AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

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President's Report

Thanks to All

It is hard for me to believe that this is my twelfth and last President's Report for AWM. Time and timing play tricks. I wrote my first column a few weeks before becoming president. As I write this, in November, my term still has two months to run, but by the time you read it, there will be only a few weeks left. It has been a wonderful experience, and this column is dedicated to thanking the many people who helped me with the job and who helped AWM in so many ways. One thing I would like to convey is how many jobs, large and small, there are at AWM, and how many people have volunteered to do them, and how much they do, singly and collectively, to keep the Association going and to make it what it is.

If you have ever wondered how people get chosen to play a part in AWM, the answer is that it does not seem to be a systematic process, and your chances of being asked are greatly increased if you are a friend of the president or of the executive director or of any member of the executive committee. Fortunately, presidents and executive committee members change periodically, so many people get chances at these jobs—and it would be great if even more people were offered this opportunity to contribute their energy to AWM and to have a say in the direction the organization will take. Let me begin with a round of thanks to those who have volunteered, who have helped out at the AWM booth at math meetings, who have passed out fliers for talks, and who have generally helped out when needed.

There is a big group of people—mostly women, but men who have served on these committees have given AWM welcome support as well—who help AWM by serving on one of our many selection committees. A large fraction of AWM members have had the chance to be involved with one of our many programs, whether it was the Travel and Mentoring Grants, the Workshops for Women Graduate Students and Recent Ph.D.'s, the Sonia Kovalevsky High School Mathematics Days, or one of the AWM lectures (Falconer, Kovalevsky and Noether) or awards (Hay and Schafer). Participants or awardees are chosen by committees, typically consisting of three people, with members serving through three selection processes.

IN THIS ISSUE

AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

The purpose of the Association for Women in Mathematics is

- to encourage women and girls to study and to have active careers in the mathematical sciences, and
- to promote equal opportunity and the equal treatment of women and girls in the mathematical sciences.

AWM was founded in 1971 at the Joint Meetings in Atlantic City.

The *Newsletter* is published bi-monthly. Articles, letters to the editor, and announcements are welcome.

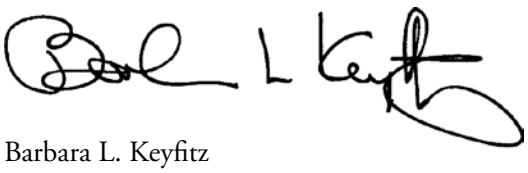
Circulation: 3500. © 2007, AWM

These are not assignments that one can easily volunteer for, as serving effectively requires maturity, judgment and breadth. And, as committee members get replaced one at a time, we are often looking for someone in a specific research field, or from some part of the country, or some particular type of university. During the two years that I have been president, I have asked many people for advice (in particular, AWM now has a "committee on committees" that gives advice) and have met, at least electronically, a number of AWM members at different career stages, at different universities, in different fields of mathematics—people I would have been unlikely to meet if not for our common interest in helping AWM. To all these people, who have done so much, my thanks for all you have done.

I am a terrible procrastinator about writing letters. Somehow I know that many people ought to have received thank-you letters—that never got written. To all of you, my thanks now. Someday, in some other life, perhaps I will finish those tasks; but this year, all I can do is to dedicate this column to the many volunteers who have made AWM the great and effective organization it is.

Let me also thank the AWM staff—both our East Coast headquarters, managed by Jennifer Lewis, and the West Coast Executive Director Jenny Quinn. You serve AWM with a dedication that goes far beyond anything we could pay you, and I feel happy turning the presidency over to Cathy Kessel in a couple of months, knowing that you will support her efforts and make her job as pleasant as you have made mine.

Finally, I want to thank the Executive Committee members I have worked with for the past three years, first as president-elect and then as president. You have brought new ideas and insights to AWM, a diversity of opinions, a mixture of passion and common sense. You have in particular saved me from making many mistakes—but let me take exclusive credit for those I did make. The Executive Committee combines both the policy-making and executive roles of AWM's governance, and besides the people who have been so willing to debate about AWM's policies and projects, let me thank the people who have carried out so much of the work: our clerk (Maura), web editor (Holly), meetings coordinator (Bettye Anne), treasurer (Rebecca), and newsletter editor (Anne). You are all awesome.



Barbara L. Keyfitz
Toronto, Canada
November 27, 2006

AWM Conflict of Interest Policy

A conflict of interest may exist when the interest (financial or other) or concerns of any member of AWM, or the member's immediate family, or any group or organization to which the member has an allegiance or duty, may be seen as competing or conflicting with the interests or concerns of AWM.

When any such potential conflict of interest is relevant to a matter requiring participation by the member in any action by AWM or any of its committees to which the member belongs, the interested party shall call it to the attention of AWM or the committee and such person shall not vote on the matter. Moreover, the person having a conflict shall retire from the room in which the organization or its committee is meeting (or from a conference call) and shall not participate in the final deliberation or decision regarding the matter under consideration.

The foregoing requirements shall not be construed as preventing the member from briefly stating her position in the matter, nor from answering pertinent questions of other members, as her knowledge may be of great assistance.

The minutes of the meeting of the organization or committee shall reflect when the conflict of interest was disclosed and when the interested person did not vote. When there is a doubt as to whether a conflict of interest exists, and/or whether a member should refrain from voting, the matter shall be resolved by a vote of the organization (or its committee), excluding the person concerning whose situation the doubt has arisen.

AWM Election: Call for Suggestions

In December 2007 we will be electing the following officers: President-Elect, Treasurer and four At-Large Members. Carolyn Gordon (Dartmouth College), recent AWM president, will serve as chair of the Nominating Committee. Suggestions for candidates may be made to Barbara Keyfitz or Cathy Kessel by **February 15, 2007**; they will pass them along to the Nominating Committee. Your input will be appreciated!

MEMBERSHIP AND NEWSLETTER INFORMATION

Membership dues (Membership runs from Oct. 1 to Sept. 30)
Individual: $55 Family (no newsletter): $30
Contributing: $125 First year, retired, part-time: $30
Student, unemployed, developing nations: $20
Friend: $1000 Benefactor: $2500
All foreign memberships: $10 additional for postage
Dues in excess of $15 and all contributions are deductible from federal taxable income when itemizing.
Institutional Members:
Level 1: $300
Level 2a or 2b: $175/$150
See 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 $55/year ($65 foreign). Back orders are $10/issue plus shipping/handling ($5 minimum).

Payment
Payment is by check (drawn on a bank with a US branch), US money order, or international postal order. Visa and MasterCard are also accepted.

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 Managing Director, 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 $12 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 book review material** to Anne Leggett, Department of Mathematics and Statistics, Loyola University, 6525 N. Sheridan Road, Chicago, IL 60626; e-mail: leggett@member.ams.org; phone: 773-508-3554; fax: 773-508-2123. Send all **book review** material to Marge Bayer, Department of Mathematics, University of Kansas, 405 Snow Hall, 1460 Jayhawk Boulevard, Lawrence, KS 66045-7523; e-mail: bayer@math.ku.edu; fax: 785-864-5255. Send everything else, **including ads and address changes**, to AWM, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030; phone: 703-934-0163; fax: 703-359-7562; e-mail: awm@awm-math.org.

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Online Ads Info
Classified and job link ads may be placed at the AWM website.

Website and Online Forums
http://www.awm-math.org

AWM-NET

Editor: Dianne O'Leary
oleary@cs.umd.edu

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

AWM DEADLINES

NSF-AWM Mentoring Travel Grant:
February 1, 2007

NSF-AWM Travel Grant:
February 1, 2007 and May 1, 2007

Sonia Kovalevsky High School Mathematics Days: February 4, 2007

Louise Hay Award: April 30, 2007

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In Memoriam

Karen A. Ames, 1953–2006

Suzanne Lenhart, University of Tennessee and Oak Ridge National Lab

Professor Karen A. Ames passed away on September 28, 2006. She received her Ph.D. from Cornell University under the direction of Larry Payne in 1980. She had worked in the Department of Mathematical Sciences of The University of Alabama in Huntsville since 1990.

Karen was a great mathematician, a dedicated teacher and a good friend to many in the mathematical community. She worked in the areas of ill-posed problems for partial differential equations, continuum mechanics, mathematical modeling, differential inequalties, and stability of solutions with partial differential equations. She wrote a book with Brian Straughan, *Non-Standard and Improperly Posed Problems,* published by Academic Press in 1997.

Karen was active in recruiting women to mathematics. She was named a Parker-Lewis Lecturer by the Alabama Association of College Teachers of Mathematics in 1991 and was awarded the Emmy Noether Lectureship at Bryn Mawr College in 1998–1999.

Persons wishing to make a contribution in memory of Dr. Ames may do so by sending their gift to:

UAH Foundation
Office of University Development
Shelbie King Hall, Suite 300
Huntsville, AL 35899

It should be noted whether the gift is intended for the Dr. Karen A. Ames Graduate Fellowship for Women in Mathematics or for the Dr. Karen A. Ames Lecture Series on Applied Mathematics.

Karen Dee Michalowicz, 1942–2006

http://www.maa.org/news/inmemoriam.html

Karen Dee Michalowicz died on July 17, 2006 at the age of 63. She was a nationally recognized mathematics teacher at the Langley School in McLean, VA, having received the Presidential Award for Mathematics Teaching in 1994. Karen was especially interested in the use of history in the teaching of mathematics. In that role, she co-directed the NSF-sponsored, MAA administered grant program, Historical Modules for the Teaching and

Learning of Mathematics, beginning in 1998. That program involved about twenty-five college and high school teachers of mathematics, who produced such a large amount of material for teaching mathematics using history that the MAA was forced to publish it as a CD. In 1998, she was also invited to participate in the study group on History in Mathematics Education organized by the International Commission on Mathematical Instruction. After an intensive week of discussions, the group ultimately co-authored the ICMI Study *History in Mathematics Education*, which appeared in 2000. Karen was in charge of the group writing the chapter "History in support of diverse educational requirements—opportunities for change." Over the years, she had amassed a huge collection of mathematics texts from the nineteenth century and earlier, a collection whose contents she enthusiastically shared with students and colleagues in many presentations at national and international meetings. She will be greatly missed by her numerous friends and colleagues in the MAA, the WME, the NCTM, and the Benjamin Banneker Association, among others.

Ed. Note: See http://www.clab.edc.uoc.gr/HPM/Announcements.htm#Michalowicz and http://mathforum.org/kb/thread.jspa?threadID=1421860&tstart=15 for two additional obituaries for this remarkable woman.

Estelle Ramey, 1917–2006

press release, Association for Women in Science

Dr. Estelle Ramey, one of AWIS' founders, passed away September 8, 2006, at her home in Bethesda, Maryland, at the age of 89. Ramey earned her degree in Physiology and Biophysics and taught at Georgetown Medical School, but was better known as a feminist speaker and writer. Noted for her great wit, Ramey once quipped: "We will have equality when a female schlemiel moves ahead as fast as a male schlemiel."

During the early years of AWIS, one of the organization's first victories involved Ramey's fight against a medical textbook company that published an anatomy textbook replete with pictures and puerile text of strippers, purportedly to illustrate anatomical issues. AWIS' threatened national boycott of all books produced by that publisher was a resounding success, made *Time* magazine, and marked one of the first times AWIS forced an unconditional surrender to the American women in science.

Throughout her career, Ramey decried sexist comments and situations that treated women as less than fully human. She felt very strongly about how little, if anything, it took to extend a helping hand to someone else in a way that could really make a huge difference in their lives. As she wrote in her book called *Letters to Our Grandchildren,* "If I could leave you with any advice, it would be to speak words of caring not only to those closest to you, but to all the hungry ears you encounter on your journey through a cold world. Stop on the mountain climb to bring all those less lucky, less agile or well endowed. It will make the view even more beautiful when you get to the top."

Ramey is survived by her husband of 65 years, Dr. James T. Ramey of Bethesda; two children, Drucilla Stender Ramey of New York and Dr. James Ramey of Bethesda; and five grandchildren. One granddaughter, Sara Ramey, is writing a biography of Dr. Ramey.

In 1973, the AWIS Educational Foundation was begun by Estelle Ramey with her personal funds. Over the past 30 years, the endowment has grown with contributions from members as well as family, friends, and colleagues who establish a named award. Today, about 25 fellowships are awarded annually, totaling $15,000–20,000. You can donate to the AWIS Educational Foundation, a 501(c)(3) organization, or to AWIS directly; see www.awis.com.

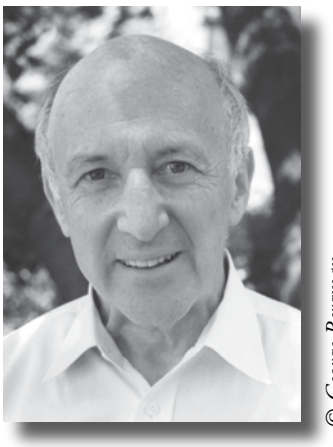
Ed. Note: It is worth seeking out the *Los Angeles Times* obituary of Ramey by Elaine Woo, September 17, 2006. It gives a detailed account of Ramey's interactions with Dr. Edgar F. Berman, who "at a session of the Democratic Party's Committee on National Priorities … dismissed Hawaii Rep. Patsy T. Mink's call for action on women's rights with a diatribe on what he saw as crippling differences between the sexes," including the infamous observation that "a menopausal woman president would have been incapable of making decisions on the Bay of Pigs." Ramey, in a letter to the

editor, made the caustic comment that she was "startled to learn that ovarian hormones are toxic to brain cells."

Patricia Sullivan's obit for her in the *Washington Post* is at this writing still available for free online at http://www.washingtonpost.com/wp-dyn/content/article/2006/09/09/AR2006090901054_pf.html. It also includes interesting information on Ramey's scientific accomplishments and examples of her rapier wit.

Leon A. Henkin, 1921–2006

press release, Robert Sanders, Media Relations, UC Berkeley



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Leon A. Henkin, a professor emeritus of mathematics at the University of California, Berkeley, who labored much of his career to boost the number of women and underrepresented minorities in the upper echelons of mathematics, died of natural causes at his Oakland home on November 1. He was 85.

Colleagues said Henkin was a social activist who in the 1960s noticed that mathematically talented women and minority undergraduates were not pursuing math or math-related careers in college. He spearheaded the formation in 1964 of the Special Scholarships Committee at UC Berkeley, comprised of Nobel laureates and top campus scholars, to study the problem and establish special opportunity scholarships for disadvantaged students.

The program, which started out preparing high school students to succeed in college and supporting them with Special Opportunity Scholarships, served as a model for the federal Upward Bound Program founded a year or two later and for programs that sprang up at universities around the country, according to Henkin's former student, Uri Treisman, professor of mathematics at the University of Texas, Austin. Treisman is executive director of that campus's Charles A. Dana Center, which sets K–12 standards for Texas schools.

"Today, there are several hundred programs aimed at ethnic minority students and poor white students, and Henkin's model has become a dominant one," Treisman said. "It affected the then-new movement to diversify engineering schools, for example, providing a core insight for them."

Henkin was chair of the Special Scholarships Committee for many years and stepped down after more than 40 years as a member only a year ago, though the committee designated him a "permanent guest member."

Henkin and Treisman discovered in the mid-1970s that talented high school students often failed to succeed in college because of unfamiliarity with the college environment and uncertainty about what was required to succeed in science and math. In 1974, they set up the Professional Development Program to address these problems, focusing on students in mathematics and math-related fields. Among the strategies they developed was to encourage group study as well as solo study and to tell students with "rock solid clarity" what is expected in order to succeed.

"We realized that what these kids needed was not a remedial program, but an honors program," said Treisman. "That's what we created, and we produced a lot of kids who went on to become math majors and get Ph.D.'s."

The program proved so successful at promoting academic achievement among high-achieving minority undergraduates that it spawned clones throughout the campus. These programs were combined in 1992 and became the Coalition for Excellence and Diversity in Mathematics, Science and Engineering, which is still going strong today. The coalition received the 1998 Presidential Award for Excellence in Science, Mathematics and Engineering Mentoring from President Bill Clinton.

In 1989, Henkin and Treisman also instituted the Summer Mathematics Program, which brought talented undergraduate math majors to campus for workshops on hot new areas of mathematics. The program, which ran for 10 years, was a success, but funding eventually ran out.

After Proposition 209 passed in 1996 and racial or ethnic preferences in UC's admissions process were forbidden, Henkin remained optimistic, even when talented but

disadvantaged high schoolers turned down admission to UC because of an alleged unfriendly atmosphere, said Caroline Kane, head of the coalition.

Henkin would "heave a deep sigh, shake his head, then say, 'We just have to tell them to come here for graduate school,'" said Kane, UC Berkeley professor in residence of molecular and cell biology.

In 1983, Henkin also played a central role in development of the Bay Area Mathematics Project, an early collaboration linking students, teachers, parents, administrators and community leaders to improve the teaching of math in the schools. He pushed this idea nationally, fathering the American Mathematics Project with the same goals.

"Few individuals of our era have had a grater impact on the health of American mathematics than has Leon Henkin," read a tribute to Henkin in 1990 upon his receipt of the first Yueh-Gin Gung and Dr. Charles Y. Hu Distinguished Service to Mathematics Award of the Mathematical Association of America. "He was one of the pioneers to recognize the importance of mathematicians involving themselves actively in the improvement of mathematics education at all levels."

Henkin also led, with UC Berkeley statistics professor David Blackwell, a 1989 study of math literacy in the U.S. commissioned by the American Association for the Advancement of Science. Part of an effort dubbed Project 2061, their report advocated sweeping changes in math education, including less rote memorization of mathematical rules and a more engaging and lively exploration of concepts and processes that explain the world around us.

Henkin came to UC Berkeley in 1953, having already established his reputation in the field of logic with a "brilliant" doctoral dissertation in which he produced a radically new proof of the fundamental Gödel completeness theorem, according to logician John W. Addison, UC Berkeley professor emeritus of mathematics. This theorem states that the axioms and rules of inference of basic ("first-order") logic are complete, that is, that they are sufficient to prove all logically valid sentences within the logic.

"The proof was recognized by leading logicians to be extremely original as well as shorter and easier to understand than Gödel's original proof," said Addison. "It was based on a new technique, involving the use of so-called 'Henkin constants,' that became and remains one of the fundamental tools used in the branch of logic known as 'model theory,' now one of the four leading branches of mathematical logic."

Henkin also brought the tools of algebra to the study of logic, co-authoring the major work *Cylindric Algebras* (1971) with J. Donald Monk and Alfred Tarski. The late Tarski, a UC Berkeley math professor and one of the great logicians, helped build the campus into what many consider the world's leading center of mathematical logic, and Henkin was his first major hire.

Henkin was born in Brooklyn, NY, on April 19, 1921, the son of immigrant Russian Jews. He earned a B.A. in mathematics and philosophy from Columbia University in 1941 and an M.A. in 1942 and a mathematics Ph.D. in 1947 from Princeton University, where his dissertation supervisor was the famous logician Alonzo Church.

During World War II, he worked in industry for the Manhattan Project, first as a mathematician for the Signal Corps Radar Laboratory in Belmar, NJ; then in New York City on the design of an isotope diffusion plant; and finally, as head of the separation performance group at Union Carbide and Carbon Corp. in Oak Ridge, TN.

After completing his Ph.D. and two years of postdoctoral work at Princeton, he moved west in 1949 to the University of Southern California's math department before joining the UC Berkeley faculty in 1953. Henkin declined an earlier invitation to come to UC Berkeley because of the required loyalty oath, which was declared unconstitutional in 1953. He achieved the rank of full professor in 1958 and retired in 1991.

Henkin served several years as vice chairman of the Department of Mathematics, three times as acting chairman, and from 1984–1985 as chairman. From 1959–1960, he served as the first chair of UC Berkeley's pioneering inter-disciplinary Group in Logic and the Methodology of Science. Then from 1973–1975, he was associate director of the Lawrence Hall of Science, a science museum and education research center at UC Berkeley.

Addison, a former longtime chair of the Department of Mathematics, described Henkin's teaching as truly exceptional. "His writing and teaching were both characterized

by extraordinary clarity," he said, "and his enthusiasm for the importance and the beauty of mathematics and logic made a lasting effect on several generations of students."

He was the first recipient of the Leon Henkin Citation for Distinguished Service, presented to a UC faculty member for "exceptional commitment to the educational development of students from groups who are underrepresented in the academy."

Henkin was passionate in his support of many organizations, such as the campus's Young Musicians Program, which helps talented yet less advantaged musicians, as well as Save the Bay, The Nature Conservancy, Doctors Without Borders and the Oakland Museum.

Henkin is survived by his wife, Ginette (Potvin) Henkin of Oakland; sons, Julian of New York City and Paul of San Diego; and sister, Estelle Kuhn of New York City.

Contributions in Henkin's memory should be sent to the campus's Professional Development Program, through the online Give to Cal site (https://colt.berkeley.edu/urelgift/pdp.html) or to 230-B Stephens Hall, University of California, Berkeley, CA 94720-5881, or to Doctors Without Borders.

Sonia Kovalevsky High School Mathematics Days

Through grants from Elizabeth City State University (ECSU) 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 2007 for Spring 2007 using funds remaining after the August 2006 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.

Applications, not to exceed six pages, should include: a) a cover letter including the proposed date of the SK Day, expected number of attendees (with breakdown of ethnic background, if known), grade level the program is aimed toward (e.g., 9th and 10th grade only), total amount requested, and organizer(s) contact information; b) plans for activities, including specific speakers to the extent known; c) qualifications of the person(s) to be in charge; d) plans for recruitment, including the securing of diversity among participants; e) detailed 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. The grant does not permit reimbursement for indirect costs or fringe benefits. Please itemize direct costs in budget.); f) local resources in support of the project, if any; and g) 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 2007. 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 or by June 1, 2007, whichever comes first. Reimbursements will be made in one disbursement; no funds will 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, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. For further information: phone 703-934-0163, e-mail awm@awm-math.org, or visit www.awm-math.org. Applications must be received by **February 4, 2007**; applications via e-mail or fax will not be accepted.

Math for America

Lee C. Umphrey, Director of Communications and Public Affairs, MfA

Though the quality of math and science teachers in America's public schools is undergoing a steady national decline, a program in New York City is addressing the issue directly.

Since its inception in 2004, Math for America (MfA), a private non-profit organization dedicated to significantly improving mathematics education in our nation's public schools, has selected and placed 48 Newton Fellows and 20 Master Teachers in 51 secondary schools in New York City. An additional 38 Newton Fellows are currently receiving master's level training and will enter the classroom in 2007.

The early success of MfA's Newton Fellowships Programs has prompted the organization, led by its founder Jim Simons and Executive Director Irwin Kra to announce a doubling of the program in New York City. The organization also spends considerable time in Washington, D.C., promoting the creation of a national, publicly financed program, Math and Science Teaching Corps (MSTC), using the MfA model. Significantly, MfA is part of a larger effort to persuade Congress to make improved math and science education a national priority. The core of this priority for MfA is to increase the salaries for math teachers in the belief that the promise of higher compensation will encourage new graduates to consider teaching in public schools a competitive option among the traditionally more lucrative private sector jobs.

The premise of the Newton Fellowship Program is that students deserve to be taught by highly trained and motivated mathematics teachers. The five year fellowship offers aspiring New York City math teachers generous financial incentives including a stipend of $90,000, a full tuition scholarship for a master's program and support services such as workshops, on-going mentoring and camaraderie with a group of new and dynamic teachers.

MfA's Master Teacher program also provides generous financial rewards and extensive professional development

Laura Trigeiro and Kelly Hunter

Carrie Staples and Linnet Charles

to experienced teachers who commit to remaining in NYC public schools for at least four years. Through MfA's Newton Fellows and Master Teachers programs, there is a growing community of math educators who know and love mathematics and are committed to student achievement. An important component of the program's success is a support system that includes, along with MfA's value-added services, the NYC Department of Education and partner institutions New York University, Teachers College at Columbia University and Bard College. These institutions provide intensive teacher preparation and coursework, ensuring that MfA's Newton Fellows meet the highest standard.

Two MfA Newton Fellows of the 2004 cohort share similar experiences in their early teaching careers. Beth Morgan and Valerie Vu feel that being proficient in math while being personally confident as a teacher is the best way to instill confidence in students and leads to successful

classroom learning. While these women had different motivations for becoming teachers, they both enjoy and appreciate the camaraderie and esprit de corps which exists among the Newton Fellows.

Beth Morgan, who teaches at Eleanor Roosevelt High School, says, "MfA's constant mentoring and scheduled workshops have been extremely helpful to me, especially on the use of technology. I am now confident applying mathematical technology in the classroom which really engages the students, builds pertinent skills and makes the connection for them between learning and potential uses of math when they choose a career." Valerie Vu, teaching at the High School for Media and Communications, feels that making math fun and practical is crucial, explaining, "My interaction with students and my own enthusiasm and love for math will help them express their own interest. My classroom provides a positive atmosphere for students to have fun with math."

MfA is currently accepting applications for its 2007 cohort of Newton Fellows and Master Teachers. Prospective Fellows should submit an application, transcripts, letters of recommendation, and a personal statement. Applicants' scores on standardized tests measuring mathematic content knowledge will also be considered. Dawn Techow, Associate Director for Math for America says, "When we select our candidates, we look first for strong math-content background and then for the passion and dedication it takes to be a good teacher."

To learn more about MfA or apply to its programs, visit www.mathforamerica.org.

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 $5000 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 1 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.)

Applications. Each applicant should submit ***five copies*** of each of the following: 1) the AWM Mentoring Travel Grant Form; 2) a cover letter (if a prior AWM-NSF mentor grant has been awarded, indicate so); 3) a curriculum vita; 4) a research proposal, approximately five pages in length, which specifies why the proposed travel would be particularly beneficial; 5) 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; 6) a proposed budget; and 7) 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, AWM, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. For further information: phone 703-934-0163, e-mail awm@awm-math.org, or visit www.awm-math.org. Applications via e-mail or fax will not be accepted. The deadline for receipt of applications is **February 1, 2007**.

Book Review

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

Mathematical Girls in Young Adult Fiction

review by Marge Bayer (with the help of Nora Byers, age 12)

How are female math whizzes portrayed in young adult fiction? For the most part, of course, they are not portrayed at all. With some digging I found six young adult novels in which the protagonist is a girl who has strong ability and interest in mathematics. All were published in the last five years, but only two of them are set in current times. In these two, the focus is on personal issues facing the teen, with the mathematical talent as a backdrop. I will discuss the books in chronological order of their stories.

The Voyage of Patience Goodspeed, Simon and Schuster, 2002, ISBN 0689848692 and ***The Education of Patience Goodspeed***, Simon and Schuster, 2004, ISBN 0689864116, by Heather Vogel Frederick

These books take place in the 1830s. Patience is a thirteen-year-old girl from Nantucket. Her father is the captain of a whaling ship. When Patience's mother dies, her father takes Patience and her six-year-old brother along on his whaling expedition, expected to last three years. Patience is heartbroken to leave her home and particularly her mathematics tutor, young Maria Mitchell (later a famous astronomer). On ship Patience eventually succeeds at convincing her father to take her mathematics interest seriously and to allow her to study navigation. Her intelligence, bravery, resourcefulness and, in particular, navigation skills resolve the primary crisis of *The Voyage of Patience Goodspeed*.

In the sequel, *The Education of Patience Goodspeed*, Captain Goodspeed leaves his children in Hawaii while he continues whaling in the Pacific. Patience is to be educated at the hands of a conservative missionary, whose goals are to train Patience and his daughter to be good homemakers and to Christianize the heathen Hawaiian girls. Patience identifies herself as an "assistant navigator" and so thinks it pointless to study housewifery.

Mathematics is not in the girls' curriculum. But Patience takes her cue from a book she brought on her journey: a biography of the recently deceased mathematician Sophie Germain. Legend has it (the source apparently Guglielmo Libri, something of a protege of Sophie Germain) that Germain as a child had to study mathematics in secret at night. To begin with, Patience studies mathematics on her own (but not in secret). Later her aunt asks her to teach her navigation, and then the missionary's daughter joins them (in secret) for mathematics instruction. In this volume the pursuit of mathematics and resistance against the assumed girls' roles are central themes.

The author's notes at the end of the two books describe some of her historical research. Various events and situations of the books are based on actual occurrences. The second book ends partway into the second year of the whaling expedition, so I think we can expect at least one more volume about Patience Goodspeed.

Hannah Divided, by Adele Griffin, Hyperion, 2002, ISBN 0786808799

This book takes place a century later, in the 1930s. Hannah Bennett is a 13-year-old farm girl. She goes to a rural school, where she excels in mathematics, but is, in contrast, unable to read. Her parents are unimpressed by the former and unperturbed by the latter, because they are irrelevant for the life expected for Hannah as a farm wife. A rich education crusader from Philadelphia discovers Hannah, however, and, with the encouragement of Hannah's grandfather, brings her to the city to prepare for a scholarship competition.

We first see Hannah as, essentially, an idiot savant. While she cannot read, she can scan pages of a book and tell quickly how many times each letter appears. She is obsessive-compulsive, counting everything around her and tapping her fingers in patterns of 32, her favorite number. We soon discover that she is very intelligent,

notwithstanding her inability to read. A major theme of the book is how Hannah deals with rejection from her peers, who see her as too weird. The bad news is that the girl math whiz is presented as so strange; the good news is that she is able to make friends in spite of her strangeness.

A Higher Geometry, by Sharelle Byars Moranville, Henry Holt and Co., 2006, ISBN 0805074708

Take *Rocket Boys* (Homer Hickam's memoir on which the film *October Sky* is based), replace the boy with a girl, the coal mine with farms, and rocketry with mathematics, and you get *A Higher Geometry*, set in the late 1950s. Anna Conway, age 15, wins a state math competition and goes on to a team qualifying exam for a national advanced studies program for high school students. She has to struggle with her father every inch of the way to be allowed to participate. The exam is interesting. Teams of five students are given a set of geometry statements, and they are to prove one using only Euclid's first four postulates. After several hours of work it is Anna who realizes that none of the statements can be proved without assuming Euclid's fifth postulate. Her acceptance letter to the national program states, "the committee was impressed by the imagination and creativity that you brought to the table." Thus, this is the book that has the best portrayal of mathematics itself. (The author started college as a math major.) The book is divided into four parts. Each is introduced by a quote or commentary about mathematics and mathematicians.

Another thread in this novel is the story of Anna's romantic and sexual awakening. It is more appropriate, thus, for the older teen. Unfortunately, the writing style is geared towards a much younger audience: the vocabulary is quite basic, and the sentence structure is simple.

Nothing But the Truth (and a Few White Lies), by Justina Chen Headley, Little Brown, 2006, ISBN 0316011282

Fifteen-year-old Patty Ho is the daughter of a Taiwanese mother and an absent, white US father. Her mother, in reaction to her own past, wants to control and thereby protect her daughter. When a fortune-teller predicts that Patty will end up with a white boyfriend, her mother decides to send her off to math camp at Stanford. Sheltering a teen is not a great motivation for sending her to math camp. Furthermore, you don't need to be a fortune-teller to guess that Mom's goal was not achieved. So what is Patty's attitude to all this? Patty is very good at math, but doesn't want to admit it. Is it because she doesn't really like it? Or because it is not cool (or hot) to be good at math? These issues, and her academic performance at math camp, are left to the reader's imagination. The book is really about Patty coming to terms with her ethnic identity, her mother, her father, and her social standing with her peers. And it is written in the voice of a teenager. The message we can identify with is that it is okay to be a math nerd.

Heart, You Bully, You Punk, by Leah Hager Cohen, Penguin, reprinted 2004, ISBN 0142004324

Perhaps this book doesn't fit in with the theme. The story deals with a high school sophomore, Ann, who excels at math and is preparing for a competitive exam. But it is about a trio of people, Ann, her father Wally, and her math teacher Esker. All are interesting, three-dimensional characters, fuller than the characters in the other books. As the story progresses, the focus shifts from Ann to Esker. Mathematics plays a cameo role, with fractals occasionally popping up to illustrate Esker's view of the world. (On her webpage, the author admits to hating math, but said she was inspired by a lecture on fractals.) Also, there is a reasonable discussion about Esker's decision to go into teaching instead of pursuing a graduate degree in mathematics. This is an excellent novel of emotions and relationships, appropriate for mature readers. (By the way, you are not likely to find this book at your local library or book store, but it is available on the web essentially for the cost of shipping and handling. I speculate that the book did not have commercial success in part because its title suggested a very different style of book.)

These books generally do not convey much of an idea of mathematics. With the exception of Moranville (*A Higher Geometry*), the authors have no math background. What they do is show that it is normal for girls to excel in math, that mathematics can give girls and women pleasure, that women may have to make difficult choices in order to pursue mathematics, and that math whizzes can have happy (social) lives. As good reads, I recommend the Patience Goodspeed books for all ages, and *Heart, You Bully, You Punk* for older teens and adults. All of these books appeared within the last five years. Let us hope that this is the beginning of a trend. If you know of other young adult novels dealing with girls and mathematics, please let me know.

Education Column

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Interpreting Educational Research

When I was first invited to write for this column, I thought I would write about my research about graduate programs in the mathematical sciences that have successfully supported women and students of underrepresented groups, establishing environments where these talented students succeeded at earning the Ph.D. However, I have since become puzzled by another aspect of educational research as it bears on the situation of women in mathematics. It is a very important one, and it will be the subject of this column: how should educational (and other) research about women in mathematics and science be interpreted to heighten our understanding of the important issues? This is part of a broader and equally important question: how can people be responsible and thoughtful readers of research that is not in their area of specialty?

There is a lot of valuable and meaningful research available about gender and science, including studies of subjects as diverse as neuroscience, how individuals learn, educational interventions on behalf of females, and the social settings of education. These studies have contributed in important ways to our knowledge about the learning and educational and professional progress of women and men in mathematics and the sciences.

In September, I was fortunate to participate in the Women in Mathematics workshop at the Banff International Research Station. In the course of our discussions about research on gender in the sciences, ranging from reports on individual academic programs in which women have or have not been successful, to biochemical differences between women and men, to survey reports on women's academic attainment and obstacles to their performance, it became clear that, even when reading research reports from apparently reputable sources, misinterpretations are not only easy, but often likely. Unless a reader is trained to read any particular disciplinary body of research with a critical and educated eye, it is hard to know how to make sense of it all and to identify which conclusions are valid. These misunderstandings of research findings are not without consequence, and in fact some have been quite harmful to women in mathematics and science.

How does an outsider to the field—or even an insider, for that matter—learn to read and interpret research well? This is a complicated question, and many of us spend years building our careers around learning to do this. However, I am humbly going to make an attempt to begin addressing it here, by describing a few important sets of questions a reader should ask herself to help her draw meaningful conclusions from research on gender in mathematics and science.

How was the sample formed, and what population does it represent?

Theoretically, much social science research is built on the premise of studying a sample of people in order to draw conclusions about a broader population. The idea is that if the sample is representative of the population in relevant ways, then what is observed in the sample can be reasonably inferred to apply to the entire population. In practice, however, it is almost impossible to generate a truly representative sample

of most populations of interest. For example, consider a study of the experiences of female mathematics graduate students. Researchers often start by identifying the population they wish to study. Is the population of interest women across the U.S.? Should it include only students who received their undergraduate degrees at U.S. institutions? only students who come directly from college into graduate school? only students with certain academic traits? students in any of the mathematical sciences, or only pure mathematics? None of the answers to these questions are right or wrong; what is best depends on the particular questions the researchers wish to address. If the research questions make the relevant population first-year females in pure mathematics, regardless of race or national origin, then how would we go about finding a representative sample of them? It is impractical to randomly sample from all mathematics programs across the U.S. How would we ensure a sample that represents the entire population in terms of race, nationality, prior mathematical training, and other relevant characteristics? A researcher might sample women from 10 different graduate programs that seem varied "enough" (according to some characteristics) and do some systematic sampling to ensure that women of color and international students are included in proportion to their presence in the population. Although this would not be a truly random sample of the population as a whole, it may be reasonable to believe that the sample is representative of the population in the most important ways. The points here are that sampling is seldom straightforward and that compromises are often necessary.

In some cases, sampling considerations can identify some important biases that limit the interpretations that can be drawn from the research. For example, in a study of male and female undergraduate computer science (CS) majors at Carnegie Mellon University, Jane Margolis and Allan Fisher (2002) reported that male students focus more on programming and female students more on computer applications. "'Dreaming in code' has become one of our working metaphors, emblematic of a male standard of behavior in this computer-oriented world" (p. 5). They further reported that many women students switched out of the CS program within a year or two. But who are the students they studied, and are they representative of females' and males' engagement with computer science more broadly? Lenore Blum and Carol Frieze (2005) point out that the particular sample of CS students in the Margolis and Fisher study "had been admitted under the old guidelines *that were designed (consciously or not) to produce cutting edge programmers for the technology workforce*. Clearly, these guidelines would tend to both favor 'geek' personality types and support the well documented geek culture of computing that had been so prevalent here in years past" (p.112). In a subsequent study, after admissions policies had been revised to emphasize more well-rounded students, Blum and Frieze found that men and women's perspectives were more alike than different. Although both the Margolis and Fisher and the Blum and Frieze reports studied undergraduate CS majors in the same department, the time difference meant that these samples represented different *populations* of CS students, and the observed gender patterns were quite different. Interpretations of either set of findings need to be tempered by understanding these sampling differences, as inferences from the sample to the population as a whole depend on important characteristics of both.

What was actually measured, and do those measures validly and reliably represent the constructs being discussed?

In social science research, it is often impossible to directly measure the constructs we are trying to study. Although many of us may believe we know what we mean by terms such as "ability," "confidence," "attitudes," "intelligence," "interest," and "motivation," it is not at all clear that we share our understandings of these terms, and they can be difficult to operationalize. As in mathematics, we need to proceed from well-defined terms, so that researchers and readers share an understanding of what is being studied. For example, writers often confuse "ability" with performance on a particular set of mathematical tasks (would students show a different set of "abilities" on a different set of tasks?). Confidence and ability are often intermingled in the research literature because researchers describe students' confidence in their abilities and frequently the relationship between confidence and gender, but these terms are often left undefined, and

their gendered connotations and implications are often left unexplored (Burton, 1999). Many social science terms lack broadly accepted definitions, and often these definitions are vague, contested, or even controversial. The *instruments* (e.g., surveys, questionnaires, mathematical tasks, and tests) that are developed to measure these constructs depend on the particular *definitions* that the researchers are using. The key questions are, what are these instruments intended to measure, and how meaningful are the measures they produce?

There are two criteria that social scientists use to evaluate the quality of a measure or a research instrument: its *validity* and its *reliability*. Validity refers to whether the instrument actually measures what it says it does. Reliability refers to whether the information generated by the instrument would be repeated if it were implemented again. There are some fairly sophisticated methods that have been developed to assess various aspects of reliability and validity, which makes this a difficult issue to discuss in detail in an article of this length. However, it is generally accepted that responsible social science research and reporting should provide some evidence of how the researchers assessed the validity and reliability of their measures, either through their own work, or by citing other sources in which those instruments and measures were developed.

For example, gender differences in mean SAT scores and mean scores on other standardized tests have received a fair amount of press attention over recent years. SAT-M scores

NSF-AWM Travel Grants for Women

The objective of the NSF-AWM Travel Grants program is to enable women researchers in mathematics or in mathematics education 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. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians appointed by the AWM.

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, U.S. 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 (DMS) and the Division of Research, Evaluation and Communication (REC) of the NSF. The conference or the applicant's research must be in an area supported by DMS. Applicants must be women holding a doctorate (or equivalent experience) and with a work address in the USA (or home address, in case of unemployed mathematicians). Anyone who has been awarded an AWM-NSF travel grant in the past two years is ineligible. Anyone receiving a significant amount of external governmental funding (more than $2,000 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.

Applications. An applicant should send *five* copies of 1) the AWM Travel Grant Form, where conference name, conference dates and location (city/state/country), and amount of support requested should be provided, 2) a cover letter, 3) a description of her current research and of how the proposed travel would benefit her research program, 4) her curriculum vitae, 5) a budget for the proposed travel, and 6) 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, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. If you have questions, contact AWM by phone at 703-934-0163 or by e-mail at awm@awm-math.org. Applications via e-mail or fax will not be accepted. There are three award periods per year. The next two deadlines for receipt of applications are **February 1, 2007** and **May 1, 2007**.

for boys are often reported to be higher on average than SAT-M scores for girls; a common inference from these results is that boys are more capable in math than girls. However, this conclusion depends on the assumption that the SAT-M is a valid measure of *ability*. While it may be a valid measure of a particular type of mathematical *performance*, there is no evidence that performance on the SAT-M is a valid measure of overall intelligence or of overall mathematical ability. More likely, it is a measure of students' performance in solving a specific type of mathematics task in a fixed time period. In reading reports on gender differences in SAT-M, we need to ask what the SAT-M measures, and how important and relevant that measure is.

In reading any form of educational research, a reader needs to question whether the measures and instruments used are meaningful and whether they give clear evidence in support of the researchers' conclusions.

Do the conclusions clearly follow from a chain of evidence?

Research in most scientific disciplines is characterized by the slow accumulation of evidence. Even in the physical sciences, one study can rarely, if ever, *prove* anything of worth or dramatically alter our understanding of important phenomena, but each new study provides another piece of the puzzle, sometimes in very small but often significant ways. This is true of educational research in particular, where important conclusions can be drawn only after a body of work has consistently explored, supported, and explained a phenomenon under study.

When one study is cited as evidence of an important finding, one of the first questions a reader needs to ask is how consistent the finding is with other research. Is this just one study out of many? What conclusions were reached by other related studies? Do the other studies support, contradict, or otherwise inform the conclusions? Are the conclusions consistent with current scholarship? If not, then is there a clear explanation of the apparent contradiction? How broad are the conclusions? Based on the sample and the study design, what can we fairly generalize, and to whom? Is the source citing one out of a dozen available studies? Is the study recent, or has more current research contradicted, elaborated, or otherwise altered the conclusions? Have the results been replicated, either in the same or different contexts?

For example, a 1983 study by Camilla Benbow and Julian Stanley reported a ratio of 13 boys to 1 girl in the highest levels of mathematical performance, based on scores achieved by seventh graders on the SAT-M. This finding was cited as evidence that boys are innately more able in mathematics than girls and led to dramatic media coverage and a flurry of research on gender differences in

Call for Nominations: 2008 Louise Hay Award

The Executive Committee of the Association for Women in Mathematics has established the Louise Hay Award for Contributions to Mathematics Education, to be awarded annually to a woman at the Joint Prize Session at the Joint Mathematics Meetings in January. The purpose of this award is to recognize outstanding achievements in any area of mathematics education, to be interpreted in the broadest possible sense. The annual presentation of this award is intended to highlight the importance of mathematics education and to evoke the memory of all that Hay exemplified as a teacher, scholar, administrator, and human being.

The nomination documents should include: a one to three page letter of nomination highlighting the exceptional contributions of the candidate to be recognized, a curriculum vitae of the candidate not to exceed three pages, and three letters supporting the nomination. It is strongly recommended that the letters represent a range of constituents affected by the nominee's work. *Five* complete copies of nomination materials for this award should be sent to: The Hay Award Selection Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. Nominations must be received by **April 30, 2007** and will be kept active for three years. For more information, phone (703) 934-0163, e-mail awm@awm-math.org or visit www.awm-math.org. Nominations via e-mail or fax will not be accepted.

mathematics and science. In the 23 years since this single study was published, later research has established other possible causes for gender differences, raising significant concerns about the validity of Benbow and Stanley's conclusions (for an overview, see the statement from AWM President-Elect Cathy Kessel, http://www.awm-math.org/benbow_petition/statement_UNC.html). However, the Benbow and Stanley study is still cited as evidence of innate gender differences. There are several problems with these conclusions: What populations of females and males were represented by the samples included in the study? What evidence do we have that performance on the SAT-M is a valid and reliable indicator of innate ability? And how does this one study retain its salience in light of the body of evidence to the contrary?

Any time we hear a single study indicating an important result, a responsible reader needs to question whether that study is representative of the body of scholarship, and whether more current or more complete information tells a different story.

These questions provide a starting point for the critical reader. I hope they will also help with the reading of other educational research reports, many of which have become prominent and politicized in public discourse on education.

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iWASwondering

The website iWASwondering.org is a project of the National Academy of Sciences intended to showcase the accomplishments of contemporary women in science and to highlight for young people the varied and intriguing careers of some of today's most prominent scientists. The site draws from and accompanies the publication of a ten-volume series of biographies entitled *Women's Adventures in Science,* co-published by the Joseph Henry Press (an imprint of the National Academies Press) and Scholastic Library Publishing. This series intended for middle-school-aged students chronicles the lives of contemporary, working scientists. Despite their varied backgrounds and life stories, these remarkable women all share one important belief: the work they do is important and it can make the world a better place.

Each of the women profiled in the series participated in her book's creation by sharing important details about her life, providing personal photographs to help illustrate the story, making family, friends, and colleagues available for interviews, and explaining her scientific specialty in ways that will inform and engage young readers. The scientists also participated directly in the creation of the website.

The book series and this website would not have been possible without the generous assistance of Sara Lee Schupf and the National Academy of Sciences, an individual and an organization united in the belief that the pursuit of science is crucial to our understanding of how the world works and in the recognition that women must play a central role in all areas of science.

The books in the series are:

Bone Detective: The Story of Forensic Anthropologist Diane France by Lorraine Jean Hopping

Gorilla Mountain: The Story of Wildlife Biologist Amy Vedder by Rene Ebersole

Beyond Jupiter: The Story of Planetary Astronomer Heidi Hammel by Fred Bortz

Strong Force: The Story of Physicist Shirley Ann Jackson by Diane O'Connell

Forecast Earth: The Story of Climate Scientist Inez Fung by Renee Skelton

Space Rocks: The Story of Planetary Geologist Adriana Ocampo by Lorraine Jean Hopping

Robo World: The Story of Robot Designer Cynthia Breazeal by Jordan D. Brown

People Person: The Story of Sociologist Marta Tienda by Diane O'Connell

Gene Hunter: The Story of Neuropsychologist Nancy Wexler by Adele Glimm

Nature's Machines: The Story of Biomechanist Mimi Koehl by Deborah Parks

The website gives links for each scientist featured in the book series, with videos, comics based on the science, and other fun things. There are links for learning more about the science involved in the women's work, and games to play. Learn more about Kismet, the robot that reacts to emotion. Find out how Amy Vedder became the gorilla's best friend. And maybe we can do something to get a woman mathematician on that Time Travel Timeline.

Science Merges Career Resources

AAAS press release

Based on a merger of ScienceCareers.org and *Science*'s Next Wave, the journal *Science* announced a new website in November 2005. It is believed to be the single most comprehensive, freely accessible source of online science-career support currently available for scientists, teachers, students, career counselors and the public.

The debut of free online career support coincides with a sweeping redesign of the *Science* family of websites and the journal's decision to make newly published content on its *ScienceNOW* daily news site freely accessible to the public. The *Science* websites are published by AAAS, the nonprofit science society.

The newly tooled ScienceCareers.org offers job listings, a grants directory and other resources for the many facets of a young scientist's career, all in one place. Free to everyone and easy to navigate, the site also provides career advice, a CV database, meetings and events calendars, information about funding opportunities, advice on cover letters, interviews, career development and more. Users will also find special topic portals, including the Minority Scientists Network and the Postdoc Network.

"The field of science is so important for so many reasons, for international security, economic reasons, but to me most important is it offers the prospect of hugely rewarding, satisfying careers. Yet, it can be a difficult, trying career too. I can think of no better way to advance science and serve society than by helping people interested in science find satisfying careers," Jim Austin, editor of the website, said.

The website's launch occurs along with a new design for the entire family of *Science* sites, which includes the online version of the journal *Science,* the daily news service *ScienceNOW*, *Science*'s knowledge environments on signal transduction ("STKE") and aging ("SAGE KE"), and other resources, as well as the new ScienceCareers.org site.

At *ScienceNOW*, the daily news service, three to five news stories are posted every work day, covering new developments in science research, policy, funding, exploration and technology.

Recent headlines include everything from "Tightwad Primates" to "Nature's Super-Rubber Made in Lab." Users will be able to read these stories without a subscription for four weeks after each story is posted.

"We think *ScienceNOW* is a great device for improving public understanding of science and bringing the latest scientific developments to a much wider audience. We hope the site can be used for teaching purposes and bringing people into science," said Colin Norman, *Science*'s news editor.

Women in Physics

Bob Parks, What's New, *October 13, 2006*

Out of the Shadows: Contributions of Twentieth-Century Women to Physics, edited by Nina Byers and Gary Williams, is an important contribution to the history of science. It is forty stories of women who made major contributions to twentieth century physics, written by distinguished scientists who are themselves actively engaged in the areas of physics about which they write. Cambridge University Press produced a beautiful 500-page volume, and the Sloan Foundation provided a grant that reduced the list price to $35. It cannot be read without a sense of regret at what the world lost by not having greater involvement of women in science. Even today, my freshman physics class averages only 10% women.

Opportunities for Students

Budapest Semesters in Mathematics Program

This program allows third and fourth year undergraduates to spend a semester or year studying mathematics in Budapest, Hungary. Admission criteria are high, but the rewards are great. A semester immersed in the mathematical culture of Budapest is an intellectual adventure of the very first rank. Information, including pictures and an electronic application form, is available online at www.stolaf.edu/depts/math/budapest. Presently, the program can accommodate about 60 students per semester. The application deadlines for fall 2007 and spring 2009 are April 30, 2007 and November 1, 2007 respectively; early applications (by as much as a year) are encouraged.

REUs

The National Science Foundation provides funding for summer Research Experiences for Undergraduates. See the first classified ad for info on the REU at California State University, Chico. Check the web for additional opportunities.

Sujatha Receives Ramanujan Prize for 2006

press release

Professor Ramdorai Sujatha (44), Tata Institute of Fundamental Research (TIFR), received the Ramanujan Prize for 2006. The prize carries the name of Srinivasa Ramanujan (1887–1920), India's greatest mathematical genius of the 19th century. It was established to honor young mathematicians who have conducted outstanding research in developing countries. The second Ramanujan Prize was awarded during a special ceremony in December at the Abdus Salman International Centre for Theoretical Physics (ICTP) in Trieste. Lennart Carleson, the 2006 Abel Laureate, presented the prize to Sujatha.

The Ramanujan Prize is supported by the Norwegian Academy of Science and Letters through the Abel Fund, with the cooperation of the International Mathematical Union. The Abel Fund was created in honor of the great Norwegian mathematician, Niels Henrik Abel.

"The prize thus links the names of two extraordinary mathematicians," says Professor K.R. Sreenivasan, director of the ICTP.

Sujatha received all her education in India and has been with TIFR since 1985, where she is now Associate Professor in the School of Mathematics.

The Ramanujan Prize is awarded to Dr. Sujatha in recognition of her work on the arithmetic of algebraic varieties and her substantial contributions to non-commutative Iwasawa theory. In particular, together with Coates, Fukaya, Kato, and Venjakob, she formulated a non-commutative version of the main conjecture of Iwasawa theory, which now drives much of the work in this important subject.

The international selection committee consisted of Professors Bernt Øksendal (University of Oslo, Norway), Jacob Palis (Instituto de Matematica Pura e Aplicada, Brazil), Peter Sarnak (Princeton, USA), Le Dung Trang (ICTP, Italy) and Srinivasa Varadhan (Courant, USA).

Gender Equity Report

AAUP press release

In October 2006, the American Association of University Professors (AAUP) issued a new report: *AAUP Faculty Gender Equity Indicators 2006.* The report provides data on four specific measures of gender equity for faculty at over 1,400 colleges and universities across the country. The individual campus listings included in the report will serve to promote discussion of faculty gender equity at the local level, where the success of existing strategies to improve the situation of women academics can best be evaluated. In this way, the AAUP hopes to move discussions about the full participation of women as faculty from the realm of abstract goals into concrete actions for improvement.

This report is the latest in a series of AAUP initiatives aimed at improving the status of women faculty, dating from the formation of AAUP's Committee W on the Status of Women in College and University Faculties in 1918. Over the intervening decades there has been considerable progress—yet equity remains elusive. Thirty-four years after Congress passed Title IX in 1972, prohibiting sex discrimination in education, women earned more than half of all graduate degrees awarded in 2004. Yet, among other findings, the AAUP report indicates that women occupied about 9 percent of full professor positions at four-year colleges and universities in 1972, and were still only 24 percent of all full professors in 2003.

The four indicators compared in the report for men and women faculty are employment status (full- and part-time), tenure status for full-time faculty, promotion to full professor rank, and average salary for full-time faculty. The report consists of three sections: the article "Organizing Around Gender Equity," authored jointly by Professor Martha S. West of the University of California, Davis and John W. Curtis, AAUP Director of Research and Public Policy; aggregate national tables for each of the four equity indicators by type of institution; and an appendix listing the four indicators for each individual college and university. Data for the report are drawn primarily from the AAUP Faculty Compensation Survey, with additional data on part-time faculty from the US Department of Education.

The report is available online at http://www.aaup.org/AAUP/pubsres/research/geneq2006.

IT Career Choices

Virginia Tech press release by Jean Elliott

A Virginia Tech team of researchers has identified five factors that influence girls' informational technology (IT) career choices. Backed with more than $882,000 in funding by the National Science Foundation, the statewide project "Women in Information Technology: Pivotal Transitions from School to Careers" evaluates the impact of family, peers, school, and community on girls' perceptions of IT careers.

The resultant statistics/DVD/Facilitator's Guide are the culmination of four years of research by three scholars in the College of Liberal Arts and Human Sciences: Carol Burger, director of the Science and Gender Equity Program; Elizabeth Creamer, associate professor in the School of Education; and Peggy S. Meszaros, director of the Center for Information Technology Impacts on Children, Youth and Families.

The Virginia Tech research demonstrates that high school and college women who express an interest in a computer-related career share five central characteristics.

- First, these women tend to be minorities, including African Americans, Asian Americans, Hispanic Americans, Native Americans, and multiracial Americans.
- Second, they perceive that their parents support this career choice, with the mother being particularly influential.
- Third, these women use computers at an early age, for a variety of communication and information purposes, and, unlike their male peers, typically not for computer games.
- Fourth, these women have a positive view of IT professionals and tend not to think of a computer-related career as only for "nerds" or "geeks."

- The last quality these women share is that they have not discussed career options with a variety of people. In fact, those who sought more information were least likely to choose IT careers.

Using a path analysis model, the researchers determined these influencing factors after conducting telephone interviews and three rounds of surveys with 1,026 girls and women across the state of Virginia at rural and urban high schools (Pulaski, Wytheville, Giles, Fairfax and Hampton), and a variety of community colleges and universities (New River Community, George Mason University, Norfolk State, Old Dominion, and Virginia Tech).

"The results of this study will provide educators, policy makers, and administrators with a major dissemination product," said Meszaros. "Up until now, there have been no career resources for women that have considered the simultaneous impact of numerous factors on career interest in IT." Sally K. Ride, former NASA shuttle veteran and now an education consultant, was enthusiastic about the results and the end product after viewing it at a National Science Foundation meeting.

The Virginia Tech research project was guided by Marcia Baxter Magolda's (Miami University, Ohio) theoretical framework of self-authorship, which is a way of collecting, interpreting, and analyzing information in order to form judgments. This is the first time that Magolda's theory base has been extended beyond a college population. This interdisciplinary research team has also collected data from students in Korea, Australia, and New Zealand. "Analysis of these data will allow us to test our model across cultures," Burger said.

"Girls with an emerging sense of self-authorship are able to consider multiple viewpoints about career options and to weigh information in the light of growing awareness of a sense of self," said Creamer. "They can listen to diverse viewpoints without being unduly influenced by them." The DVD likens this view to a tandem bicycle, with the girl guiding her decisions in the front with the support of the stoker (parent, partner, advisor) in the back.

In just five years, the Center for Information Technology Impacts on Children, Youth, and Families has raised over $1.8 million in research funding from external sources, including the National Science Foundation, the Virginia Tobacco Settlement Foundation and the Department of Education. This funding has provided support for numerous graduate students, national and international conference presentations and papers, and growing visibility for its research. The Center has worked to expand partnerships and Center affiliates and has also garnered industry support. Along with support that the three investigators received from two National Science Foundation programs, Microsoft, Cisco Systems, and Texas Instruments provided support for a four-day international conference in Oxford, England, in August, where the NSF video made its international debut.

The video debuted in the U.S. in November 2005. The Facilitator's Guide to accompany the DVD was piloted in Spring 2006.

New Numbers on Non-Tenure-Track Faculty

AAUP press release

In a report released in December 2006, the American Association of University Professors (AAUP) provides new data to document the increasing predominance of non-tenure-track faculty in America's colleges and universities. The *AAUP Contingent Faculty Index 2006* provides data specific to individual college and university campuses on the number of full-time faculty with and without tenure, the number of part-time faculty, and the number of graduate student employees. Together, the categories of contingent faculty—both full- and part-time faculty whose positions are not on the tenure track—comprised 65 percent of all faculty in 2003, and their numbers continue to grow. Because academic freedom for contingent faculty members is not assured, and because contingent instructors are generally not provided with the level of institutional support required to deliver a quality education, the emergence of a contingent faculty represents a fundamental change in the nature of higher education.

The new report draws on figures submitted by institutions to the US Department of Education's IPEDS database for fall 2005 and makes those data easily accessible at the campus level for the first time. The Index is divided into three sections: an article "Consequences: An Increasingly Contingent Faculty" by John W. Curtis and Monica F. Jacobe details the working situations contingent faculty face under various employment conditions, and the consequences for the quality of higher education of an increasingly contingent faculty; aggregate tables provide a breakdown on the use of both full- and part-time faculty by institutional category at the national level; and four appendices provide institution-specific data on over 2,600 colleges and universities. The objective of the report is to provide comparable data at the campus level, enabling faculty, students, administrators, governing board members, and the general public to participate in local discussions about the impact of contingent faculty employment on the quality of higher education.

Archimedes' Palimpsest

Stanford Linear Accelerator Center press release, by Heather Rock Woods

For five days in May 2005, the ancient collided with the ultra-modern at the Stanford Linear Accelerator Center (SLAC), revealing brilliant, long-hidden ideas with X-ray light. A synchrotron X-ray beam at the Department of Energy facility illuminated an obscured work—erased, written over and even painted over—of ancient mathematical genius Archimedes, born 287 B.C. in Sicily.

Legend has it that Archimedes, upon displacing water in his tub and realizing he had found a way to measure volumes, leapt out of the bath and ran naked through the streets shouting "Eureka!" (I have found it!). He also conceived a way to calculate π. Archimedes did not just take steps toward calculus, as formerly believed; he actually created and used calculus methods, the basis for modern engineering and science. He is also credited with designing fearsome war weapons, such as claws that pulled attacking boats from the water.

Archimedes' amazingly advanced ideas have been lost and found several times throughout the ages. Now scientists are employing modern technology—including X-ray fluorescence at SLAC's Stanford Synchrotron Radiation Laboratory (SSRL)—to completely read the Archimedes Palimpsest, the only source for at least two previously unknown treatises by Archimedes.

The palimpsest is a 1,000-year-old goatskin parchment containing Archimedes' work as copied by a 10th century scribe. Two centuries later, with parchment harder to come by, the ink was erased with a weak acid (like lemon juice) and scraped off with a pumice stone, and the parchment was written on again to make a prayer book.

One of the most intractable problems was seeing the original ink on four pages that had been painted over with Byzantine religious images, which turned out to be 20th century forgeries intended to increase the value of the prayer book. An X-ray system recently showed it was possible to penetrate the paintings. At SSRL, the assembled team practically jumped with excitement as the original writing beneath one painting was unveiled on the computer screens. Archimedes' hidden text deals with floating bodies and the equilibrium of planes.

A page studied at SSRL contains an introduction to the only copy of Archimedes' Method of Mechanical Theorems, where the genius showed how he arrived at his theorems. As ancient Greek cursive—mingled with the religious text—appeared on a screen, Stanford Classics and Philosophy Professor Reviel Netz began decoding the Archimedes text. He uses the four layers of text from the synchrotron images, which simultaneously register the scientific and religious texts from both sides of the parchment page, and multispectral images to build a picture of the 10th century pen strokes and rule out the curves and lines made two centuries later.

An anonymous private collector who bought the palimpsest for $2 million at auction in 1998 has loaned the manuscript to the Walters Art Museum and is funding the studies. Researchers also come from RB Toth Associates, Rochester Institute of Technology, Johns Hopkins University, ConocoPhillips and Rutgers University. The team plans to decipher the entire text, catalog and transcribe it digitally, and create an interactive DVD. They will then exhibit a few pages in 2008 before returning the irreplaceable parchment to its owner.

Ed. Note: For further information, see: http://www2.slac.stanford.edu/tip/2005/may20/archimedes.htm, http://www.archimedespalimpsest.org/, and http://www.exploratorium.edu/archimedes/.

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NSF REU (Research Experience for Undergraduates) at California State University, Chico — Possible topics include Knot Theory, Number Theory, and Mathematical Modeling. Dates: June 18 July 27. Support: $2500 plus travel and housing. Application Deadline: March 1. Applicants must be US Citizens or permanent residents intending to continue undergraduate studies in the fall. Women and students from underrepresented minorities are particularly encouraged to apply. See **http://www.csuchico.edu/math/mattman/REUT.html** or contact **Sergei Fomin, SFomin@CSUChico.edu**.

CALIFORNIA STATE UNIVERSITY, LONG BEACH — Mathematics Education. Asst/Assoc. Professor, Department of Mathematics & Statistics, California State University, Long Beach. (**http://www.csulb.edu/depts/math/**) Qualifications: doctorate mathematics education w/ equivalent of master's degree in math, or doctorate in mathematics w/ scholarly work & experience in math ed. Record or evidence of potential for effective teaching & scholarly activity in math ed. Significant involvement with K-12 math classrooms. Responsibilities: Teach courses in Dept's Graduate Program in Mathematics Education. Teach content & methods courses for students preparing to teach math in middle & HS, supervise math student teachers/interns, as needed Teach math content courses for students preparing to teach math K-8. Establish & maintain program of scholarly activity in the field of mathematics education. For more information see: **http://www.csulb.edu/divisions/aa/personnel/jobs/posting/201/index.html**.

CASE WESTERN RESERVE UNIVERSITY — Department of Mathematics, Case Western Reserve University, 10900 Euclid Avenue, Cleveland, Ohio. Tenure-track and temporary positions. Open rank, however appointment at the rank of assistant professor is strongly preferred. Tenure track in area of numerical analysis/scientific computing to enhance Department program. For more information, see **http://www.case.edu/artsci/math/employment.htm**. The successful tenure-track candidate will hold the Ph.D. or equivalent and have, relative to career stage, a distinguished record of publication, research, service, and teaching. Compensation commensurate with qualifications. Applications will be considered on receipt; applications will be accepted until position is filled. Electronic applications to: James Alexander, **math-faculty-position@cwru.edu**, consisting of a letter of application, AMS cover sheet, CV, and have three letters of reference sent. Case is a recipient of an NSF ADVANCE institutional transformation grant to increase the participation of women in science and engineering. Case Western Reserve University is committed to diversity and is an affirmative action, equal opportunity employer. Applications from women or minorities are especially encouraged.

GRAND VALLEY STATE UNIVERSITY — Grand Valley State University, an Affirmative Action/Equal Opportunity Institution in Allendale, Michigan, is accepting applications for the position of Postdoctoral Teaching Fellow in Mathematics, with employment to begin in August 2007. Candidates from groups underrepresented in mathematics are especially encouraged to apply. Required qualifications include a doctorate in the Mathematical Sciences or Mathematics Education by August 2007, completed no earlier than May 2004; demonstrated interest in teaching undergraduate mathematics or mathematics education; and commitment to continued scholarly and professional growth. 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 on February 9, 2007 and continue until the position is filled or the search is closed. Recruitment for this position is subject to the availability of funding.

PURDUE UNIVERSITY — Faculty Positions in Statistics — The Department of Statistics at Purdue University invites applications for tenure-track positions beginning August 2007. A number of positions are available at the Assistant Professor level; senior positions will be considered for highly qualified applicants. Applications from outstanding candidates in all areas of statistics will be considered. Of particular interest to the Department are candidates with a research record in the areas of high dimensional data. Also, the area of bioinformatics and the area of spatial statistics are part of a College of Science-wide hiring effort, COALESCE, and applicants in these areas should address the multidisciplinary contributions of their work in their research statements. The Department of Statistics offers a stimulating and nurturing academic environment. More than thirty tenured and tenure-track faculty members direct research programs in a broad range of areas. Further information about the department is available at: **http://www.stat.purdue.edu**. Information about the College of Science multidisciplinary hiring effort and its targeted areas can be found at: **http://www.science.purdue.edu/COALESCE**. All applicants should hold a PhD in Statistics, or a related field, be committed to excellence in teaching, and have demonstrated strong potential for excellence in research. Salary and benefits are highly competitive. Please visit: **https://applications.science.purdue.edu/statistics/** to apply online or to see where hard copy application documents can be sent. Applicants matching one search may be considered in other relevant searches when appropriate. Review of applications will begin on December 1, 2006, and will continue until the positions are filled. Purdue University is an Equal Opportunity/Equal Access/Affirmative Action employer and is committed to building a diverse faculty of excellence.

TOWSON UNIVERSITY — Assistant Professor, Mathematics Education, Department of Mathematics, Fisher College of Science and Mathematics. Applicants are invited to apply for a tenure-track position in mathematics education at the rank of Assistant Professor beginning Fall 2007. Applicants must have an earned doctorate in mathematics education or mathematics, with experience in K-12 education. The salary is competitive. Applicants must possess a commitment to teaching, an active research program, the ability to teach a variety of courses (at both the undergraduate and graduate levels), some of which require the use of educational technology, and an interest in seeking outside funds. The Department of Mathematics (**http://www.towson.edu/math**) offers bachelor's degree programs in pure mathematics, applied mathematics, actuarial science and risk management, and mathematics education. Master's degree programs are offered in applied and industrial mathematics, and mathematics education. Applicants should submit a letter of application, a resume, a description or research, a statement of teaching experience and philosophy, and copies of all graduate transcripts. Additionally, three letters of recommendation, addressing both teaching and research should be sent to: Dr. Wei Sun, Chairperson, Search Committee, Department of Mathematics, Towson University, 8000 York Road, Towson, MD 21252-0001. Applications or materials sent by e-mail will not be considered. Priority will be given to applications received on or before **January 12, 2007**.

UNIVERSITY OF MARYLAND AT COLLEGE PARK — Chair of the Mathematics Department — The College of Computer, Mathematical and Physical Sciences at the University of Maryland is conducting a national search for the next Chair of its Mathematics Department. The Chair will be expected to lead one of the best research and teaching departments in the country to even greater strengths and reputation, while maintaining a personal research program commensurate with the status of a leading mathematician. The search seeks to identify a candidate who will offer leadership, innovation and imagination in working with faculty, students and staff to raise the department's education programs and its research profile. In their letter of application candidates should address their qualifications for this responsibility, and their sense of the direction and opportunities appropriate for a department of this caliber. The Mathematics Department is currently ranked 8th among public universities, and its faculty include a Fields medalist, a Wolf Prize winner, a Japan Prize winner, and numerous Sloan Fellows. With 66 professorial faculty, 24 non-tenured lecturers, 232 graduate students, 324 undergraduate majors and a staff of 12, it offers undergraduate degrees and graduate programs in Mathematics and Statistics, and a professional masters program

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in the Mathematics of Advanced Industrial Technology. It also jointly administers an interdisciplinary graduate program in Applied Mathematics and Scientific Computation. The faculty conduct research across a broad spectrum of the mathematical sciences, including, but not limited to: Algebraic Geometry and Number Theory, Applied and Computational Harmonic Analysis, Chaos and Computational Dynamics, Dynamical Systems, Geometry and Topology, Logic, Numerical Analysis and Computation, Partial Differential Equations and Applications, Probability and Statistics (including Applied Statistics), and Representation Theory. For best consideration, apply by **January 1, 2007** by sending a letter of application, a curriculum vitae and the names of at least five references to: Mathematics Chair Search Committee, c/o Ms. Chris Fuller, 3400 A.V. Williams Building, CMPS Dean's office, University of Maryland, College Park, MD 20742. The combination of referees should be able to address your leadership ability, your approach to undergraduate and graduate education, and your research accomplishments. The University of Maryland is an AA/EEO employer and is actively seeking applications from women and minority candidates.

UNIVERSITY OF WISCONSIN, MADISON — Assistant Professor, Image Analysis — The Department of Biostatistics and Medical Informatics at the University of Wisconsin-Madison currently has a tenure track faculty opening for summer/fall of 2007 (PVL #52423). Candidates must have a PhD in Computer Science, Biostatistics or Statistics with expertise in analysis of medical image data. Applicants should submit curriculum vitae, a statement of research objectives, sample publications and arrange for at least three letters of reference to be sent directly to: Hiring Committee, PVL #52423, c/o Dept. of Biostatistics & Medical Informatics K6/444 CSC, Box 4675, 600 Highland Ave., Madison, WI 53792-4675. Additional information is available at: **http://www.biostat.wisc.edu** under overview/employment. Application deadline is **February 15, 2007**. UW-Madison is an AA/EOE.

UNIVERSITY OF WISCONSIN, MADISON — Assistant/Associate Professor, Biostatistics — UW-Madison, Department of Biostatistics and Medical Informatics currently has a tenure-track faculty position for summer/fall of 2007. PhD in Biostatistics or Statistics required. A joint appointment with the Department of Statistics is possible. Submit curriculum vitae, research objectives statement, sample publications and three reference letters to: Hiring Committee, PVL #54738, c/o Dept. of Biostatistics & Medical Informatics, K6/444 CSC, Box 4675, 600 Highland Ave., Madison, WI 53792-4675. More info: **http://www.biostat.wisc.edu** under overview/employment. Deadline is **2/15/07**. UW-Madison is an AA/EOE.

WAKE FOREST UNIVERSITY — Applications are invited for a tenure track position in computational mathematics at the assistant professor level beginning August 2007. Duties include teaching at the undergraduate and graduate levels and continuing research. A Ph.D. in mathematics or a related area is required. Research areas such as numerical analysis, numerical linear algebra, numerical optimization, numerical solution of differential equations, and other areas in computational mathematics will receive first consideration. The department has 18 members and offers both a B.A. and B.S. in mathematics, with an optional concentration in statistics, and a B.S. in each of mathematical business and mathematical economics. The department has a graduate program offering an M.A. in mathematics. Applicants are encouraged to submit an AMS cover sheet, a cover letter, complete curriculum vitae, research statement, teaching statement and at least 3 letters of recommendation using the service provided by the AMS at **http://www.mathjobs.org**. Hard copy can be sent to: Stephen Robinson, Department of Mathematics, Wake Forest University, P.O. Box 7388, Winston-Salem, NC 27109-7388. AA/EO employer.

YORK UNIVERSITY — Applications are invited for one tenure-track appointment in Statistics at the Assistant Professor level in the Department of Mathematics and Statistics, Faculty of Science and Engineering, to commence July 1, 2007. The successful candidate must have a PhD, a proven record of independent research excellence, and evidence of potential for superior teaching. Preference will be given to candidates who can strengthen existing areas of present and ongoing research activity. The successful candidate should be suitable for prompt appointment to the Faculty of Graduate Studies. All positions at York are subject to budgetary approval. Applications must be received by January 16, 2007. Applicants should send a curriculum vitae, an outline of their research plan and a description of teaching interests, and arrange for three letters of recommendation (one of which should address teaching) to be sent directly to: Statistics Search Committee, Department of Mathematics and Statistics, N520 Ross, York University, 4700 Keele Street, Toronto, Ontario, M3J 1P3 Canada, **stat.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.

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