment to teaching are essential. Fairfield University, the Jesuit University of Southern New England, is a comprehensive university with about 3000 undergraduates and a strong emphasis on liberal arts education. Fairfield's Department of Mathematics & Computer Science consists of 14 full-time faculty members. The teaching load is three courses/nine credits per semester. Fairfield offers a very competitive benefits package. The picturesque campus is located on Long Island Sound in southwestern Connecticut about 50 miles from New York City. Fairfield is an Affirmative Action/Equal Opportunity Employer. For further details see http://cs.fairfield.edu/mathhire. Applicants should send a letter of application, a curriculum vitae, and three letters of recommendation, which comment on the applicant's experience and promise as a teacher and scholar to **Chris Bernhardt, Chair of the Department of Mathematics and Computer Science, Fairfield University, Fairfield, CT 06824**. Full consideration will be given to complete applications received by January 15, 2004. Fairfield University is an Affirmative Action/Equal Opportunity Employer. Visit our website at www.fairfield.edu

GEORGETOWN UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department has one tenure-track position at the Assistant Professor level beginning August 25, 2004. The Ph.D. degree in mathematics is required with strong research credentials in analysis, applied mathematics, or mathematical statistics, and interests commensurate with those of the department. The Department is committed to excellence in both research and undergraduate teaching, and is looking toward reestablishment of a graduate program with a concentration in applied mathematics and statistics. An application should include: a completed AMS standard cover sheet, a curriculum vitae, reprints or preprints of no more than three research papers, evidence of effective undergraduate teaching, and at least three letters of recommendation. Send to: **Professor Hans Engler, Chairman of the Hiring Committee, Department of Mathematics, Georgetown University, Washington, DC 20057-1233.** Consideration of complete applications will begin December 1, 2003, and will continue until available positions are filled. Georgetown University is an Equal Employment Opportunity and Affirmative Action institution in employment and admissions.

GETTYSBURG COLLEGE – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant Professor Position - Gettysburg College invites applications for one (and perhaps two) tenure-track, assistant professor positions in mathematics beginning August 2004; in exceptional cases, applicants at the associate level may also be considered. Applicants must have a Ph.D. in mathematics, applied mathematics, or statistics or expect to complete all requirements for this degree by September 2004. Promise of excellence in teaching and commitment to a vigorous research program are essential. A successful candidate will have the opportunity to teach a broad range of undergraduate mathematics courses and to involve undergraduate students in mathematical activity outside the classroom. Gettysburg College is a highly selective liberal arts college located within 90 minutes of the Baltimore/Washington metropolitan area. Established in 1832, the College has a rich history and is situated on a 220-acre campus with an enrollment of 2,500 students. Gettysburg College celebrates diversity and invites applications from members of any group that has been historically underrepresented in the American academy. The College assures equal employment opportunity and prohibits discrimination on the basis of race, color, national origin, gender, religion, sexual orientation, age, and disability. 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 15, 2003, will receive full consideration.

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GRAND VALLEY STATE UNIVERSITY – DEPARTMENT OF MATHEMATICS - Assistant/Associate Professor - Grand Valley State University, in Allendale, Michigan, is accepting applications for the position of Assistant or Associate Professor in Mathematics, with employment to begin in August 2004. Required qualifications include a Ph.D. in Mathematics; demonstrated excellence in teaching undergraduate mathematics; a commitment to continued scholarly and professional growth; strong teaching recommendations; a willingness to have students use technological tools to promote understanding; and evidence of critical, reflective thinking about the teaching and learning of mathematics at the undergraduate level. All candidates must be interested in teaching courses throughout the curriculum, including precalculus mathematics. For more information, including responsibilities of the position, and important details on how to apply, see our position description at **www.gvsu.edu/math/jobs.html**. Review of applications will begin by December 5, 2003. We are also accepting applications for positions in Mathematics Education. See our web site for more information.

INDIANA UNIVERSITY, BLOOMINGTON - DEPARTMENT OF MATHEMATICS – Zorn Research Postdoctoral Fellows - The Department of Mathematics invites applications for Zorn Research Postdoctoral Fellows beginning in the Fall of 2004. These are three-year, non-tenure track positions with reduced teaching loads. Outstanding candidates with a recent Ph.D. in any area of pure or applied mathematics or statistics are encouraged to apply. Zorn postdocs are paired with mentors with whom they have compatible research interests. The Department maintains strong research groups in all principal fields of mathematics, and the Bloomington campus offers an exceptionally attractive environment, providing a rich variety of musical and cultural attractions. Interested applicants should send a letter of application, vita, and research and teaching statements, and should arrange to have four letters of recommendation, including one letter evaluating teaching experience, sent to: **Search Committee, Department of Mathematics, Indiana University, 831 East 3rd Street, Rawles Hall, Bloomington, IN 47405-7106.** Indiana University is an equal opportunity / affirmative action employer. Applications received by December 15, 2003 will be given full consideration.

INDIANA UNIVERSITY, BLOOMINGTON - DEPARTMENT OF MATHEMATICS - The Department of Mathematics invites applications for two tenure-track or higher-level positions beginning in the Fall of 2004. Outstanding candidates with a Ph.D. in any area of pure or applied mathematics or statistics and with postdoctoral or faculty-level experience are encouraged to apply. The Department maintains strong research groups in all principle fields of mathematics, and the Bloomington campus offers an exceptionally attractive environment, providing a rich variety of musical and cultural attractions. Interested applicants should send a letter of application, vita, and research and teaching statements, and should arrange to have four letters of recommendation, including one letter evaluating teaching experience, sent to: **Search Committee, Department of Mathematics, Indiana University, 831 East 3rd Street, Rawles Hall, Bloomington, IN 47405-7106.** Indiana University is an equal opportunity/affirmative action employer. Preference will be given to applications received by December 1, 2003.

INSTITUTE FOR ADVANCED STUDY - SCHOOL OF MATHEMATICS - IAS membership and Veblen Research Instructorship - The School of Mathematics at IAS has a limited number of memberships, some with financial support for research in mathematics and computer science at the Institute during the 2004-05 academic year. Candidates must have given evidence of ability in research comparable at least with that expected for the Ph.D. degree. During the 2004-05 year the School will host a program on the Bloch-Kato conjecture relating Milnor's K-Theory and the Etale Cohomology. The School of Mathematics and the Department of Mathematics at Princeton University have established the Veblen Research Instructorship, and three-year instructorships will be offered each year to candidates who have received their Ph.D. within the last 3 years. The first and third year of the instructorship will be spent at Princeton University and will carry regular teaching responsibilities. The second year will be spent at the Institute and dedicated to independent research of the instructor's choice. Application materials for both the IAS MEMBERSHIPS and the VEBLEN RESEARCH INSTRUCTORSHIP positions may be requested from **Applications, School of Mathematics, Institute for Advanced Study, Einstein Drive, Princeton, NJ 08540, 609-734-8112**, e-mail: **Applications @math.ias.edu**. Information about the special program can be found on the School's homepage and application forms may be downloaded but not submitted via a web connection to: http://www.math.ias.edu. Both deadlines are December 1.

KANSAS STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS – Tenure-track positions - Subject to budgetary approval, applications are invited for tenure-track positions commencing August 15, 2004; rank and salary commensurate with qualifications. The Department seeks candidates whose research interests mesh well with current faculty. The Department has research groups in the areas of analysis, algebra, geometry/topology, and differential equations. Applicants must have strong research credentials as well as strong accomplishment or promise in teaching. Letter of application, current vita, description of research, and at least three letters of reference evaluating research should be sent to: **Louis Pigno, Department of Mathematics, Cardwell Hall 138, Kansas State University, Manhattan, KS 66506**. The Department also requires that the candidate arrange for letters to be submitted evaluating teaching accomplishments and potential. Offers may begin by December 1, 2003, but applications for positions will be reviewed until February 1, 2004, or until positions are closed. AA/EOE

LOYOLA MARYMOUNT UNIVERSITY – DEPARTMENT OF MATHEMATICS - The Mathematics Department of Loyola Marymount University will have at least one tenure-track opening at the assistant professor level for the academic year 2004-2005. Responsibilities include teaching, advising, maintaining an active program of scholarship, and engaging in university service. Applicants are expected to have a Ph.D. in mathematics or a related field by Fall 2004. Individuals working in any area of mathematics including mathematics education will be considered; in addition, those with demonstrable interest in the preparation of elementary or high school mathematics teachers are urged to apply. The University and the Mathematics Department have a strong commitment to nurturing a culturally diverse faculty and student body. Women and persons of color are encouraged to apply. Loyola Marymount University is a comprehensive Catholic university whose focus is excellence in undergraduate education. The Mathematics Department, housed within the University's College of Science and Engineering, is a community of seventeen full-time faculty members and approximately 45 mathematics majors and 25 minors. The faculty of the department work in many areas of mathematics in an atmosphere of mutual respect and collegiality. The teaching load at Loyola Marymount is typically 3 courses (9 hours/week) each semester. Additional information about the LMU Mathematics Department is available online at cse.lmu.edu/mathematics/. LMU offers faculty housing assistance. Salaries and other benefits are competitive and commensurate with background and experience. Loyola Marymount University is a community of 8,000 students, faculty, and staff in the colleges of Liberal Arts, Business Administration, Science and Engineering, Communication and Fine Arts, the School of Film and Television, the School of Education, and the Law School. Because of its mission based on the Jesuit and Marymount traditions in Catholic higher education the University invites candidates who desire to be part of a tolerant community that welcomes cultural, ethnic, and spiritual diversity. A complete application consists of an AMS cover sheet, letter of interest, *curriculum vitae*, statement on teaching philosophy, a description of the applicant's current scholarship program, and three letters of recommendation at least one of which addresses the applicant's teaching. **Loyola Marymount University is an Equal Opportunity, Affirmative Action Employer**. We will begin screening applications on December 3, 2003. Applicants who will be attending the Joint Mathematics Meetings in January, 2004 should indicate this in their cover letter. Please send applications materials to Professor Michael Grady, Chair, Hiring Committee, Mathematics Department, Loyola Marymount University, One LMU Drive, Suite 2700, Los Angeles, CA 90045-2659.

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS – Lecturer/Assistant Professor - The Department of Mathematics may make appointments, at the level of lecturer and assistant professor or higher, in pure mathematics for the year 2004-2005. The teaching load will be nine hours for the academic year (eight hours for assistant professor appointments). These positions are open to mathematicians with doctorates who show definite promise in research. Applications should be complete by January 5. Applicants should arrange to have sent (a) vita; (b) three letters of reference; (c) a description of their 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.** MIT is an Equal Opportunity, Affirmative Action Employer. (For more information about the position or institution: http://www-math.mit.edu.)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS - C.L.E. Moore Instructorships In Mathematics - These positions are open to mathematicians with doctorates who show definite promise in research. The teaching load will be nine hours for the academic year. Applications should be complete by January 5. Applicants should arrange to have sent (a) a vita; (b) three letters of reference; (c) a description of the research in their thesis; and (d) a research plan for the next year to: **Pure Mathematics Committee, Massachusetts Institute of Technology, Room 2-263, Cambridge, MA 02139-4307**. M.I.T. is an Equal Opportunity, Affirmative Action Employer. (For more information about the position or institution: http://www-math.mit.edu.)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY - DEPARTMENT OF MATHEMATICS - Applied Mathematics Instructor/Assistant Professor - The applied mathematics group at MIT is seeking to fill possible positions at the level of Instructor, Assistant Professor, or higher, beginning September 2004. Appointments will be made based on demonstrated outstanding research qualifications. Candidates in all areas of applied mathematics, including physical applied mathematics, computational molecular biology, numerical analysis and scientific computation, will be considered. Current activities of the group include: combinatorics, operations research, theory of algorithms, numerical analysis, astrophysics, condensed matter physics, computational physics, fluid dynamics, geophysics, nonlinear waves, theoretical and computational molecular biology, quantum computing and quantum field theory, but new hiring may involve other areas. Please send curriculum vitae, research description, along with three letters of recommendation by January 5, 2004, to: **Committee on Applied Mathematics, Room 2-345, Department of Mathematics, M.I.T., 77 Massachusetts Ave., Cambridge, MA 02139-4307.** M.I.T. is an Equal Opportunity, Affirmative Action Employer. (For more information about the position and institution: http://www-math.mit.edu.)

MEREDITH COLLEGE – DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE – Assistant/Associate Professor - Meredith College seeks candidates for Assistant or Associate Professor in the Department of Mathematics and Computer Science to begin Aug. 2004 subject to budget approval. Applicants must have a doctorate with at least eighteen graduate hours in statistics. Send resume, teaching philosophy, and three letters of support by 12/1/03 to: **Dr. Charles Davis, Head, Department of Mathematics and Computer Science, Meredith College, 3800 Hillsborough Street, Raleigh, NC 27607-5298**. Complete job description at www.meredith.edu. Meredith College is an Equal Opportunity Employer and encourages minority applicants.

MICHIGAN STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS – Tenure track position - Description: Pending budgetary approval, the Department will have a tenure track position to begin Fall 2004. It is expected that successful applicants will be appointed at the rank of Assistant Professor, but truly outstanding candidates for appointment at higher ranks will be considered. Excellence is essential in both research and teaching, and it is expected that the successful candidate will have at least two years of experience beyond the Ph.D. While outstanding applicants from all mathematical research areas will be considered, preference will be given to those with significant research accomplishments in at least one of the following areas: Algebraic Geometry, Geometric Analysis, and PDE's. Application information: An applicant should send a vita as well as a brief statement of research interests, and arrange for at least four letters of recommendation to be sent, one of which must specifically address the applicants's ability to teach. Application via email is strongly encouraged. To receive an electronic application and information, send an email to: **jobs@math.msu.edu** with the message "send application-info". Application materials can also be addressed to **The Hiring Committee, Department of Mathematics, Michigan State University, East Lansing, MI 48824-1027**. Completed applications (including letters of recommendation) received by November 17, 2003 are assured of consideration, but applications will be considered until the positions are filled. Women and minorities are strongly encouraged to apply. MSU is an Affirmative Action/Equal Opportunity Institution. Handicappers have the right to request and receive reasonable accommodation.

MICHIGAN STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS – Mathematical Biology Tenure track position - Description: Pending budgetary approval, the Department will have tenure track positions to begin Fall 2004 for candidates with a history of outstanding research in Mathematical Biology. Rank and Salary will be determined by the qualifications of the successful candidates but it is anticipated that one position will be at the rank of Full Professor. A successful candidate should have a history of substantial collaboration with biological or medical sciences. An excellent teaching record is required. A joint appointment with another unit might be arranged for the applicant for whom such a situation might be suitable and desirable. Application information: An applicant should send a vita as well as a brief statement of research interests, and arrange for at least four letters of recommendation to be sent, one of which must specifically address the applicants's ability to teach. Application via email is strongly encouraged. To receive an electronic application and information, send an email to: **jobs@math.msu.edu** with the message "send application-info". Application materials can also be addressed to **The Hiring Committee, Department of Mathematics, Michigan State University, East Lansing, MI 48824-1027**. Completed applications (including letters of recommendation) received by November 17, 2003 are assured of consideration, but applications will be considered until the positions are filled. Women and minorities are strongly encouraged to apply. MSU is an Affirmative Action/Equal Opportunity Institution. Handicappers have the right to request and receive reasonable accommodation.

MICHIGAN STATE UNIVERSITY - DEPARTMENT OF STATISTICS AND PROBABILITY – The Department of Statistics and Probability at Michigan State University invites applications for a tenure track Assistant Professor position to start August 16, 2004. Candidates should have a Ph.D. with a concentration in statistics and/or probability and strong research and teaching potential. Moreover candidates should have research interests in applications of these fields to interdisciplinary research in the biological sciences. Please supply a curriculum vitae, a summary of scholarly interests, and evidence of teaching experience, as well as having three letters of recommendation sent directly to: **Search Committee, Department of Statistics and Probability, A415 Wells Hall, Michigan State University, East Lansing, MI 48824-1027.** The selection process will begin December 1, 2003 and continue until the position is filled. MSU is an Affirmative Action/Equal Opportunity Institution. Persons with disabilities have the right to request and receive reasonable accommodation. Minorities and women are strongly encouraged to apply. For additional information about the MSU Department of Statistics and Probability please visit: www.stt.msu.edu.

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MICHIGAN TECHNOLOGICAL UNIVERSITY - DEPARTMENT OF MATHEMATICAL SCIENCES - Tenure-track Assistant Professor – Subject to budget approval, applications are invited for one, possibly two tenure-track positions in the Department of Mathematical Sciences in the area of Combinatorics. We expect to make the appointments at the Assistant Professor level, but outstanding applicants at the senior level will be considered. We are interested in hiring mathematicians that can interact with our active research faculty in Combinatorics and contribute to our undergraduate program and our expanding Ph.D. program. Candidates should have completed their Ph.D. degree by the beginning of the 2003/2004 academic year and must demonstrate evidence of excellence in teaching and outstanding accomplishment in teaching and research. Review process begins December 15, 2003. Send vitae and 3 letters of reference to: **Combinatorics 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/Affirmative Action Employer.

MILLERSVILLE UNIVERSITY – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant Professor - Full-time, tenure-track assistant professorship to begin August 2004. Area of expertise in MATHEMATICS EDUCATION. The department, consisting of 20 faculty members and approximately 180 undergraduate majors, offers B.A. and B.S. degrees in mathematics and B.S.Ed. and M.Ed. degrees in mathematics education. Duties include an annual 24-hour teaching load, including mathematics courses for pre-service elementary and secondary teachers and a variety of undergraduate mathematics service courses, scholarly activity, student advisement, curriculum development in mathematics education at both the undergraduate and graduate levels and committee work. Doctorate (or completion by second year of reappointment) in mathematics education or in mathematics with a specialization in mathematics education is required, including at least 30 hours of graduate level courses in pure or applied mathematics. Must exhibit evidence of strong commitment to excellence in teaching and continued scholarly activity, and have familiarity with current directions in mathematics education, including technology. Must complete a successful interview and teaching demonstration. Evidence of teaching effectiveness is a primary consideration. Preference will be given to candidates with experience teaching both K-12 and college-level mathematics. Candidates must be able to work effectively with professional groups and community groups. Salary/benefits are competitive. Completed application must be received by January 20, 2004 to assure full consideration. E-mail applications will not be accepted. Send application letter, vita, copies of undergraduate and graduate transcripts and three letters of reference (at least two of which attest to recent teaching effectiveness) to **Dr. Dorothee Blum, Search Committee/WM1203, Department of Mathematics, Millersville University of Pennsylvania, P.O. Box 1002, Millersville, PA 17551-0302**. An Equal Opportunity/Affirmative Action Institution.

MUHLENBERG COLLEGE - DEPARTMENT OF MATHEMATICAL SCIENCES –Visiting Assistant Professor - The Muhlenberg College Department of Mathematical Sciences announces a full-time, two-year, visiting position at the assistant professor level beginning in August, 2004. Duties will be teaching undergraduate courses from among elementary statistics, mathematics for the liberal arts, and calculus. The load is three courses per semester. Candidates must hold the doctorate in mathematics or statistics and have excellent teaching credentials. Applicants should submit (1) a resume, (2) a statement detailing college teaching experience, and (3) three letters of recommendation. Application materials should be mailed to: **Dr. George Benjamin, Mathematics Search Chair, Department of Mathematical Sciences, Muhlenberg College, Allentown, PA 18104**. Consideration of files begins upon receipt of all three items noted above. Representatives from the department will interview selected candidates at the Joint Mathematics Meetings in Phoenix in January, 2004. Muhlenberg College is a highly selective residential liberal arts college with a strong commitment to excellence in undergraduate education and student-faculty research collaboration. Muhlenberg's beautiful, suburban campus is located in Allentown, Pennsylvania's third largest city, approximately 55 miles north of Philadelphia and 90 miles west of New York City. To learn more about Muhlenberg, visit the College web site at www.muhlenberg.edu. Muhlenberg College is an Equal Opportunity Employer.

THE OHIO STATE UNIVERSITY – THE MATHEMATICAL BIOSCIENCES INSTITUTE - The Mathematical Biosciences Institute (MBI) at The Ohio State University is accepting applications for postdoctorate positions beginning in September, 2004, and renewable for up to 3 years. Some of these positions are co-sponsored by industry or academic bioscience labs. The deadline for applications is January 16, 2004. Short- and long-term visitors may apply at any time. To access the application form or for more information, visit the MBI website at **http://mbi.osu.edu** or call (614) 292-3648.

THE OHIO STATE UNIVERSITY - DEPARTMENT OF MATHEMATICS - The Department of Mathematics at The Ohio State University expects to have openings at both the junior and senior level in the area of mathematical and computational biology. Applicants should have a PhD in mathematics or a related area, such as biomathematics, and should show outstanding promise and/or accomplishments in both research and teaching. The successful candidate will be expected to teach courses in the mathematics department and actively participate in the newly formed Mathematical Biosciences Institute. Applicants for the junior position should also arrange to have at least three letters of recommendation sent to the address below. Further information on the department and the MBI can be found at http://www.math.ohio-state.edu and http://mbi.osu.edu. Please send a CV and a description of research to: **Mathematical Biosciences Search, Department of Mathematics, The Ohio State University, 231 W. 18th Avenue, Columbus, OH 43210.** Applications are considered on a continuing basis but the review process begins November 17, 2003. Please direct inquiries to facultysearch@math.ohio-state.edu. The Ohio State University is an Equal Opportunity, Affirmative Action employer. Women, minority, veterans, and individuals with disabilities are encouraged to apply.

THE OHIO STATE UNIVERSITY – DEPARTMENT OF MATHEMATICS – The Department of Matheamtics of The Ohio State University expects to have **tenure-track/tenured positions** and **several visiting positions available**, effective Autumn Quarter 2004. Candidates in all areas of pure and applied mathematics are invited to apply. A Ph.D. in mathematics, significant mathematical research accomplishment, and evidence of excellent teaching ability are required. The department will also have several Hans J. Zassenhaus Assistant Professorships and VIGRE Arnold Ross Assistant Professorships available. These term positions are renewable annually for up to a total of three years. Candidates are expected to have a Ph.D. in mathematics and to present evidence of excellence in research and teaching. Please send a CV and have at least three letters of recommendation sent to: **Advisory Committee, Department of Mathematics, The Ohio State University, 231 W. 18th Avenue, Columbus, OH 43210.** Applications are considered on a continuing basis but the review process begins November 17, 2003. Please direct inquiries to facultysearch@math.ohio-state.edu. The Ohio State University is an Equal Opportunity, Affirmative Action employer. Women, minority, veterans, and individuals with disabilities are encouraged to apply.

AWM GIFT MEMBERSHIPS: Give a gift membership to a friend, student or colleague! Just fill out the membership form on **PAGE 46** with the pertinent information and indicate that it is a gift membership.

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REED COLLEGE –DEPARTMENT OF MATHEMATICS– Tenure-track Assistant Professorship and Visiting position - The Reed College Mathematics Department invites applications for two positions: a tenure-track assistant professorship, and a one-year visiting position, both to begin in Fall, 2004. Reed is a distinguished liberal arts college with 1200 students that offers a demanding academic program to bright and dedicated undergraduates. Applicants should be committed to excellence in teaching and have an active interest in mathematics at all levels. An applicant is expected to have a Ph.D. in mathematics or statistics by the start of the 2004-2005 academic year. Faculty members teach five semester courses per year (usually two course preparations per semester) and supervise senior theses (required of all students). Further information about the positions can be found at the URL: http://www.reed.edu/mathsearch. Applicants should submit a curriculum vita and a statement of teaching and research interests, and arrange to have three letters of recommendation sent to: **David Perkinson, Chair, Mathematics Search Committee, Mathematics Department, Reed College, 3203 S.E. Woodstock Blvd., Portland, Oregon 97202-8199.** Applications will be accepted until the position is filled, but they should be received by February 1, 2004, to guarantee full consideration. EOE.

RICE UNIVERSITY – DEPARTMENT OF MATHEMATICS – Applications are invited for a tenure-track position in the Department of Mathematics at the rank of assistant professor. Candidates should have extremely strong research potential and very good teaching skills. Send a curriculum vitae to: **Appointments Committee, Department of Mathematics, Rice University, P. O. Box 1892, Houston, TX 77251-1892.** In addition, please solicit at least 3 letters of reference and ask that they be sent directly to the address above. Submission of the AMS Application Cover Sheet would be greatly appreciated. Applications which are complete by December 1, 2003 will be assured full consideration. Rice University is an Equal Opportunity/Affirmative Action Employer and strongly encourages applications from women and members of underrepresented minority groups.

TEXAS TECH UNIVERSITY – DEPARTMENT OF MATHEMATICS AND STATISTICS - Applications are invited for up to three tenure-track assistant professor positions beginning fall 2004. Higher level appointments are possible in exceptional cases. For one position, priority will be given to candidates in the areas of applied mathematics and computation with research interests that complement existing departmental research areas. For the other positions, all areas will be considered. Candidates whose mathematics or statistics background and scholarly activities have, or have shown, excellent potential for interdisciplinary collaboration are encouraged to apply. Strong promise or accomplishment in teaching and scholarly activity and a Ph.D. degree at the time of appointment are required. Texas Tech University is committed to diversity among its faculty. Please send a resume, a completed AMS standard cover sheet and have three letters of recommendation sent to: **Professor Wayne Lewis, Hiring Committee Chair, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042.** Review of applications will begin immediately. Further information is available at http://www.math.ttu.edu/~wlewis/hiring.html. Texas Tech is an AA/EO employer.

TOWSON UNIVERSITY – DEPARTMENT OF MATHEMATICS - Entry-Level Tenure-Track Assistant Professor Position in Mathematics Education - Applicants are invited to apply for an entry-level, tenure-track position in Mathematics Education at the rank of Assistant Professor beginning in the 2004 Fall Semester. The salary is commensurate with credentials and experience. Applicants must have an earned doctorate in mathematics education or mathematics, with experience in K-12 education. Applicants must possess a commitment to teaching, a plan for an active research program, and the ability to teach a variety of courses, some of which require the use of technology. Preference will be given to applicants with experience in middle school mathematics. The Mathematics Department http://www.towson.edu/math/) offers Bachelor's Degree programs in pure mathematics, applied mathematics with computing, actuarial science, and mathematics education and Master's Degree programs in applied and industrial mathematics, and mathematics education (at both the high school and middle school levels). Founded in 1866, Towson University, which is situated on 328 acres, is located in the suburban community of Towson, Maryland, just north of Baltimore and 45 miles from Washington, D.C. As the Baltimore area's largest university and Maryland's largest comprehensive university, Towson University plays a vital role in the educational, economic, and cultural life of both the Baltimore region and the State of Maryland. Towson University is recognized regionally and nationally for high quality programs in the liberal arts and sciences, fine arts and performing arts, and in the applied professional fields of business, education, and health. Over 500 distinguished full-time faculty members, holding the highest degree of academic preparation in their fields, teach a student body of nearly 17,000. Towson University continues to expand its degree programs at the undergraduate, graduate, and doctoral levels. Applicants should submit a letter of application, a resume, a description of research, a statement of teaching experience and philosophy, and a copy of both the undergraduate and graduate transcripts. They should arrange to have three letters of recommendation, addressing both teaching and research sent to: **Dr. Lawrence Shirley, Chair, Mathematics Education Search Committee, Mathematics Department, Towson University, 8000 York Road, Towson, MD 21252-0001.**

TUFTS UNIVERSITY – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant Professorship - Applications are invited for a tenure-track Assistant Professorship to begin September 1, 2004. Applicants must show promise of outstanding research in the area of algebraic groups and related algebraic and geometric structures as well as excellent teaching. The teaching load will be two courses per semester. Applicants should send a curriculum vitae and have three letters of recommendation sent to **Richard Weiss, Search Committee Chair, Department of Mathematics, Tufts University, Medford, MA 02155**. Review of applications will begin January 26, 2004 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 – Assistant Professorship - Applications are invited for an Assistant Professorship to begin September 1, 2004. Initial one year contract, renewable to a maximum of three years. Ph. D., promise of strong research in the field of algebraic geometry and evidence of strong teaching ability required. Preference will be given to candidates likely to interact with current department members. The teaching load will be two courses per semester. Applicants should send a curriculum vitae and have three letters of recommendation sent to **Loring Tu, Search Committee Chair, Department of Mathematics, Tufts University, Medford, MA 02155**. Review of applications will begin January 26, 2004 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.

UNIVERSITY OF ALASKA, ANCHORAGE – DEPARTMENT OF MATHEMATICAL SCIENCE – Tenure-track Assistant Professor - Tenure-track Assistant Professor of Applied Statistics position available August 15, 2004. Ph.D. in statistics or Ph.D. in mathematics with strong emphasis in applied statistics preferred. Ph.D. in closely related field with strong emphasis in statistics considered. Duties include teaching, service and scholarly/creative activity in an ethnically and culturally diverse campus community. Review begins January 12, 2004. For application process see **www.finsys.uaa.alaska.edu/uaahrs** or contact **afhmd@uaa.alaska.edu**

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UNIVERSITY OF CALIFORNIA, DAVIS – DEPARTMENT OF MATHEMATICS – Regular and Visiting Faculty Positions in Mathematics - The Department of Mathematics at the University of California, Davis is soliciting applications for three tenure-track/tenured positions and two Visiting Research Assistant Professor positions starting July 1, 2004. For the tenure-track/tenured positions, appointments at the Assistant Professor level are preferred, but unusually well-qualified candidates may be considered for an Associate Professorship. The Department's focus research areas are: Applied Mathematics including Mathematical Biology; Geometry and Topology; Numerical Analysis and Scientific Computation; Analysis and Partial Differential Equations; Mathematical Physics; and Discrete Mathematics. Priority will be given to making appointments in Mathematical Biology, Analysis and Partial Differential Equations, and Mathematical Physics. However, exceptional candidates in any of the Department's focus research areas will be considered. Minimum qualifications for the position include a Ph.D. degree, or its equivalent, in the Mathematical Sciences and great promise in research and teaching. Duties include mathematical research, undergraduate and graduate teaching (four quarter-courses per year), and departmental and university service. Candidates for an Associate Professorship must have demonstrated outstanding attainment in research and teaching. For the Visiting Research Assistant Professor (VRAP) positions, the Department is interested in applicants with excellent research potential in any of the focus research areas listed above and excellent teaching skills. VRAP applicants are required to have completed their Ph.D. by the time of their appointment, but no earlier than July 1, 2000. The positions are renewable for up to a total of three years, assuming satisfactory performance in research and teaching. Additional information on the Department may be found at http://math.ucdavis.edu/. Applications will be accepted until the positions are filled. To receive full consideration, the application should be received by December 1, 2003. To initiate an application please either: a) submit an electronic version of the AMS Cover Sheet, together with any supporting documents, from the MathJobs.org web site at **http://www.mathjobs.org/** ; or b) write to the **Chair of Search Committee, Department of Mathematics, University of California, One Shields Avenue, Davis, CA 95616-8633**. The University of California, Davis, is an affirmative action/equal opportunity employer.

UNIVERSITY OF CALIFORNIA, RIVERSIDE - DEPARTMENT OF MATHEMATICS – Faculty Positions in Algebra, Analysis, Combinatorics, Topology (Tenure-track) - Applications and nominations are invited for three tenure-track faculty positions Assistant/Associate Professorships) beginning July 1, 2004 from the following areas: (1) Algebra (e.g., Algebraic Geometry, Commutative Algebra, Lie Algebra, etc.) (2) Analysis (e.g., Differential Equations, Nonlinear Analysis, Probability Theory, Harmonic Analysis, Complex Analysis, Functional Analysis, Operator Algebra, Mathematical Analysis, Applied Analysis, etc.) (3) Combinatorics (4) Topology (e.g., Algebraic, Differential, Geometric, Symplectic, and Low Dimensional Topology, etc.) A doctorate in Mathematics is required. Tenure track applicants are expected to have demonstrated outstanding teaching and research, normally including major contributions beyond the doctoral dissertation. Responsibilities of these positions include teaching undergraduate and graduate level courses and seminars, conducting scholarly research, and participating in departmental and university service activities. Established criteria of the University of California will determine salary and level of appointment. To assure full consideration, applicants should send their curriculum vitae, including a list of publications, and have a minimum of three letters of recommendation sent to the address given below, which must be received by Thursday, January 15, 2004. All letters of recommendation are governed by University regulations and laws concerning confidentiality (see Academic Personnel Manual 160--www.ucop.edu/acadadv/acadpers/apm/apm-160.pdf). **2003/04 Faculty Search Committee, Department of Mathematics, University of California, Riverside, Riverside, CA 92521-0135.** Applicants are encouraged to use the AMS standardized application form and to indicate their subject area using the AMS subject classification numbers. The University of California, Riverside is an Affirmative Action/Equal Opportunity 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 - DEPARTMENTS OF STATISTICS AND APPLIED PROBABILITY AND MATHEMATICS – Open level position in Stochastic Analysis (particularly Mathematical Finance) joint between the two departments, starting July 1, 2004. Research, teaching excellence, PhD in Statistics/Mathematics. Submit resume, research and teaching objectives, AMS Cover Sheet (www.ams.org), and four reference letters (at least one teaching related). Submit materials via www.mathjobs.org OR send to: **Search Committee, Statistics and Applied Probability, University of California, Santa Barbara, CA 93106-3110.** Selection begins December 20, 2003 until filled. Candidates who can contribute to the diversity and excellence of the academic community through research, teaching and service are particularly encouraged to apply. EOE.

UNIVERSITY OF CALIFORNIA, SANTA BARBARA - DEPARTMENT OF MATHEMATICS AND DEPARTMENT OF PHYSICS – Tenure-track Assistant Professor position - The Departments of Mathematics and Physics invite applications for a Tenure-Track Assistant Professor position, joint between the two departments. The starting date is July 1, 2004. The position is in the general area of Geometry and Theoretical Physics. Qualifications are research and teaching excellence and Ph.D. in Mathematics, Physics or relevant field. To apply, submit resume, statement of research, statement of teaching philosophy and the American Mathematical Society cover sheet (available online at http://www.ams.org), and arrange for four letters of reference to be sent (at least one of which is directed towards teaching if possible). Materials should either be submitted electronically via http://www.mathjobs.org or sent directly to: **Search Committee, Mathematics-Physics position, Department of Mathematics, University of California, Santa Barbara, CA 93106-3080 USA. The selection process will begin December 20, 2003 and continue until the position is filled**. The department is especially interested in candidates who can contribute to the diversity and excellence of the academic community through research, teaching and service.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ - DEPARTMENT OF MATHEMATICS - Tenure-track Assistant Professor position - One tenure track position for Assistant Professor in the area of Analysis. The position will begin Fall 2004. The teaching load is four one-quarter courses per year. Appointees will be expected to teach, pursue their research and perform some department and university service. Minimum qualifications: Ph.D. or equivalent by 6/30/04 in Mathematics or Physics; demonstrated achievements or potential for excellence in research, teaching, and professional service. The campus is especially interested in candidates who can contribute to the diversity and excellence of the academic community through their research, teaching and/or service. Salary: $46,300 - 51,700 (step and salary commensurate with experience). Deadline: Application materials and letters of reference must be received by January 5, 2004. Applicants should send a Curriculum Vitae, a summary of research and teaching experience and four letters of recommendation with at least one letter addressing teaching experience and ability (all letters will be treated as confidential documents). Please direct your letter writers to the UCSC Confidentiality Statement at http://www2.ucsc.edu/ahr/policies/confstm.htm. All applications should be sent to: **Recruitment Committee, Mathematics Department, University of California, 1156 High Street, Santa Cruz, CA 95064**. Please refer to provision #517-04 in your reply. Inquiries [not applications] can be sent to mathrcr@ucsc.edu. UCSC is an EEO/AA employer. See http://www.math.ucsc.edu/Jobs/Current.html for complete job description.

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UNIVERSITY OF DAYTON – DEPARTMENT OF MATHEMATICS - Applications are invited for a tenure track position in the Department of Mathematics at the assistant professor level starting in August 2004. Candidates must have a Ph.D. in mathematics, financial mathematics, statistics, or some related field. Preference will be given to applicants with experience in stochastic or computational methods in financial mathematics. Applicants must have a strong commitment to research, and the potential to become an effective teacher. Responsibilities include teaching, mentoring, and curriculum development in support of a newly developed MS program in Financial Mathematics. Further responsibilities include teaching in a strong undergraduate major in mathematics, research, and service. The selection process begins December 15, 2003. To receive full consideration, all materials must be received by January 14, 2004. A complete application consists of a resume, three letters of recommendation, a statement of research and professional plans, and a statement of teaching philosophy. Both teaching abilities and research abilities should be addressed in the letters of recommendation. Please include an e-mail address in your correspondence. Send applications to: **Dr. Joe Mashburn, Chair of the Mathematics Search Committee, Department of Mathematics, University of Dayton, Dayton, OH 45469-2316.** Contact the search committee at joe.mashburn@udayton.edu. To obtain further information, see 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 6000 undergraduate and 3000 graduate students. The Department of Mathematics offers the B.A. and B.S. degrees in mathematics, the B.S degree in applied mathematical economics, 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 – John G. Thompson Research Assistant Professorship - Applications are invited for the John G. Thompson Research Assistant Professorship for an appointment beginning in Fall 2004 with salary of $52,000 for the academic year 2004-05. It is expected that the position will be renewed for two additional years. There is a summer research supplement of $5,000 following each academic year's appointment, and a reduced teaching load of one course per semester during each academic year. Eligibility: Mathematics Ph.Ds who have received degrees in the year 2001 or later. Outstanding candidates in all areas of mathematics are encouraged to apply. Candidates must send vita and list of publications to: **Chair of Post-doc Search Committee, Department of Mathematics, University of Florida, Gainesville, FL 32611-8105** by January 5, 2004 and arrange for three letters of recommendation to be sent directly to the above address. The department welcomes applications from women and minority candidates. The University of Florida is an EEO/AA institution. For more information about the position or institution: http://www.math.ufl.edu

UNIVERSITY OF FLORIDA - DEPARTMENT OF MATHEMATICS – Tenure-track Assistant Professor position - Applications are invited for a tenure-track position at the assistant professor level in: Applied Mathematics - emphasis given to Biomathematics. Appointment begins in Fall 2004. Salary will be competitive. Applicants must show strong research promise and excel in teaching as well. Applicants must forward curriculum vitae and list of publications to: **Chair of Search Committee, Department of Mathematics, University of Florida, Gainesville, FL 32611-8105** by January 5, 2004. Applicants must arrange for three letters of recommendation to be sent directly to the above address. The department welcomes applications from women and minority candidates. The University of Florida is an EEO/AA institution. For more information about the position or institution: http://www.math.ufl.edu

UNIVERSITY OF GEORGIA – DEPARTMENT OF MATHEMATICS – The Department of Mathematics invites applications for SIX Postdoctoral Associate positions that will be available beginning fall 2004, and ONE Franklin Fellowship (a teaching postdoctoral position) beginning Spring 2004; four of the above six Postdoctoral positions are VIGRE Postdoctoral Associates and are contingent on extension of the departments VIGRE grant. Please visit www.math.uga.edu for detailed descriptions of these positions. Applicants should have a Ph.D. in pure or applied mathematics and exhibit an outstanding research potential in mathematics with a commitment to excellence in teaching. They should arrange to have three letters of reference concerning research and one letter concerning teaching sent directly to the address below. The application should include a completed AMS Standard Cover Sheet, a curriculum vita, a statement about their current and future research plans, and a statement about teaching experiences and philosophy. Submit the application to **The Chair, Search Committee, Department of Mathematics, University of Georgia, Athens, Georgia 30602.** Emails can be directed to search@math.uga.edu. To assure full consideration, applications must be received by Jan. 9, 2004. For the Franklin Fellowship, the deadline is November 7, 2003. 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 underrepresented groups.

UNIVERSITY OF MICHIGAN - DEPARTMENT OF MATHEMATICS - Pending authorization, the Department anticipates having one or more openings at the tenure-track or tenure level. Candidates should hold a Ph.D. in mathematics or a related field, and should show outstanding promise and/or accomplishments in both research and teaching. Applications are encouraged from any area of pure, applied, computational, or interdisciplinary mathematics, including mathematics education, mathematical biology, theoretical computer science, scientific computation, and actuarial or financial mathematics. Salaries are competitive and are 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, Ann Arbor MI 48109-1109.** Applications are considered on a continuing basis but candidates are urged to apply by November 1, 2003. Inquiries may be made by e-mail to: math-fac-search@umich.edu. More detailed information regarding the Department may be found on our web page: www.math.lsa.umich.edu. The University is responsive to the needs of dual career couples. Women and minority candidates are encouraged to apply. The University of Michigan is an equal opportunity, affirmative action employer.

UNIVERSITY OF NORTH CAROLINA, CHARLOTTE – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant Professhorship in Statistics or Biostatistics – Tenure-track Assistant Professorship beginning August 2004. Ph.D. in Statistics or Biostatistics, demonstrated strength at research, strong commitment to teaching. Preference to candidates experienced in applied areas such as biostatistics or econometrics. Deadline January 15. Submit complete resume, description of research interests, statement of teaching and arrange three letters of references: **Stat Search Committee, Department of Mathematics, University of North Carolina Charlotte, Charlotte, NC 28223.** http://www.math.uncc.edu. AA/EOE: Women and underrepresented minorities are urged to apply.

UNIVERSITY OF NORTH CAROLINA, CHARLOTTE – DEPARTMENT OF MATHEMATICS – Tenure-track Assistant professor position - Tenure-track Position, University of North Carolina Charlotte in the Department of Mathematics at the assistant professor level starting in August 2004. Candidates must have a Ph.D. in an area related to Quantitative finance such as mathematics, financial mathematics, or statistics. Applicants must have a strong record in research, and potential to become an effective teacher. Responsibilities include teaching and mentoring, in support of a newly developed MS program in Financial Mathematics and in the undergraduate programs. Experience in Actuarial Mathematics would be an asset. To receive full consideration, all materials must be received by February 15, 2004. A complete application consists of a resume, three letters of recommendation, a statement of research and professional plans, and a statement of teaching philosophy. Both teaching abilities and research abilities should be addressed in the letters of recommendation. Please include an e-mail address in your correspondence. Send applications to: **Dr. Robert Anderson, Search Committee, Department of Mathematics, University of North Carolina Charlotte, Charlotte, NC 28223** See http://www.math.uncc.edu/employment. AA/EOE: Women and underrepresented minorities are urged to apply.

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THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO – DEPARTMENT OF MATHEMATICAL SCIENCES – Tenure-track assistant professorship - Applications are invited for one tenure-track assistant professorship to start in Fall 2004. Preference will be given to applicants in mathematical analysis. Applicants must have the Ph.D. in mathematics by August 2004. Duties include teaching, research, and university service. The department offers bachelor's and master's degrees in mathematics and computer science. The application should include an AMS cover sheet, curriculum vitae, statement on current research and on teaching, and three letters of recommendation, including one letter addressing the candidate's teaching abilities. Send to: **Chair, Mathematics Search Committee, Department of Mathematical Sciences, University of North Carolina at Greensboro, Greensboro, NC 27402**. Applications received by January 15,2004, will receive full consideration. http://www.uncg.edu.mat/jobs.html. EEO/AA. We are unable to process email applications.

UNIVERSITY OF NOTRE DAME - DEPARTMENT OF MATHEMATICS – Instructor position - The Department of Mathematics of the University of Notre Dame invites applications from recent doctorates for the position of Notre Dame Instructor in Mathematics. Candidates in any specialty compatible with the research interests of the department will be considered. The teaching load and salary will be competitive with those of distinguished instructorships at other AMS Group I universities. This position is for a term of three years, is non-renewable and non-tenure track. Applications, including a curriculum vitae, a letter of application, and a completed AMS standard cover sheet, should be sent to: **Steven A. Buechler, Chair, Deaprtment 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 communicate articulately and teach effectively. Notre Dame is an equal opportunity employer. Women and minorities are urged to apply. The evaluation of candidates will begin December 1, 2003. Information about the department is available at http://www.math.nd.edu/math

UNIVERSITY OF NOTRE DAME - DEPARTMENT OF MATHEMATICS - Regular Position in Algebra - The Department of Mathematics of the University of Notre Dame invites applications for a position in algebra with a particular emphasis in number theory, representation theory and arithmetic geometry, to start on August 24, 2004. Candidates at any rank will be considered. 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 communicate articulately and teach effectively. Notre Dame is an equal opportunity employer. Women and minorities are urged to apply. The evaluation of candidates will begin December 1, 2004. Information about the department is available at http://www.math.nd.edu/math .

THE UNIVERSITY OF OKLAHOMA - DEPARTMENT OF MATHEMATICS – Tenure-track positions - Applications are invited for one or more full-time, tenure-track position(s) in mathematics beginning 16 August 2004. The position(s) 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, The University of Oklahoma, 601 Elm, PHSC 423, Norman, OK 73019-0315** Phone: 405-325-6711, FAX: 405-325-7484, E-mail: search@math.ou.edu. Screening of applications will begin on December 15, 2003 and will continue until the position(s) is filled. **The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer. Women and Minorities are Encouraged to Apply.**

UNIVERSITY OF OREGON - DEPARTMENT OF MATHEMATICS – Applications are invited for tenure-track Assistant or Associate Professor positions in all areas of pure and applied mathematics, statistics and mathematics education. Qualifications are a Ph.D. in the mathematical sciences, an excellent record of research accomplishment, and evidence of teaching ability. See http://darkwing.uoregon.edu/~math/employment.html. Competitive salary with excellent fringe benefits. Mail complete vita and at least three letters of recommendation to **Search Committee, 1222 Department of Mathematics, University of Oregon, Eugene, OR 97403-1222**. Application materials may NOT be submitted electronically. Closing date is January 5, 2004. Women and minorities are encouraged to apply. The University of Oregon is an EO/AA/ADA Institution committed to diversity.

UNIVERSITY OF RICHMOND – DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE – The Department of Mathematics and Computer Science at this highly selective, private, primarily undergraduate university invites applications for a tenure-track assistant professor position in mathematics. Teaching excellence across a wide range of courses offered by the Department and a strong program of scholarship with the potential to actively engage undergraduates are required. Applicants should submit a curriculum vitae, completed AMS Standard Cover Sheet, separate statements of (1) teaching philosophy and experience and (2) research interests and plans, and should have three letters of reference sent to: **Math Hiring Committee, Department of Mathematics and Computer Science, University of Richmond, VA 23173.** Applications will be reviewed beginning November 15, 2003, and will be accepted until the position is filled. Preliminary interviews will be conducted at the Joint Mathematics Meetings in Phoenix in January 2004; therefore, early applications will be regarded favorably. Ph.D. must be completed by August 2004 start date. The University of Richmond is committed to increasing the diversity of our faculty and strongly encourages applications from women and minorities. For more information on the department and the University, see http://mathcs.richmond.edu.

UNIVERSITY OF SAN DIEGO – DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE – Tenure-track Assistant professorship - USD, an independent Catholic University, seeks applicants for a tenure-track Assistant Professor of Mathematics position in the Department of Mathematics and Computer Science to begin September, 2004. Candidates must have a Ph.D. in mathematics or applied mathematics, or computer science with a very strong mahtematics background. 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 12, 2004.

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THE UNIVERSITY OF TEXAS AT AUSTIN - DEPARTMENT OF MATHEMATICS – R.H. Bing Faculty fellowship, VIGRE fellowship, Tenure/Tenure-track positions - Expected openings for Fall 2004 include: (a) Instructorships, some that have R.H. Bing Faculty Fellowships attached to them and others that are VIGRE Instructorships, and (b) four positions at the tenure-track/tenure level. (a) Instructorships at The University of Texas at Austin are postdoctoral appointments, renewable for two additional years. It is assumed that applicants for Instructorships will have completed all Ph.D. requirements by August 25, 2005. Other factors being equal, preference will be given to those whose doctorates were conferred in 2003 or 2004. 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 $40,000 for the nine-month academic year. Each R.H. Bing Fellow holds an Instructorship in the Mathematics Department, with a teaching load of two courses in one semester and one course in the other. The combined Instructorship-Fellowship stipend for nine-months is $44,000, 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 postdoctoral level, so a separate application for such a position is unnecessary. VIGRE Instructorships are partially funded by an NSF VIGRE Grant awarded to the department (in partnership with the Texas Institute for Computational and Applied Mathematics). The combined Instructorship-VIGRE Postdoctoral Fellowship carries a nine-month stipend of $40,000, with an annual allocation of $2500 to cover equipment, supplies, and travel. The position also includes summer support in the amount of $6500 for the first two summers of the appointment. The teaching load for VIGRE Instructors is one course per semester. Only citizens, nationals and permanent residents of the U.S. are eligible for VIGRE Instructor appointments. Furthermore, a VIGRE Instructor must have received the Ph.D. within eighteen months of the date the appointment becomes effective. All eligible applicants for postdoctoral positions in either the Mathematics Department or TICAM will automatically be considered for a VIGRE Instructorship. 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, Texas 78712 c/o Instructor Committee**. Transmission of the preceding items via e-mail (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 tenure-track/tenure positions are asked to send a vita and a brief research summary to the above address, c/o Recruting Committee. Transmission of the preceding items via e-mail (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, 2003. The University of Texas at Austin is an equal opportunity employer.

UNIVERSITY OF VIRGINIA - DEPARTMENT OF MATHEMATICS - Tenure-track position – The Department of Mathematics invites applications for one or more tenure-track or tenured positions for the fall semester of 2004. Applicants must present evidence of outstanding accomplishments and/or promise in both research and teaching. Appointments will mainly be at the Assistant or beginning Associate Professor level, but exceptional candidates at all levels will be considered, though special attention will be given to fields which fit well with the strengths and interests of its current faculty (see the department's homepage at http://www.math.virginia.edu). Applications from women and minorities are especially welcome. To apply, please send a letter of application, a curriculum vita, and at least four letters of recommendation to: **Hiring Committee, Department of Mathematics, University of Virginia, Kerchof Hall, P. O. Box 400137, Charlottesville, VA 22904-4137.** Applications may be submitted at any time, but the review process will begin in October 2003. In addition to a written application, candidates are required to complete the electronic information form located on the Department's homepage (http://www.math.virginia.edu). Click on Faculty Hiring 2004, and follow instructions. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF WATERLOO – DEPARTMENT OF COMBINATORICS AND OPTIMIZATION – Tenure-track positions and research chair - The Faculty of Mathematics <http://www.math.uwaterloo.ca> and the Institute for Quantum Computing <http://www.iqc.ca> at the University of Waterloo invite applications for one or more tenure-track faculty positions in the area of quantum computation. While the intention is to make appointments at the rank of Assistant Professor, applications for more senior positions will be considered. In addition to a tenure track appointment, the candidate will hold a research chair with substantial teaching reduction and an additional stipend for a period of 5 years, with the possibility of renewal. A Ph.D. and significant evidence of excellence in research and the potential for effective teaching are required. Responsibilities will include the supervision of graduate students, as well as some teaching at the undergraduate and graduate levels. Salary will depend on the candidate's qualifications. Effective date of appointment: July 1, 2004. Applicants may also apply for a formal affiliation with the Perimeter Institute for Theoretical Physics <http://www.perimeterinstitute.ca>. These appointments are subject to the availability of funds. All qualified candidates are encouraged to apply; however Canadian and permanent residents will be given priority. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, native peoples, and persons with disabilities. Interested individuals should send curriculum vitae, up to 5 selected reprints/preprints and the names of three references to: **Prof. Paul Schellenberg, Chair, Quantum Computation Appointments Committee, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1**. e-mail: combopt@math.uwaterloo.ca, phone: (519) 888-4567 x3482, fax: (519) 725-5441, http://www.math.uwaterloo.ca, http://www.iqc.ca, Closing date for receipt of applications is December 15, 2003.

UNIVERSITY OF WATERLOO - DEPARTMENT OF APPLIED MATHEMATICS - Tenure Track Position in Computational Mathematics - The Department of Applied Mathematics, University of Waterloo, invites applications for a tenure-track faculty position in the field of scientific computing and computational mathematics, to begin on or after July 1, 2004. The position is at the Assistant Professor level and salary will be commensurate with experience and research record (in exceptional cases, an appointment at a higher level may be possible). Applicants should have as their primary interest the development and analysis of algorithms for the effective computer solution of fundamental problems in science and engineering. We are particularly interested in applicants whose area of application is in biomechanics, control theory, mathematical imaging, mathematical biology or stochastic processes, although exceptionally qualified applicants in other areas may also be considered. Candidates should show evidence of outstanding potential in research and should have a strong mathematical background. We are looking for applicants with enthusiasm for the supervision of graduate students and for teaching at both the undergraduate and graduate level. Applicants should send a curriculum vitae (including a statement of research interests and teaching philosophy) and the names and addresses of at least three referees to **J. Wainwright, Chairman, Department of Applied Mathematics, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.** The deadline for receiving applications is December 1, 2003. Applications received after this date will be considered only if the position has not been filled. The above position is being advertised, in conjunction with similar ones across the Faculty of Mathematics, as part of a major expansion in the area of scientific computing and computational mathematics. This expansion will include the creation of a Centre for Computational Mathematics in Industry & Commerce, which will oversee the recently introduced program in Computational Mathematics at the undergraduate level, and a significant growth in graduate studies in the area. The Department of Applied Mathematics, together with the Departments of Combinatorics & Optimization, Pure Mathematics, Statistics & Actuarial Science and the School of Computer [→]

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[←] Science, form the Faculty of Mathematics, which is a major centre for research in the mathematical sciences. There are also close collaborations with the Faculties of Engineering and Science in the University and with the nearby Perimeter Institute of Theoretical Physics. Further information about the Department may be obtained from our webpage at www.math.uwaterloo.ca/AM_Dept/index.shtml. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, native peoples, and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority. This appointment is subject to the availability of funds.

UNIVERSITY OF WATERLOO - DEPARTMENT OF APPLIED MATHEMATICS - Tenure Track Position in Mathematical Physics - Applications are invited for a tenure-track faculty position in the Department of Applied Mathematics at the University of Waterloo, in the field of Mathematical Physics, to begin on or after July 1, 2004. The position is at the Assistant Professor level and salary will be commensurate with experience and research record (in exceptional cases, an appointment at a higher level may be possible). We are particularly interested in applicants in the areas of quantum theory (preferably, but not limited to, quantum information theory) or statistical physics. Candidates should show evidence of outstanding potential in research and should have a strong background in both mathematics and physics. We are looking for applicants with enthusiasm for the supervision of graduate students and for teaching at both the undergraduate and graduate level. Waterloo is developing into a very active and large centre for research in Mathematical Physics. In particular, the successful applicant may be considered for an Associate Membership at the independent Perimeter Institute for Theoretical Physics (www.perimeterinstitute.ca). The successful applicant may also become a member of the Institute for Quantum Computation at the University of Waterloo. Applicants should send a curriculum vitae (including a statement of research interests and teaching philosophy) and the names and addresses of at least three referees to **J. Wainwright, Chairman, Department of Applied Mathematics, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1. The** deadline for receiving applications is January 15, 2004. Applications received after this date will be considered only if the position has not been filled. The Department of Applied Mathematics is part of the Faculty of Mathematics, which is a major centre for research in the mathematical sciences. The Faculty also includes the Department of Pure Mathematics, the Department of Combinatorics and Optimization, the Department of Statistics and Actuarial Science, as well as the School of Computer Science. We maintain close ties with the Faculties of Science and Engineering regarding both research and teaching, and we offer a joint undergraduate program in Mathematical Physics with the Department of Physics. Further information about the Department may be obtained from our webpage at www.math.uwaterloo.ca/AM_Dept/index.shtml. The University of Waterloo encourages applications from all qualified individuals, including women, members of visible minorities, native peoples, and persons with disabilities. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority. This appointment is subject to the availability of funds.

UNIVERSITY OF WISCONSIN, RIVER FALLS – DEPARTMENT OF MATHEMATICS - Applications are invited for a tenure-track position in mathematics beginning Fall 20042005. Earned doctorate in mathematics or a related discipline, such as statistics, required by time of appointment. Applicant must provide evidence of excellence in teaching at the undergraduate level. Teaching duties regularly include one or more upper division courses. A strong commitment to teaching undergraduates at the freshmen/sophomore level is required as well. A normal teaching load is 12 credits per semester. The department expects a willingness to work with students in undergraduate research, as well as collaboration in research and in curriculum development with faculty from within and outside of the department. In addition to teaching and scholarly activity, this position entails campus-wide and departmental service, along with academic advising. Applications should be addressed to **Don Leake, Department of Mathematics, UW-River Falls, River Falls, WI 54022.** Email inquiries should be addressed to Don Leake at don.leake@uwrf.edu. Submit a letter of interest, specifying 1) qualifications, and 2) statement of experience, including ability to contribute to the enhancement of student awareness and appreciation of diverse cultures. Include vitae, complete transcripts (official transcripts required for appointment), and three recent letters of recommendation, including one addressing teaching effectiveness. Also include the names, addresses, and telephone numbers of at least three references who can specifically comment upon your teaching ability, experience, and professional preparation. Review of applications will begin on January 20, 2004 and continue until position is filled. The names of all nominees and applicants who have not requested confidentiality in writing, and the identities of all finalists, must be released upon request. UW-River Falls is an EO/AA employer.

UNITED STATES NAVAL ACADEMY – DEPARTMENT OF MATHEMATICS – Tenure-track position - The USNA Mathematics Department anticipates at least one tenure-track position (subject to approval and funding) at the Assistant Professor or Associate Professor level, depending on qualifications, to start in August 2004. See web site http://www.usna.edu/MathDept/website/Hire.htm for full information. Tel: 410-293-6701; Fax: 410-293-4883; Email: amg@usna.edu. The United States Naval Academy is an Affirmative Action/Equal Employment Opportunity Employer and provides reasonable accommodations to applicants with disabilities.

URSINUS COLLEGE – DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE – Tenure-track Assistant professorship - Ursinus College invites applications for a tenure-track Assistant Professor of Computer Science in the Department of Mathematics and Computer Science starting Fall 2004 at highly selective, independent, co-educational, residential liberal arts college of 1450 students located about 25 miles from center city Philadelphia. A Ph.D. in computer science or a closely related field by August, 2004 is preferred; ABD will be considered. There is no restriction on specialty. Requirements include a strong commitment to undergraduate teaching and to establishing a continuing program of scholarly research involving students. Teach three courses per semester, including computer science at all undergraduate levels. Responsibilities also include teaching in the interdisciplinary liberal studies seminar for first-year students. Opportunity to teach an occasional course in mathematics or statistics. College funds available to support faculty scholarship. The laptop program provides all students and faculty with new laptops and current software every two years. Visit the Ursinus homepage at <http://www.ursinus.edu/> . Ursinus College is an equal opportunity employer (AA/EOE). In keeping with the College's historic commitment to equality, women and minorities are encouraged to apply. Send letter of application, resume, transcripts (undergraduate and graduate), and three letters of recommendation (one of which addresses teaching) to **Computer Science Search Committee Chair, Department of Mathematics and Computer Science, Ursinus College, P.O. Box 1000, Collegeville, PA 19426**. Review of applications will begin November 1, 2003 and continue until the position is filled.

WASHINGTON UNIVERSITY IN ST. LOUIS – DEPARTMENT OF MATHEMATICS – Williams Chauvenet Lecturer - Opening for a William Chauvenet Lecturer in Mathematics. This is a two-year, non tenure-track faculty position. Starting date: Fall of 2004. Teaching load: four 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 the **Chair, Department of Mathematics, Washington University, Campus Box 1146, St. Louis, MO 63130**. At least one of these letters should report on the candidate's teaching abilities. We will begin reviewing applications on December 1, 2003 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 institution: http://www.wustl.edu.

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WASHINGTON UNIVERSITY IN ST. LOUIS – DEPARTMENT OF MATHEMATICS – Tenure-track position - Opening for a tenure-track faculty position in Statistics. We are particularly interested in a candidate with both strong research and strong teaching credentials. We wish to build our existing statistics program. Current faculty interests include population genetics, sampling theory, survival analysis, environmental science, and finance. We have ongoing research collaborations with the Schools of Medicine, Engineering, Business, and Social Work. Starting date: Fall, 2004. Teaching load: four semester courses per year. Please have four letters of recommendations sent to **Chairman, Department of Mathematics, Campus Box 1146, Washington University, St. Louis, Missouri 63130**. At least one of these letters should report in detail on the candidate's teaching abilities. We will begin reviewing applications on November 30, 2003 and will continue until the position is filled. Washington University is an affirmative action/equal opportunity employer and specifically invites women and minorities to apply. Employment eligibility verification required on hire. Candidate must have completed the Ph.D. degree. http://www.math.wustl.edu.

WESTERN ILLINOIS UNIVERSITY – DEPARTMENT OF MATHEMATICS – Two Tenure Track Positions, Assistant Professor, August 2004. Positions are in Applied/Numerical/Computational Mathematics. Applicants with interest in an ongoing development of a financial mathematics program are encouraged 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, 2003; continues until positions are filled. Preliminary interviews at the Phoenix Joint Meeting. Send letter, vita, teaching philosophy, research description, three reference letters, and transcripts (photocopies) to: **Iraj Kalantari, Chair, Mathematics Department, Western Illinois University, Macomb, IL 61455-1390.** URL: http://www.wiu.edu/mathematics/ Western Illinois University is an Affirmative Action/Equal Opportunity employer and has a strong institutional commitment to diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including minorities, women, and persons with disabilities. WIU has a non-discrimination policy that includes sex, race, color, sexual orientation, religion, age, marital status, national origin, disability, or veteran status.

WESTMINSTER COLLEGE - DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE - Tenure-Track Position - Successful candidates must possess a Ph.D. for appointment at rank of assistant professor, be committed to excellence in teaching in an undergraduate liberal arts environment, and engage in continuing scholarly activity. Teaching load for this position is six courses. We will interview at the Phoenix meetings. Westminster College is 50 miles northwest of Pittsburgh and 80 miles southeast of Cleveland. For more information, see www.westminster.edu. Send applications to **Warren Hickman, Department of Mathematics and Computer Science, Westminster College, New Wilmington, PA 16172**. hickmanw@westminster.edu. EOE

WILLIAMS COLLEGE – DEPARTMENT OF MATHEMATICS AND STATISTICS – Tenure-track position - The Williams College Department of Mathematics and Statistics invites applications for one tenure track position in statistics, beginning fall 2004, at the rank of assistant professor (in an exceptional case, a more advanced appointment may be considered). We are seeking a highly qualified candidate who has demonstrated excellence in teaching and research, and who will have a Ph.D. by the time of appointment. Williams College is a private, residential, highly selective liberal arts college with an undergraduate enrollment of approximately 2,000 students. The teaching load is two courses per 12-week semester and a winter term course every other January. In addition to excellence in teaching, an active and successful research program is expected. To apply, please send a vita and have three letters of recommendation on teaching and research sent to the **Hiring Committee, Department of Mathematics and Statistics, Williams College, Williamstown, MA 01267**. Teaching and research statements are also welcome. Evaluations of applications will begin on or after November 24 and will continue until the position is filled. Williams College is dedicated to providing a welcoming intellectual environment for all of its faculty, staff and students; as an EEO/AA employer, Williams especially encourages applications from women and minorities. For more information on the Department of Mathematics and Statistics, visit http://www.williams.edu/Mathematics.

YALE UNIVERSITY - DEPARTMENT OF MATHEMATICS - Josiah Willard Gibbs Instructorships/Assistant Professorships - Offered to men and women with the doctorate who show definite promise in research in pure mathematics. Applications from women and members of minority groups are welcome. Appointments are for two/three years. The teaching load is kept light to allow ample time for research. This will consist of 3 one-semester courses. Part of the teaching duties over the term of the appointment may consist of a one-semester course at the graduate level in the general area of the instructor's research. Grant Amount: The 2004-2005 salary will be at least $52,800. Deadline: January 1, 2004. Application information: Inquiries and applications can be obtained at the following website http://www.math.yale.edu. Inquiries and application supporting documents should be sent to the **Gibbs Committee, Department of Mathematics, Yale University via e-mail: gibbs.committee@math.yale.edu.** Yale University is an Affirmative Action/Equal Opportunity Employer.

YORK UNIVERSITY – DEPARTMENT OF MATHEMATICS AND STATISTICS – Tenure-track Assistant professorship - Applications are invited for three tenure-track appointments at the Assistant Professor level in the Department of Mathematics and Statistics to commence July 1, 2004. Applications in the areas of Actuarial or Financial Mathematics, Mathematical Analysis, or Applied Mathematics (Computational or Industrial Mathematics) will be considered. Each successful candidate must have a PhD and is expected to have a proven record of research excellence and superior teaching ability. For the Actuarial or Financial Mathematics position, the candidate must have the background to teach and advise students in the department's actuarial program, and preference will be given to candidates who will contribute to existing areas of strength within the department. For the Analysis and Applied Mathematics positions, preference will be given to candidates who can strengthen existing areas of present and ongoing research activity. All positions at York are subject to budgetary approval. The selection process will begin January 5, 2004. Applicants should send resumes and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: **Actuarial Search Committee or Analysis Search Committee or Applied Mathematics Search Committee, Department of Mathematics and Statistics, York University, 4700 Keele Street, Toronto, Ontario, Canada M3J 1P3**, Fax: 416-736-5757, Email: actuarial.recruit@mathstat.yorku.ca or analysis.recruit@mathstat.yorku.ca or applied.recruit@mathstat.yorku.ca, www.math.yorku.ca/Hiring. York University is an Affirmative Action Employer. The Affirmative Action Program can be found on York's website at www.yorku.ca/acadjobs or a copy can be obtained by calling the affirmative action office at 416-736-5713. All qualified candidates are encouraged to apply; however, Canadian citizens and Permanent Residents will be given priority.

YORK UNIVERSITY – THE SCHOOL OF ANALYTIC STUDIES AND INFORMATION TECHNOLOGY – Tenure-track Assistant professor position - The School of Analytic Studies and Information Technology, Atkinson Faculty of Liberal and Professional Studies invites applications for a full-time tenure track position in mathematics at the assistant professor level effective July 1, 2004. All positions at York University are subject to final budgetary approval. Details are available at: **www.yorku.ca/acadjobs**. York University is an Affirmative Action Employer. The Affirmative Action Program can be found on York's website at www.yorku.ca/acadjobs or a copy can be obtained by calling the affirmative action office at 416-736-5713. All qualified candidates are encouraged to apply; however, Canadian citizens and Permanent Residents will be given priority.

Association for Women in Mathematics

2003/2004 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:

AWM Membership
4114 Computer & Space Sciences Building
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**

LAST NAME **FIRST NAME** **M.I.**

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Date of Birth (optional): (MMDDYYYY) [the date of birth field is to strictly help prevent duplicate entries]

PROFESSIONAL INFORMATION: If **student,** GRADUATE **or** UNDERGRADUATE **(circle one)**
If not employed, leave position & institution blank

Position:
Institution/Company:
City, State, Zip:

DEGREES EARNED:

	Degree(s)	Institution(s)	Year(s)
Doctorate:			
Master's:			
Bachelor's:			

ND_03

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.**

For NEW Individual members: JOIN at the reduced rate of $30.00 for the 03/04 membership year [valid thru 6/30/04]

REGULAR INDIVIDUAL MEMBERSHIP.....	$ 50	
2ND FAMILY MEMBERSHIP.....	$ 30	
(NO newsletter) Please indicate regular family member:		
CONTRIBUTING MEMBERSHIP.....	$100	
RETIRED or PART-TIME EMPLOYED MEMBERSHIP (circle one).....	$ 25	
STUDENT or UNEMPLOYED MEMBERSHIP (circle one).....	$ 15	
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).....	$	
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❑ 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** ⇨ ❑
Dues in excess of $15 and all cash contributions/donations are deductible from federal taxable income.

INSTITUTIONAL DUES SCHEDULE

❑ CATEGORY **1** (includes 10 student memberships; 1 free ad; 25% off additional Newsletter & online ads∗)..	$250	
❑ 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**

❑ Indicate if **GIFT membership FROM:** **TOTAL ENCLOSED $**

AWM Events

AWM would like to invite you to our events to be held in conjunction with the Joint Mathematics Meetings
Phoenix Civic Plaza, Phoenix, Arizona, January 7-10, 2004

Preliminary Schedule of AWM Events as of October 30, 2003

Wednesday, January 7th

3:20 p.m.- 4:35 p.m. **Panel Discussion:** *"Supporting the Diverse Personal Lives of Mathematicians"*
Organizers: Carolyn Gordon, Dartmouth College, **Marianne Korten,** Kansas State University, **Helen Moore**, American Institute of Mathematics Research Conference Center and **Christine Sormani,** Lehman College, CUNY. Moderator: **Helen Moore. Panelists: Beth Bradley,** University of Louisville, **Robert Bryant,** Duke University, **Jerome Dancis,** Duke University, **Dawn A. Lott,** New Jersey Institute of Technology, **Cleopatria Martinez**, Phoenix College and **Elizabeth Stanhope**, Willamette University
At conclusion of panel, AWM will recognize the **14th Annual Alice T. Schafer Prize honorees** [winner, runner(s)-up & honorable mention(s).]

4:35 p.m. - 5:00 p.m. **Business Meeting**

6:00 p.m. - 8:15 p.m. **Noether Dinner**
AWM will have a get-together with the Noether Lecturer for a casual dinner. If you would like to join us a sign-up sheet will be at the Exhibit Table or at the AWM Panel on Wednesday

9:30 p.m. **Reception** (entire math community invited; music, refreshments & cash bar available)

Thursday, January 8th

9:00 a.m. - 9:50 a.m. **25th Annual Emmy Noether Lecture:** ***"Symbolic dynamics for geodesic flows"***
presented by **Svetlana Katok,** Pennsylvania State University

4:25 p.m. - 7:00 p.m. **Joint Prize Session: Presentation** to the winners of the
14th Annual Louise Hay Award for Contributions to Mathematics Education and the
14th Annual Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman
These award presentations are held in conjunction with the **Joint Prize Session**. A cash bar reception will immediately follow.

Friday, January 9th

6:30 p.m. - 9:30 p.m. **AWM Workshop Dinner** [for Workshop presenters, mentors, panelists & organizers]

Saturday, January 10th

8:20 a.m. - 4:00 p.m. **AWM WORKSHOP:** presentations by **Women Graduate Students& Recent Ph.D.'s**
The entire math community is invited to attend all Workshop presentations.
The AWM Workshop is supported by the National Security Agency and the Office of Naval Research
Organizers: Catherine A. Roberts, The College of the Holy Cross and Jodie D. Novak, University of Northern Colorado

8:30 a.m. - 10:30 a.m. **AWM sponsored research talks by recent women Ph.D.'s I**

8:30 a.m. - 8:50 a.m.	**Katherine J. Mawhinney**, Appalachian State University	*Finite-to-One Mappings on* $\beta N - N$
9:00 a.m. - 9:20 a.m.	**Marian K. Hukle**, University of Kansas	*Real and Topological Stable Rank*
9:30 a.m. - 9:50 a.m.	**Natasha Dobrinen**, The Pennsylvania State University	*Measurably dominating randomness: some measurable similarities between set theory and recursion theory regarding dominating functions*
10:00 a.m. - 10:20 a.m.	**Kathryn Nyman**, Texas A&M University	*Inequalities for geometric lattices invariants*

10:30 a.m. - 11:45 a.m. **AWM sponsored Poster Session featuring Graduate Students(light refreshments will be available)**

Laura Ciobanu, Rutgers University	*On the Complexity of the Endomorphism Problem for Free Groups*
Alissa S. Crans, University of California, Riverside	*Lie 2-algebras*
Eva Curry, Rutgers University	*Characterizing Multivariable Low-Pass Filters*
Rachelle DeCoste, University of North Carolina, Chapel Hill	*Density of Closed Geodesics in Compact Nilmanifolds Defined by Compact Semisimple* $\mathfrak{g}$*–modules*
Elizabeth Denne, University of Illinois at Urbana-Champaign	*Alternating Quadrisecants of Knots*
Peg Howland, University of Minnesota	*Application of the Generalized Singular Value Decomposition to Face Recognition*
Maria del Mar Gonzalez, Princeton University	*Singularities in Conformal Geometry: from PDE to Topology*
Sarah Hutcheson Jahn, University of Illinois at Chicago	*A Blowing Up Algorithm for Calculating Rings of Integers*
Katarina Jegdic, University of Illinois at Urbana-Champaign	*Convergence of a Spacetime Discontinuous Galerkin Method to a weak solution of Temple Systems*
Gizem Karaali, University of California, Berkeley	*r-matrices on Lie superalgebras*
Olga Kurgalina, Tufts University	*Radial parts of invariant differential operators on Grassmann manifolds*
Rebecca Vessenes, California Institute of Technology	*Generalized Foulkes' Conjecture and Tableaux Construction*

11:45 a.m. - 12:45 p.m. **Lunch**

1:00 p.m. - 2:25 p.m. **Panel Discussion**: *"Shaping a Career in Mathematics"*
Moderator: **Jodie D. Novak**, University of Northern Colorado; Panelists: **Tracy Fischer**, Motorola; **Joan Hutchinson**, Macalester College; **Barbara Keyfitz**, University of Houston; **Rachel Kuske**, University of British Columbia; **Janet McShane**, Northern Arizona University; **Anne Shepler**, University of North Texas

2:30 p.m. - 4:30 p.m. **AWM sponsored research talks by recent women Ph.D.'s II**

2:30 p.m. - 2:50 p.m.	**Lisa Bloomer**, Middle Tennessee State University	*Comparison of Histograms for Use in Cloud Modeling*
3:00 p.m. - 3:20 p.m.	**Christine E. Heitsch**, University of Wisconsin, Madison	*Combinatorial Results Motivated by Computational Biology*
3:30 p.m. - 3:50 p.m.	**Haohao Wang**, Southeast Missouri State University	*Implicitization via Syzygies*
4:00 p.m. - 4:30 p.m.	**Vicky Williams**, Appalachian State University	*A combinatorical approach to finding root multiplicities in some indefinite type Kac-Moody algebras*

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** for an **AWM Events Program** or refer to the **Joint Meetings Program.**

Volume 33, Number 6, November–December 2003

ADDRESS CORRECTION FORM

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