AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

Volume 37, Number 5 NEWSLETTER September–October 2007

President's Report

AWM Members:

In July, Pauline van den Driessche gave the first Olga Taussky Todd Lecture at the International Council for Industrial and Applied Mathematics Meeting in Zürich. I heard that the talk was great—and it was followed by a reception with free T-shirts! This event was sponsored by AWM and European Women in Mathematics and funded by Google. We hope to co-sponsor the second Taussky Todd Lecture in 2011.

At the same meeting, Ingrid Daubechies and Heinz Engl received the Pioneer Prize for "pioneering work introducing applied mathematical methods and scientific computing techniques to an industrial problem area or a new scientific field of applications."

AWM is now an associate member of the International Council for Industrial and Applied Mathematics. Barbara Keyfitz led the initiative for having AWM become an ICIAM member and will now be our first representative to ICIAM. Thank you, Professor Keyfitz!

At the end of July, I attended the second Workshop on Diversity at the Banff International Research Station. The participants included Kyewon Park, president of Korean Women in Mathematical Sciences, as well as mathematicians from the United States, Sweden, Brazil, and, of course, Canada.

An international perspective is often helpful. Although childcare was a particular concern for some participants, especially for those from the United States, others remarked that it wasn't quite such a concern for them. Part of this, of course, depends on whether childcare is readily available. In some countries, women (and men) tend to get jobs where they grew up, thus childcare may be present in the form of nearby grandparents, siblings, and other relatives. Childcare in some countries, like France, is available in a variety of forms and is supported by

IN THIS ISSUE

the government. In contrast, the U.S. government does not provide general support for childcare, thus support must be sought for particular circumstances—such as travel to mathematics meetings. Unfortunately, the AWM travel grants (which are funded by the National Science Foundation) cannot fund childcare expenses, due to the regulations of the Office of Management and Budget which oversees NSF.

Bias and its various forms was another topic that received a lot of discussion at the BIRS workshop. Sometimes the same action, piece of work, or document is judged differently, depending on perceived characteristics of its author such as gender, race, or ethnicity. This phenomenon has been documented in several experimental studies. One was described by the psychologist Virginia Valian in an appearance on the Jim Lehrer News Hour (I've edited the transcript slightly):

> In one experiment, investigators showed undergraduates photographs of other undergraduates that had been taken around campus, always next to a reference point of some sort like a doorway or a table, and the undergraduate's job was simply to say how tall is each of the persons whom they saw pictured.
>
> Unbeknownst to the students who were doing the estimating, for every man of a given height there was a woman of the same height. Yet the students, both males and females, slightly overestimated how tall the men were and slightly underestimated how tall the women were.

This experiment (Biernat, Manis, and Nelson, 1991) and others with similar findings are described in Valian's book *Why So Slow?*

Bias in evaluation has also been documented in real-life settings and, shockingly, among scientists. A famous example is a study of applications for post-doctoral fellowships submitted to the Swedish Medical Research Council. Applications consisted of a curriculum vitae, a bibliography, and a research proposal, also mention of any affiliation with a committee member (such as having been a Ph.D. advisee). Each committee member (except when affiliated with the applicant) scored each application with respect to several categories. On average, women's applications received particularly low "scientific competence" scores. Agnes Wold (an immunologist) and Christine Wennerås (a microbiologist) made a statistical analysis of the 114 applications and their scores. Three factors were independent determinants of scientific competence scores:

- scientific productivity (number of articles, citations, and the like).
- gender (men received higher scores than women with the same productivity).
- affiliation with a review committee member (affiliated applicants received higher scores than non-affiliated applicants with the same productivity).

On average, the "extra" competence points awarded to men corresponded to approximately 20 scientific publications in excellent specialist journals or three publications in general scientific journals such as *Nature* or *Science*.

Wold and Wennerås's analysis was published in *Nature* in 1997 under the title "Nepotism and Sexism in Peer Review" and caused quite a stir. It also caused changes in the Swedish Medical Research Council review process and studies of other such processes in the European Union. These are described in Chapter 4 of the European Commission report *Science Policies in the European Union*. In the U.S., the RAND Corporation has recently issued *Gender Differences in Major Federal External Grant Programs,* which discusses NSF and other agencies. The RAND study found no gender differences in NSF funding, when the analysis controlled for investigator characteristics such as experience or institution type. However, a cursory glance indicates that the study (large scale), the data (investigator proposing and funding history), and the variables other than gender (e.g., number of investigators, subagency or program, type of grant, funding requested) are quite different from those used by Wold and Wennerås. The report notes, "None of the agencies capture information about the proposals—e.g., topics, scores from peer review—but they do provide information that likely relates to credentials." This seems to leave open the possibility that a study of NSF proposals and scores might come to a conclusion different from that of the RAND report.

Bias may also occur in letters of recommendation. For example, a letter might say: "I really admire Martha. She is always smiling. She looks after her son, bakes for our department colloquia, and still finds time to do research!" This was part of a scenario based on real examples presented by Gail Ratcliff at an AWM workshop (see Allyn Jackson's article in the August 2004 *Notices of the American Mathematical Society*). After reading about Martha, one of the workshop participants said, "John is always smiling"—and the whole group laughed. Why was that funny? We wouldn't expect a letter of recommendation to tell us whether John is always smiling or not—if John is applying for a job in a mathematics department. But, somehow it was important to Martha's

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.

recommender to let Martha's potential math department colleagues know that Martha is always smiling. Personal experiences and systematic studies such as *"The Color of Glass"* (Trix and Psenka's analysis of more than 300 letters of recommendation for medical faculty members) suggest that Martha's letter is not an anomaly.

In 1990, Neal Koblitz published an article in this newsletter called "Are Student Ratings Unfair to Women?" He remarked, "To my surprise, it turns out that quite a lot has been written on this question, but not in journals that mathematicians normally read." The article makes an important point: Women can and do receive higher student ratings than men—under certain conditions. Those conditions seem to include being a competent teacher (as one would hope). Unfortunately, they also seem to include traditional expectations for women: being perceived as caring, lenient, and sensitive to people's needs. The latter may be difficult to achieve in several situations that are common in mathematics departments: teaching service courses and teaching poorly prepared students. In these situations—for example, in mathematics courses for preservice elementary teachers—students often perceive their instructors as harsh graders or uncaring. There is considerable evidence that in such circumstances women receive lower student ratings than men.

Koblitz's article got a lot of use. In the 1999 *Notices of the American Mathematical Society,* Jean Taylor and Sylvia Wiegand wrote, "Koblitz's article has been widely circulated by women mathematicians, who have found it useful in conversations with chairs, deans, and other administrators, not to mention graduate students and their fellow mathematicians." The article is now on the AWM Web site (www.awm-math.org/newsletter.html) and has been reprinted in Bettye Anne Case and Anne Leggett's book *Complexities.*

Until recently, it often seemed that the onus was placed on individual women mathematicians to inform their department chairs and other administrators about practices likely to produce bias and barriers. It is my hope that outcomes of the BIRS workshops will help to shift this burden from individual faculty members to department chairs and other administrators.

Cathy Kessel
Berkeley, CA
August 2, 2007

AWM

ASSOCIATION FOR WOMEN IN MATHEMATICS

AWM ONLINE

AWM Web Editor
Holly Gaff
hgaff@epi.umaryland.edu

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

Alice T. Schaefer Prize: October 1, 2007
NSF-AWM Travel Grants: October 1, 2007 and February 1, 2008
AWM Noether Lecturer: October 2007
AWM-SIAM Kovalevsky Prize Lecturer: November 1, 2007
Ruth I. MIchler Memorial Prize: Nov, 1, 2007
AWM Essay Contest: November, 2, 2007
AWM Workshop, SIAM: January 14, 2008
NSF-AWM Mentoring Travel Grants: February 1,2008
Sonia Kovalevsky High School Mathematics Days: February 4, 2008

AWM OFFICE

Jennifer Lewis, Managing Director
DeeJay Garringo, Membership Director
11240 Waples Mill Road, Suite 200
Fairfax, VA 22030
phone: 703-934-0163
fax: 703-359-7562
awm@awm-math.org

Subsidized Childcare Services a JMM

"Love it! And the boys do too!"

The American Mathematical Society and the Mathematical Association of America are pleased to announce that for the fourth year they are offering and significantly subsidizing childcare services at the Joint Mathematics Meetings (JMM)—next in San Diego, CA, January 6–9, 2008. The childcare will be offered to parents through KiddieCorp, an organization that has been providing high quality programs for children of all ages at meetings throughout the U.S. and Canada since 1986.

Parents registered as participants at JMM can take their children for a fun few days and still enjoy the meeting. While attendees are in sessions KiddieCorp will engage children in popular tried and true games and activities including arts & crafts, music & movement, board games, story time, and dramatic play. The program offers theme activities for the older children, specially designed so that children can make friends easily in a comfortable, safe and happy environment.

The feedback on the service is enthusiastic: "Very convenient and useful. I hope it will continue to be offered." "I really appreciated the service." "Wonderful! Please do it again!"

The dates and times for the program are Sunday through Wednesday, January 6-9, 2008, 8:00 a.m. to 5:00 p.m. each day, and it will be located at the San Diego Marriott Hotel. The childcare services provided at the JMM are for children ages 6 months through 12 years old. Space per day will be limited and is on a space available basis. Parents are encouraged to bring snacks and beverages for their children but items such as juice boxes, cheerios and crackers will be provided. KiddieCorp can arrange meals for children at cost plus 15%, or parents can be responsible for meals for their children.

Registration will be open in September 2007, with deadline of **December 9, 2007**. Availability is limited and handled on a first-come, first-served basis. The registration fee is $30 per family (nonrefundable), plus $9 per hour per child, $7 per hour per child for graduate students. Full payment is due at the time of registration with KiddieCorp. To learn more about the service, policies regarding cancellation and late child pick-up fees, and to register, go to https://www.kiddiecorp.com/jmmkids.htm or call KiddieCorp at (858) 455-1718 to request a form.

Come to the Joint Mathematics Meetings in San Diego, January 6-9: Meet old and new colleagues, attend sessions, visit the exhibits—and bring your children!

AWM Slate!

We are pleased to include here the slate announced earlier at the AWM website for this fall's AWM election. **Georgia Benkart** (University of Wisconsin) has been nominated to serve as President-Elect. **Rebecca Herb** has been nominated to continue her service as Treasurer. **Sylvia Bozeman** (Spellman College), **Beverly Diamond** (College of Charleston), **Sharon Frechette** (Holy Cross), **Sarah Greenwald** (Appalachia State University), **Ruth Haas** (Smith College), **Claudia Polini** (Notre Dame), **Ami Radunskaya** (Pomona), and **Lisa Traynor** (Bryn Mawr) have accepted nominations for Member-at-Large; four will be elected.

Thanks to the Nominating Committee (Carolyn Gordon, chair, Helen Grundman, Vicki Howle, Dorina Mitrea and Linda Rothschild) for their efforts in producing this fine slate of candidates.

Education Column

Pat Kenschaft, Distinguished Visiting Professor of Mathematics, Bloomfield College, NJ, and Professor Emerita, Montclair State University

The "No Child Left Behind" Act

The NCLB, as it is now commonly called, is up for renewal in 2007, but many believe the renewal may be delayed. So there is still time for concerned citizens to learn about it and take action.

NCLB mandates all states to require all their children in public schools to take a standardized test in mathematics and language in grades 3, 4, 5, 6, 7, 8, and 10. Each state determines what level is "proficient," but every school must have an increasing number of proficient students each successive year so that all children will be proficient by 2014. There are 40 categories on which a school is rated, provided it has enough children in that category, and if any one of these repeatedly does not make Adequate Yearly Progress (AYP), the school is subject to penalties, which can be severe. Some states require individuals to pass the test to be promoted to the next grade.

I became personally concerned with the effect of standardized tests after the students who had emerged from their sieve reached me at Montclair State. From what I can tell, the tests given by New Jersey are as good as any. Yet, my students became far more attached to key words than their predecessors; key words increase standardized test scores. The municipality of Montclair has paid for an expensive program to prepare students for the eighth grade test that teaches, "If you see the word 'each,' multiply." (If I plan to distribute ten grapes equally between two children, how many does each child get?)

When I heard that a nearby district had abolished music and art to make more time for "mathematics" (if that word could be defamed by the subject actually taught), I knew that standardized tests had spun out of control. When I read that a more distant district had abolished all social studies to devote more time to math and English, I knew that our country is marching down a very dangerous path.

There is no certification process for those who make up tests, either by states (as for teachers and cosmetologists) or by a professional organization (as for doctors, lawyers, and actuaries). A group of leading mathematicians examined many

Call for Nominations: The 2009 Noether Lecture

AWM established the Emmy Noether Lectures to honor women who have made fundamental and sustained contributions to the mathematical sciences. This one-hour expository lecture is presented at the Joint Mathematics Meetings each January. Emmy Noether was one of the great mathematicians of her time, someone who worked and struggled for what she loved and believed in. Her life and work remain a tremendous inspiration.

The mathematicians who have given the Noether lectures in the past are: Jessie MacWilliams, Olga Taussky Todd, Julia Robinson, Cathleen Morawetz, Mary Ellen Rudin, Jane Cronin Scanlon, Yvonne Choquet-Bruhat, Joan Birman, Karen Uhlenbeck, Mary Wheeler, Bhama Srinivasan, Alexandra Bellow, Nancy Kopell, Linda Keen, Lesley Sibner, Ol'ga Ladyzhenskaya, Judith Sally, Olga Oleinik, Linda Rothschild, Dusa McDuff, Krystyna Kuperberg, Margaret Wright, Sun-Yung Alice Chang, Lenore Blum, Jean Taylor, Svetlana Katok, Lai-Sang Young, Ingrid Daubechies, and Karen Vogtmann.

The letter of nomination should include a one-page outline of the nominee's contribution to mathematics, giving four of her most important papers and other relevant information. *Five* copies of nominations should be sent by **October 15, 2007** to: The Noether Lecture Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. If you have questions, phone 703-934-0163, e-mail awm@math.umd.edu. Nominations via email or fax will not be accepted.

state eighth grade standardized tests and concluded that in many states, "more than 25% of the problems were not well-posed or had other difficulties."[1] They document many misleading statements and downright errors in the statement of problems. Nobody has access to the answers or grading process, so we can only guess about how flawed they are.

"The worst effect of standardized testing is that it drives the best teachers out of teaching. They can get good jobs elsewhere, and they want to be able to be creative if they are to be teachers," claims Walter Haney, senior Research Associate at the Boston College Center for the Study of Testing.[2] A recent estimate is that half of new teachers leave the profession after five years.[3] Anecdotal evidence suggests that standardized tests play a major role in this. Another study indicates that there are three or four times as many credentialed teachers in the United States as there are jobs. "Producing more teachers is like spending all our energy filling a leaky bucket instead of fixing it."[4]

Good teachers need to be professionals. Jonathan Kozol in *Shame of a Nation* bemoans the extent to which programmed teaching designed to prepare children to improve their performance on standardized tests is so deadening to talented teachers who have courageously gone to impoverished cities that they leave at alarming rates, depriving the children who need individualized attention the most of getting it.[5] Charles Murray, with whom I often disagree, wrote in a *Wall Street Journal* op-ed piece that the best English teacher in his local public high school had left saying he wanted to teach writing, not how to prepare students to score high on tests designed to measure whether they could write.[6]

Murray primarily lamented the neglect of our country's future leaders as a result of NCLB. When schools are judged by the percentage of their students that pass the test, the disincentives are great for "squandering" resources on those who are sure to pass, or sure not to pass. The former group includes a majority of future college math majors, so AWM members have a selfish reason to be concerned about this.

In Montclair, parents complain about the extent to which the public school system is neglecting gifted youngsters recently. I'm sure the problem is not just local.

Another effect of these high-stakes tests may be the unconscionable number of today's young people who fail to graduate from high school. Exactly how many is the topic of passionate statistical debates, but the ETS has thrown its lot with a study that concludes about a third of today's cohort are not graduating from high school.[7] Studies indicate that *students who repeat two grades have less than a ten percent chance of completing high school*.[8] The military (at least until its recent crisis) insisted upon a diploma as a minimal requirement, as do many careers. When I was young, about a fifth of my age cohort did not graduate from high school, and they had access to many unionized factory jobs with middle class salaries that have since vanished.

How much is all this costing us? That may be even harder to estimate than the number of students dropping out of high school. Not only are the costs spread among every school district and state government in the country, but the budgets of test-making and test-preparation companies are hidden in

---

[1] James Milgram, *The Mathematics Pre-Service Teachers Need to Know,* 2005, p. 97. Available free via a google search. http: //math.stanford.edu /ftp/milgram/T-1I-book.pdf.

[2] Math Medley, April 29, 2000, "Testing the Testing Business."

[3] Christine MacDonald, "State warns colleges: Prep teachers better," *Detroit News,* Sunday, April 16, 2006, www.detnwews.com/apps/pbcs.dll/article?AID=/20060416/SCHOOLS/604160392/1026.

[4] Linda Darling-Hammond, "From 'Separate but Equal' to 'No Child Left Behind': The Collision of Old Inequalities and New Standards," *Many Children Left Behind,* Deborah Meier and George Wood, editors, Beacon Press, Boston, 2004, p. 28.

[5] Jonathan Kozol, Shame of a Nation, Crown Publishers, NYC, 2005.

[6] Charles Murray, "By the Numbers: Acid Tests: No Child Left Behind is beyond uninformative It is deceptive," *Wall Street Journal,* July 25, 2006.

[7] "One Third of a Nation: Rising Dropout Rates and Declining Opportunities," Educational Testing Service, Princeton, NJ, Feburary, 2005. www ets.org/research/pic, p. 7.

[8] Deborah Meier, *In Schools We Trust: Creating Communities of Learning in an Era of Testing and Standardization,* Cahners Business, Information, Inc., 2002, quoted on page 117 of *Shame of a Nation* by Jonathan Kozol.

corporate secrecy. However, beginning with the estimates of the 1988 costs of standardized testing in T*he Fractured Marketplace for Standardized Testing*[9], and then adjusting for inflation, the increased number of students, and the estimated increased number of standardized tests, I estimate that nationally in 2005 the direct cost of testing was about $4 billion and the total costs including test preparation was about $289 billion. That's about half the military budget, a significant addition to your tax burden.

NCLB was based on "the Houston Miracle," which has since been revealed to be a fraud, based on lying. To what extent are other districts' test scores and other records also fraudulent? One hears an alarming number of cheating stories from a profession that was probably as honest as any 20 years ago. Is this good for education?

What can AWM members do? The first action might be to alert your congressperson to the situation soon. Feel free to send her or him a copy of this article. Letters to the editor are also needed. Last summer I coordinated a letter from nine Montclair leaders concerned about education to our congressmen that was later adapted as a jointly co-authored op-ed piece in the local paper. The biggest coup was getting the signatures of both the president of the local NAACP and the superintendent of schools, who had been publicly in confrontation on many issues, but were united for this purpose.

What did we say? Our letter is not copyrighted; feel free to lift it. We proposed four changes, on which the presidents of the PTA's, the teachers' union, and the NAACP could agree.

1. No school's future should depend on a set of test scores. Some schools may need help, but deciding which requires wise human judgement. In general, we believe in free public education. Montclair has provided choice within the public school system for three decades, so we know that it is possible to allow diversity within the public school system without damaging the basic concept of universal public schooling.
2. None of the mandates in the NCLB have been proved convincingly to improve education. Many do serious harm to children and institutions while making some private institution rich. While improvements are possible and desirable in even the best schools and drastic improvements are needed in many, how to accomplish such improvement cannot be legislated. It is not the place of legislatures to decide what should happen to underachieving schools. Attention has been brought to differently accomplishing schools, and even that merits no more expenditure of public funds until a significant time has passed for change to happen.
3. Federal money should be distributed equitably among schools. To the extent that some districts receive more money, impoverished schools need more money, not less. It is inappropriate to lower the allotment to schools that need help. In England, teachers in inner city London are paid a higher salary than those in easier, more pleasant districts, in contrast to the practice in this country.
4. All school systems need to spend more of their budgets on education and less on testing. Eliminate mandated standardized tests in grades 3, 5, 6, and 7. Testing changes teaching, and too often not for the better.[10]

Personally, I would prefer we rid our country of all standardized tests except the college admissions tests that make the lives of admissions officers bearable. Nobody claims they are fair, but they seem to be necessary, and one can argue they are fairer than the alternative. The ACT and SAT are a necessary evil, and the fact that there are two of them minimizes the problems of monopoly, which plague all state tests.

When they heard its name, some teachers wondered if "no child left behind" meant they would no longer be able to retain failing students in grade. Indeed, I have been told that

[9] Walter M. Harvey, George F. Madaus, Robert Lyons, *The Fractured Marketplace for Standardized Testing,* Kluwer Academic Publishers, Boston, 1993.

[10] Beverly Bussey, Michelle Fine, David Herron, Stan Karp, Alex Kent, Patricia Kenschaft, Dennis Murray, and Frank Alvarez, "Revisions Needed in No Child Left Behind Act," February 15, 2007, p. A11.

in Japan, it is considered cruel to separate a child from his or her friends, so nothing so drastic can happen until the eighth grade test. Thus all children are motivated to help the weakest so that they are not a drag on the class. They are going to be with you for years! Alas, it appears that NCLB is named after a widely selling series of novels about the apocalypse, where on the day of judgement all children are judged innocent so there is "no child left behind."

Furthermore, I worry about the effect of standardized tests on youngsters' attitude toward learning and school. There are signs that the goal of education is seen too much as passing tests, so there is no reason to retain knowledge or to make sense of it. This is strongly connected to the disincentive for teachers to connect school activities to the real world, and for all of us to pursue knowledge for its own sake, whether or not it can be tested. Many others share my concerns; a recent survey indicates that almost two thirds of Americans want NCLB abolished or amended, and about a half believe it has had a negative effect on education.[11]

The threatened collegiate standardized tests could essentially destroy American higher education and our intellectual leadership in the world. One person on the Montclair State faculty claims that anything that can't be tested isn't worth teaching. Music appreciation and political science seem worthy of study to me, but he is not alone. Even in mathematics, there are concepts and even skills that are mighty hard to measure with multiple choice tests. I suspect most of us would not want our careers to depend on the "value added" to our students during their course with us.

There are many interesting ideas and useful skills that can be taught in schools. Filling in the bubbles is not one. We need to remove mandatory testing from our national policy and return to trying to improve our schools. That job is challenging enough.

---

[11] "Most American Want 'No Child' Law Left Behind," *Detroit News,* Script Howard News Service, Thursday, May 31, 2007.

Call for Nominations: The 2008 Kovalevsky Prize Lecture

AWM and SIAM established the annual Sonia Kovalevsky Prize Lecture to highlight significant contributions of women to applied or computational mathematics. This lecture is given annually at the SIAM Annual Meeting. Sonia Kovalevsky, whose too-brief life spanned the second half of the nineteenth century, did path-breaking work in the then-emerging field of partial differential equations. She struggled against barriers to higher education for women, both in Russia and in Western Europe. In her lifetime, she won the Prix Bordin for her solution of a problem in mechanics, and her name is memorialized in the Cauchy-Kovalevsky theorem, which establishes existence in the analytic category for general nonlinear partial differential equations and develops the fundamental concept of characteristic surfaces.

The mathematicians who have given the prize lecture in the past are: Linda R. Petzold, Joyce R. McLaughlin, Ingrid Daubechies, Irene Fonseca, and Lai-Sang Young.

The lectureship may be awarded to anyone in the scientific or engineering community whose work highlights the achievements of women in applied or computational mathematics. The nomination must be accompanied by a written justification and a citation of about 100 words that may be read when introducing the speaker. Nominations should be sent to the AWM office (*five* copies to: Kovalevsky Selection Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030; phone: 301-405-7892) or electronically to awm@awm-math.org, to arrive by **November 1, 2007**.

The awardee will be chosen by a selection committee consisting of two members of AWM and two members of SIAM. Please consult the award web pages www.siam.org/prizes/kovalevsky.htm and www.awm-math.org/kovalevskylectures.html for more details.

Book Review

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

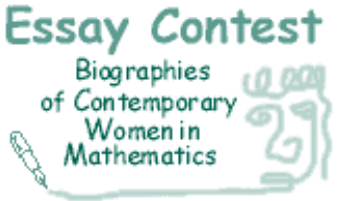
Pandora's Breeches: Women, Science, & Power in the Enlightenment, Patricia Fara, Pimlico (Random House), London 2004.

Reviewer: Bridget D Franklin, Department of Mathematics, Rice University, Houston TX, 77005; e-mail: bridgetd@gmail.com

At its onset, *Pandora's Breeches: Women Science & Power in the Enlightenment* by Patricia Fara may seem like another long overdue celebration of women's forgotten achievements in the sciences. However, after the second chapter, one realizes that this is definitely not Fara's intention. In Pandora's Breeches, Fara instead attempts to study the culture of science during the seventeenth and eighteenth century to appreciate how everywoman, the scientist's wife, daughter, student, or confidante, has had a great impact on how science has grown. She does so marvelously, carefully examining the roles women have taken in spite of their less rigorous education and their exclusion from the official spheres of scientific discussion.

The title, *Pandora's Breeches,* is an interesting one, and Fara explains its significance in the prologue. When the British House of Commons caught fire in 1792, investigators found a pair of scorching breeches in the attic. As this event coincided with the public response to Thomas Paine's *Rights of Man* in Britain, it was read as a warning against the idea of women's equality. These particular breeches were deemed Pandora's breeches, signaling that were women to gain equality with men, it would release a Pandora's box of evil and misfortune upon society.

It is important to remember that Patricia Fara is primarily a historian, and thus *Pandora's Breeches* is primarily a historical work. Instead of focusing on the science and research produced or influenced by these women, Fara is concerned with how the science affected culture and similarly how culture affected science. Since women were banned from academic societies and universities where most scientific discussion took place, those who excelled and had the greatest influence did so with the help and encouragement from their relationships with men who were members. Therefore, she introduces these women through their relationships with influential male scientists; each chapter focuses on a particular man/woman pair. Women take on varying roles in each of these relationships. For example, Jane Dee is introduced as the wife of John Dee, an Elizabethan natural philosopher and magician. John Dee studied mathematics, astronomy, and astrology; he was also a favored consultant for Queen Elizabeth I. Although Jane Dee had no interest in his late medieval sciences, theirs is one of the earliest examples



To increase awareness of women's ongoing contributions to the mathematical sciences, the AWM is (*pending funding*) sponsoring an essay contest for biographies of contemporary women mathematicians and statisticians in academic, industrial, and government careers. The essays will be based primarily on an interview with a woman currently working in a mathematical career. This contest is open to students in the following categories: **grades 6–8**, **grades 9–12**, and **undergraduate**.

At least one winning entry will be chosen from each category. Winners will receive a prize, and their essays will be published online at the AWM Web site. Additionally, a grand prize winner will have his or her entry published in the AWM *Newsletter*. For more information, contact Dr. Victoria Howle (the contest organizer) at vehowle@sandia.gov or see the contest Web page: www.awm-math.org/biographies/contest.html. The deadline for receipt of entries is **November 2, 2007**. *(To volunteer as an interview subject, contact Howle at the e-mail address given.)*

of scientific research happening in the home. Fara examines how this shift must have affected Jane Dee, the woman trained to serve as the obedient wife and master of the home, as her husband performs wild experiments in his salon. Another example is that of Emilie du Chatelet, a women well-educated in mathematics and science, without whom Newton's ideas might have required another century to overtake those of Descartes in eighteenth century France. Her translation of Newton's Principia Mathematica is still in use today.

A major selling-point of *Pandora's Breeches* is her portrayal of women, not counting their achievements in comparison with today's liberated and educated women, but rather celebrating their individual personalities and success in the scope of their own societies. Fara also strives to honor women in science by remembering that which they would have been most proud of, throwing out the conventional mode of honoring women on the sole basis of their gender. She refuses the iconography of the helpless woman with "unrecognized genius." Fara writes "Celebrating people just because they are women suggests that they are bound together by some essential quality of womanhood which transcends the barriers of time and culture... Singling out women as geniuses [by exaggerating their activities] is as misleading as suppressing their existence" [20–21].

Fara also uses many helpful illustrations to depict how women were perceived in their own societies. Several of these illustrations are frontispieces from the notable scientific publications of the time. Fara uses these frontispieces and skillfully analyzes their authors' potential meanings.

Patricia Fara works diligently in her book to represent equally all facets in which women have contributed to science, from the understanding wife, to the noble patron, to the translator. All these roles, according to Fara, have equal weight, along with the research assistants and artisans who create the scientific equipment, in the advancement of science. "We need to rewrite science's past by eliminating romanticized tales of lone geniuses and their glorious discoveries. Science is a collaborative project whose successes—and failures—can only be appreciated by understanding how scientific technology has permeated the whole of society" [236]. Although women's roles were not always as glamorous, and their names have been mostly forgotten, their contributions were equally as significant as the intellectual giants whose names are known by all. The devotion to this idea, although greatly admirable, does however make Pandora's Breeches a bit unbelievable at times. Although no character is left unaccounted for, some of the examples put forth seem at times irrelevant to the overall picture which Fara is attempting to create. This can be distracting, but in the end Fara is able to bring together the distinct threads of her theories nicely.

Pandora's Breeches easily achieves its goals of providing a fresh outlook on interpreting the lives of those who influenced science. Fara details not only the work which her subjects produced, but also the important facets of their personal lives. Scientists and philosophers did, after all, have monetary, cultural, or relationship issues which affected their work. Where would society be today had Descartes's philosophies not been influenced by the brilliant yet modest Elisabeth of Bohemia? The reader is left with a new appreciation of the development of modern science and all the toil by so many which helped to create it.

The One-Two Policy Punch: Importance and Effectiveness

COACHE, Harvard Graduate School of Education, August 2007

Research pressures cause greatest angst in survey of nearly 7,000 early-career faculty

A new report by the Collaborative on Academic Careers in Higher Education (COACHE), a research project based at the Harvard Graduate School of Education, has revealed that junior faculty place a high degree of importance on institutional policies and practices in terms of how they affect career success. However, junior faculty expressed less satisfaction with the effectiveness of those policies and practices.

The comprehensive report highlights trends across the 77 colleges and universities that participated in the Tenure-Track Faculty Job Satisfaction Survey in either 2005–06 or 2006–07. Overall, the survey of 6,773 tenure-track faculty discovered that policies such as an upper limit on teaching obligations; travel funds to present papers or conduct research; informal mentoring; and an upper limit on committee assignments are considered most important by early-career faculty to their success. This finding held true for males, females, white faculty, and faculty of color. Junior faculty of all groups rated financial assistance with housing as the least important policy. However, as compared to male faculty and white faculty, female faculty and faculty of color, respectively, found institutional policies significantly more important for their success.

On average, not one of the 16 policies or practices assessed in the COACHE survey was deemed even "fairly effective" to the faculty who find those policies important. On a five-point effectiveness scale (5 = very effective and 1 = very ineffective), informal mentoring ranked the most effective practice at only 3.69, suggesting much room for improvement. Compared to male faculty, female faculty rated nearly all of the institutional policies and practices, including personal and research leave, formal mentoring, and stop-the-clock policies, as more effective. However, women and men who find such policies to be at least "fairly important" agreed that childcare and assistance in obtaining grants were the least effective provisions among those rated.

Still, opinions differed on many points. "White faculty, female faculty and faculty of color strongly diverged over which institutional policies they found most effective," said Cathy Trower, COACHE Director. "This suggests that a one-size-fits-all, 'we've got that policy on the books, so we're done' attitude doesn't cut it in the competitive environment of recruiting and retaining top faculty talent."

In addition to policy and practice, the COACHE survey examined tenure clarity, work/life balance, faculty satisfaction with the nature of the work, and satisfaction with the climate, culture and collegiality of their workplaces. Overall, junior faculty members were most clear about the tenure process while least clear about tenure standards. As compared to white faculty, faculty of color reported being similarly clear about the tenure process, criteria and body of evidence, but reported significantly more clarity with regard to tenure standards and their institutions' expectations for performance as a scholar, teacher, advisor, colleague, campus citizen, and member of the broader community. On the other hand, female faculty reported less clarity on all dimensions of tenure and on their institutions' expectations for their performance as scholars.

"Overall, new scholars agreed that the expectations for performance as a colleague and a teacher are reasonable, yet believe that expectations placed upon them as a scholar are the least reasonable," Trower said. "This could, in part, be the normal anxiety early career faculty have about establishing a solid record of research, but our interviews with hundreds of talented, smart junior faculty over the years suggest that it's less about anxiety than it is about the lack of resources, time, and support to be an excellent scholar and an outstanding teacher and a stellar colleague and campus citizen, all at once."

Another section in the COACHE survey examined the compatibility of the tenure-track and having and raising children, and junior faculty satisfaction with the balance between the demands of work and home. Early-career faculty rated their satisfaction with the balance between professional and personal time very low (2.78 on a 5-point scale)—lower even than the overall rating cited in last year's report. Female faculty reported significantly less agreement with the statements regarding institutional support for having and raising children, and expressed a much lower level of satisfaction than male faculty with their work/life balance.

Within the "nature of work" category, the survey looked at faculty members' satisfaction with teaching, research and support services and how they spend their time. As discovered in the 2005–06 COACHE report, junior faculty continue to express the most satisfaction with aspects of teaching, followed by how they spend their time as faculty members, various support services, and lastly, aspects of research.

"As with our initial survey, we again found fairly high satisfaction with the various aspects of teaching, but less so with research," Trower said. "Institutions may wish to closely examine the research expectations and requirements, especially since junior faculty have an overloaded plate, the lead times on publishing are longer, and the competition for large grants is becoming more heated."

A section examining numerous aspects of the climate, culture, and collegiality of the workplace revealed differences of opinion between male faculty members and their female counterparts and between white faculty and faculty of color. For example, with the exception of their level of satisfaction regarding personal and professional interaction with other junior faculty colleagues, female faculty members felt less satisfied than males with all of the other key climate variables. Without exception, faculty of color gave all climate aspects lower marks than did their white counterparts.

"We see female faculty and faculty of color expressing significantly less satisfaction in regards to how well they 'fit,'" said Trower. "Issues of inequity, in regards to how junior faculty members are treated within each department and how immediate supervisors evaluate their work, seem to be contributing to this problem. Without changes aimed at correcting these feelings of dissatisfaction, it is likely that colleges will continue to struggle to retain men and women of color in all disciplines and white women in fields in which they have been historically underrepresented, like science and engineering."

Despite the concerns of female faculty about climate, the COACHE study found that male and female junior faculty members were equally likely to say that they would accept their current position if they "had to do it over again." Still, faculty of color were less likely to say so by a significant margin, suggesting that the "pipeline" issues for people of color in the academy extend into the tenure-track. Ultimately, the COACHE data shows, female faculty and faculty of color rated their institutions less positively as places for junior faculty to work.

About COACHE

Based at the Harvard Graduate School of Education and supported by the Ford Foundation, COACHE is committed to gathering the peer diagnostic and comparative data academic administrators needed to recruit, retain, and develop the cohort most critical to the long-term future of their institutions. For more information, please visit www.coache.org or contact coache@gse.harvard.edu.

joint International Meeting

The first joint meeting of the American Mathematical Society (AMS) and the New Zealand Mathematical Society (NZMS) will be held at the Victoria University of Wellington, New Zealand, December 12–15, 2007. The meeting, organized by representatives of both societies, will include plenary speakers from each society and will incorporate the 2007 New Zealand Mathematics Colloquium.

The plenary speakers are Marston Conder (University of Auckland), Rodney G. Downey (Victoria University of Wellington), Michael H. Freedman (Microsoft Research), Gaven J. Martin (Massey University), Assaf Naor (Courant Institute of Mathematical Sciences), Theodore A. Slaman (University of California, Berkeley) and Matthew J. Visser (Victoria University of Wellington). There are fourteen Special Sessions confirmed to date.

Since the AMS's first joint international meeting with the London Mathematical Society in 1992, the AMS has co-sponsored 20 meetings with sister societies in their host countries (upcoming in 2007 are meetings in Warsaw, Poland, and Wellington, New Zealand). International meetings are a valuable addition to the Society's programs that foster contacts and collaborations.

For up-to-date information on the program, timetable, accommodations and more, see the website maintained by the local organizers at http://www.mcs.vuw.ac.nz/%7Emathmeet/amsnzms2007/index.shtml.

Futures Channel Movies

The Futures Channel, June 2007

She designed a sailboat and a ferris wheel. He designed a motorcycle and a roller coaster. They're a team and they have jobs that most kids (and a lot of adults) would envy: They design toys and get paid for it.

In the latest movie from The Futures Channel, Heather Croston and Michael Klitsch take viewers behind the scenes at K'NEX Industries, which makes the popular K'NEX construction toys. Children as young as three use the different sized rods and connectors to build virtually any kind of structure from a race car to a flying dinosaur.

"If you can imagine it, you can build it," said Klitsch, a senior designer at K'NEX. Inside K'NEX Pennsylvania headquarters, his desk is covered with toy parts, design sketches and prototypes. "Over the 12 years that I've been here, I've built thousands of models."

Since 1999, The Futures Channel's short movies, or "micro-documentaries," have introduced students and teachers to interesting people with fascinating jobs who use math and science to make products that are often part of students' everyday lives. Recent Futures Channel movies go "on location" at Easton Sports, Santa Cruz Skateboards, Columbia Sportswear and Motorola where the engineers and designers of cell phones were featured.

Sandra Thomas, a junior high school teacher from Rosenberg, Texas previewed the movie. "Many of my students have no idea that there are people who have jobs like those in the movie. This movie would get them thinking, 'Wow!! I draw stuff all the time but I never knew I could have a job that put my ideas to work!'" Thomas said.

"Inventing Toys," now playing on http://www.thefutureschannel.com, also features a conversation with Joel Glickman, K'NEX Founder and CEO. Nearly 15 years ago, Glickman set out to design a new construction toy using the resources of his plastic molding business. "I'm a kid at heart. I knew that if I liked it and I thought it was good, other kids younger than me would also find it entertaining. So, I set out to design a construction toy," explained Glickman. A simple idea he had while playing with drinking straws at a wedding has since become a thriving toy business.

Watch the movie and go behind-the-scenes at K'NEX Industries: http://www.thefutureschannel.com/dockets/realworld/inventing_toys/.

Stereotype-induced Math Anxiety

University of Chicago, May 2007

A popular stereotype that boys are better at mathematics than girls undermines girls' math performance because it causes worrying that erodes the mental resources needed for problem solving, new research at the University of Chicago shows.

The scholars found that the worrying undermines women's working memory. Working memory is a short-term memory system involved in the control, regulation and active maintenance of limited information needed immediately to deal with problems at hand.

They also showed for the first time that this threat to performance caused by stereotyping can also hinder success in other academic areas because mental abilities do not immediately rebound after being compromised by mathematics anxiety.

"This may mean that if a girl takes a verbal portion of a standardized test after taking the mathematics portion, she may not do as well on the verbal portion as she might do if she had not been recently struggling with math-related worries and anxiety," said Sian Beilock, Assistant Professor in Psychology and lead investigator in the study.

"Likewise, our work suggests that if a girl has a mathematics class first thing in the morning and experiences math-related worries in this class, these worries may carry implications for her performance in the class she attends next," she added.

The results of the study appear in the paper "Stereotype Threat and Working Memory: Mechanisms, Alleviation, and Spill Over," published in the current issue of the *Journal of Experimental Psychology: General.* Co-authors are Robert Rydell, a postdoctoral researcher in psychology at the University of California, Santa Barbara and Allen McConnell, University Distinguished Professor of Psychology at Miami University.

Researchers have been aware that stereotypes can undermine achievement in schools in many ways, but little research has focused on the specific mental processes that prompt this response.

In order to examine those mental processes, the team selected a group of college women who performed well in mathematics. They were then randomly assigned to two groups, with one set of women being told that they were being tested to see why men generally do better on math than women, and the other group being told simply that they were part of an experiment on mathematics performance.

The information that men do better in mathematics than women undercut performance drastically. The accuracy of women exposed to the stereotype was reduced from nearly 90 percent in a pretest to about 80 percent after being told men do better in mathematics. Among women not receiving that message, performance actually improved slightly.

The researchers asked the women exposed to the stereotyping message what they were thinking during the tests and many of them reported being distracted by thoughts

Sonia Kovalevsky High School Mathematics Days

Through grants from Elizabeth City State University and the National Security Agency, 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 2008 for Spring 2008 using funds remaining after the August 2007 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 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 itemized budget (i.e., food, room rental, advertising, copying, supplies, student giveaways, etc. Honoraria for speakers should be reasonable and should not, in total, exceed 20% of the overall budget. Stipends and personnel costs are not permitted for organizers. This grant does not permit reimbursement for indirect costs or fringe benefits. Please itemize direct costs in budget.); 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 2008. If selected, a report of the event along with receipts (originals or copies) for reimbursement must be submitted to AWM within 30 days of the event date or by June 1, 2008, 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, 2008**; applications via e-mail or fax will not be accepted.

such as "I thought about how boys are usually better than girls at math so I was trying harder not to make mistakes" and "I was nervous in the last set because I found out that the study is to compare mathematical abilities of guys and girls." Women not exposed to stereotyping had fewer such thoughts of inferiority.

Further tests showed that the verbal portion of the working memory was the portion of the women's mental resources that was most strongly undermined by the anxiety. The researchers showed that women experiencing mathematics anxiety found it more difficult to do problems when they were written out horizontally than when they appeared vertically. Previous findings show that solving horizontal problems relies heavily on verbal resources. In order to see if mathematics anxiety had any lasting impact on performance in the short term, the researchers again had women solve math problems, with half being told they were part of a test to determine why men generally do better in mathematics than women and the other half being told only that they were being tested for mathematics performance. They then gave the women a standard memory test involving verbal information and found that the women did less well on that test if they were exposed to the mathematics stereotyping.

"We demonstrated that worries about confirming a negative group stereotype may not only impact performance in the stereotyped domain, but that this impact can spill over onto subsequent, unrelated tasks that depend on the same processing resource the stereotype-related worries consume," Beilock and her colleagues wrote.

The research was supported by grants from the Institute of Education Sciences and the National Science Foundation.

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 1st to the selection committee, or the funds will be released for reallocation. (Applicants for mentoring travel grants may in exceptional cases receive two such grants throughout their careers, possibly in successive years; the second such grant would require a new proposal and would go through the usual competition.) For foreign travel, US air carriers must be used (exceptions only per federal grant regulations; prior AWM approval required).

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

Each applicant should submit five copies of each of the following: 1) 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, 2008**.

Publications of Interest

Understanding High School Graduation Rates

Alliance for Excellent Education, May 1, 2007

Understanding High School Graduation Rates, a new publication from the Alliance for Excellent Education, illustrates the discrepancies in graduation rates reported by government and independent sources, examines why this is important, and explains how certain federal policies have contributed to the graduation rate confusion.

"The nation will not have met the goal of leaving no child behind until every student graduates from high school prepared for success in college, work, and life," says Bob Wise, president of the Alliance for Excellent Education and former governor of West Virginia. "Providing an excellent education starts with understanding whether the student who starts high school is the one who stays and earns a diploma. Misleading graduation rate calculations, inadequate systems to track students throughout their education, and lack of accountability by the school are undermining efforts to understand and increase the nation's graduation rate."

Understanding High School Graduation Rates compares graduation rates reported by the states and the U.S. Department of Education to those reported by independent researchers. While the average difference between state and independent sources is about 13 percent, the gap ranges from a low of 4 percent to a high of 32 percent.

Additionally, *Understanding High School Graduation Rates* considers the costs of the dropout crisis and identifies three core areas that are fundamental to calculating, reporting, and improving accurate graduation rates:

- The need for all states to use the same accurate graduation rate calculations,
- The need for a state data system that tracks individual student data from the time students enter the educational system until they leave it, and
- The need for federal policy that meaningfully holds high schools accountable for improving student achievement on test scores and increasing graduation rates so that low-performing students are not unnecessarily held back or encouraged to leave school without a diploma.

Understanding High School Graduation Rates is available at: http://www.all4ed.org/publications/wcwc/index.html.

Degrees in STEM Fields

General Accounting Office (GAO), May 3, 2006

The United States is a world leader in scientific and technological innovation. To help maintain this advantage, the federal government has spent billions of dollars on education programs in the science, technology, engineering, and mathematics (STEM) fields for many years. However, concerns have been raised about the nation's ability to maintain its global technological competitive advantage in the future.

A GAO report, *Science, Technology, Engineering, and Mathematics Trends and the Role of Federal Programs,* presents information on trends in degree attainment in STEM- and non-STEM-related fields and factors that may influence these trends, trends in the levels of employment in STEM- and non-STEM- related fields and factors that may influence these trends, and federal education programs intended to support the study of and employment in STEM-related fields. For this report, we analyzed survey responses from 13 civilian federal departments and agencies; analyzed data from the Departments of Education and Labor; interviewed educators, federal agency officials, and representatives from education associations and organizations; and interviewed students.

While postsecondary enrollment has increased over the past decade, the proportion of students obtaining degrees in STEM fields has fallen. In academic year 1994–1995, about 519,000 students (32 percent) obtained STEM degrees. About 578,000 students obtained STEM degrees in academic year 2003–2004, accounting for 27 percent of degrees awarded.

Despite increases in enrollment and degree attainment by women and minorities at the graduate level, the number of graduate degrees conferred fell in several STEM-related fields from academic year 1994–1995 to academic year 2003–2004. College and university officials and students most often cited subpar teacher quality and poor high school preparation as factors that discouraged the pursuit of STEM degrees. Suggestions to encourage more enrollment in STEM fields include increased outreach and mentoring.

The past decade has seen an increase in STEM employees, particularly in mathematics and computer science. From 1994 to 2003, employment in STEM fields increased by an estimated 23 percent, compared to 17 percent in non-STEM fields. Mathematics and computer science showed the highest increase in STEM-related employment, and employment in science-related fields increased as well. However, in certain STEM fields, including engineering, the number of employees did not increase significantly. Further, while the estimated number of women, African-Americans, and Hispanic-Americans employed in STEM fields increased, women and minorities remained underrepresented relative to their numbers in the civilian labor force. The number of foreign workers employed in the United States has fluctuated, experiencing declines in 2002 and 2003. Key factors affecting STEM employment decisions include mentoring for women and minorities and opportunities abroad for foreign employees.

Thirteen federal civilian agencies spent approximately $2.8 billion in fiscal year 2004 to fund over 200 programs designed to increase the numbers of students in STEM fields and employees in STEM occupations and to improve related educational programs. The funding reported for individual STEM education programs varied significantly, and programs most commonly provided financial support to students or infrastructure support to institutions. However, only half of these programs had been evaluated or had evaluations underway, and coordination among STEM education programs was limited. It is important to know the extent to which existing STEM education programs target the right people and the right areas and make the best use of available resources. Since our report was issued in October 2005, Congress, in addition to establishing new grants to encourage students from low-income families to enroll in STEM fields, established an Academic Competitiveness Council to identify, evaluate, coordinate, and improve federal STEM programs.

To view the full product, visit www.gao.gov/cgi-bin/getrpt?GAO-06-702T.

Practical Uses of Math and Science

Practical Uses of Math and Science is an online journal of math and science examples for pre-college education. PUMAS is a collection of one-page examples of how math and science topics taught in K–12 classes can be used in interesting settings, including everyday life. The examples are written primarily by scientists and engineers and are available to teachers, students, and other interested parties via the PUMAS website, http://pumas.jpl.nasa.gov/. The goal is to capture, for the benefit of pre-college education, the flavor of the vast experience that working scientists have with interesting and practical uses of math and science. Submissions of new examples are welcome.

Rigor at Risk

A new study by ACT points to a gap between what U.S. high schools are teaching in their core college preparatory courses and what colleges want incoming students to know in order for them to succeed in first-year courses.

The findings of the study—a national curriculum survey completed by thousands of high school and college instructors across the country—suggest that colleges generally want all incoming students to attain in-depth understanding of a selected number of fundamental skills and knowledge in their high school courses, while high schools tend to provide less in-depth instruction of a broader range of skills and topics.

In another report, ACT says that U.S. high school core courses too often lack the rigor they need to adequately prepare students for college-level work. The research report,

titled *Rigor at Risk,* suggests that even students who take the recommended college preparatory curriculum in high school are often ill-prepared to handle college material. The findings also suggest that many students lose academic momentum during their last two years of high school.

"We've been urging college-bound students to take the core curriculum in high school for many years," said Cynthia B. Schmeiser, president and chief operating officer of ACT's education division. "But now it is clear that just taking the right number of courses is no longer enough to ensure that students will be ready for college when they graduate. Students must take a number of additional higher-level courses in high school to have a reasonable chance of succeeding in college courses, and even that does not guarantee success."

Visit the website www.act.org to read full copies of these reports and other items of interest.

Math Doesn't Suck

Danica McKellar, who played Winnie on the hit show "The Wonder Years," was a math major at UCLA, graduating with honors in 1998. Her undergraduate research with Brandy Winn (Ph.D., Chicago, 2005) under the direction of Lincoln Chayes, "Percolation and Gibbs States Multiplicity for Ferromagnetic Ashkin-Teller Models on Z^2," appeared

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. Two types of grants are available. The Mathematics Travel Grants provide full or partial support for travel and subsistence for a meeting or conference in the applicant's field of specialization. The Mathematics Education Research Travel Grants provide full or partial support for travel and subsistence in math/math education research, for mathematicians attending a math education research conference or math education researchers attending a math conference. In either case, a maximum of $1500 for domestic travel and of $2000 for foreign travel will be applied. For foreign travel, US air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

Eligibility. These travel funds are provided by the Division of Mathematical Sciences (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 more than $2000 yearly in external governmental funding 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 **October 1, 2007** and **February 1, 2008**.

in the *Journal of Physics.* She wrote her book *Math Doesn't Suck* to encourage girls that "traditional math instruction isn't reaching," as it says in a recent article about the book ("A Math Makeover" by Peg Tyre, *Newsweek,* August 6, 2007).

Careers Basics: Advice and Resources for Scientists

This booklet is available at Science Careers Forum. The chapters include: CV writing and interview skills, funding and grant writing, expanding choices, networking, female and minority experiences in science, leadership and management in the lab, and scientific writing and publishing. The articles in each chapter may be read online, or full chapters or the full booklet may be downloaded in .pdf form. Two of the articles in the chapter on female and minority experiences look particularly relevant: "Women and Minorities: Negotiating Salaries" by Lee Kass and Kathleen Gale, and "Top Five Challenges for Pregnant Scientists" by Lynn Dicks. See http://sciencecareers.sciencemag.org/career_development/tools_resources/careers_basics_booklet.

"Code O": How to Recover from Overwhelm

This article by Susan R. Johnson, MD, MS, appears at http://www.mentornet./documents/about/news/newsart.aspx?nid+20&sid=1. Her "three steps to resuscitation" are 1) stop and take a deep breath, 2) slow down, and 3) complete a task. The task need not be complex or high-priority; your first order of business is to get out of under the "overwhelm." Johnson goes on to describe various stabilization techniques, developing a system for staying organized and learning how to manage your time.

The suggestions are full of common sense; they seem unsurprising when you read them, but you're also likely to think, "what a helpful way to put things." They may well give you a new slant on how to recover when you're feeling paralyzed by waaaay too much to do.

Websites of Interest

The Chronicle *Careers* Section

In conjunction with its job ads, the *Chronicle of Higher Education* has a section called "News & Advice." A listing by date is available at http://chronicle.com/jobs/news/. There are over 100 articles under the topic "Work and Family," almost as many in "Troubleshooting," only 8 on "Retirement." Many other topics are available. From the random surfing I have done at the site, the articles are frank (so much so that many of them have pseudonymous authors) and sensible.

The AAUP Issues Pages

I have more than once printed in these pages press releases from the American Association of University Professors (AAUP). Their website offers information open to all at http://www.aaup.org/aaup/issuesed/default.htm, with topics including "Women in Higher Education" and "Work & Family." Some materials are available to members in *Academe,* the monthly AAUP magazine, with reports available to non-members for a price (a rather hefty $75 for the latest salary report, for example); membership in AAUP is rather expensive but worthwhile, in my opinion. The state and national leadership has been invaluable to us at Loyola as we strive to protect the rights of faculty.

Engineers Dedicated to a Better Tomorrow

A lot of interesting information related to engineering is available at http://www.dedicatedengineers.org/. The press release below details what many of us already know, that many fewer women and minority members enter engineering than pursue mathematics.

Two new reports issued in June 2006 by Engineers Dedicated to a Better Tomorrow identify engineering (including

engineering technology), physics, mathematics and computer science as academic fields of study badly lagging in achieving gender and/or racial/ethnic diversity in their graduating baccalaureate classes.

Both studies examined recent (2004) and historical baccalaureate data to address a critical, "bottom-line" question: How diverse are the graduating classes in Engineering and five closely-related fields (namely: Chemistry, Physics, Mathematics, Computer Science, and Engineering Technology) when compared to the diversity seen in the graduating class of all Science & Engineering (S&E) fields combined?

The results show that while S&E is doing reasonably well in terms of achieving diversity in its overall graduating baccalaureate class, a closer look reveals areas of significant weakness within S&E. In particular, the following fields were identified as substantial laggards in achieving diversity in their graduating baccalaureate classes:

For Women: Physics, Engineering, Engineering Technology and Computer Science. Collectively, only about one in five students earning baccalaureates in these fields were women in 2004, compared to a one in two rate seen when considering S&E as a whole. Within Engineering, the subdisciplines of Electrical and Mechanical Engineering were found to be particularly weak areas where collectively only 14% of baccalaureate-earners were women in 2004—just one-half the 28% level recorded for all other Engineering subdisciplines combined.

For Minorities: Physics, Mathematics and Engineering. For both Physics and Mathematics, substantial underrepresentation as baccalaureate-earners is seen for all three minority groups considered (Blacks, Hispanics and Native Americans), while for Engineering, substantial underrepresentation is seen for both Blacks and Native Americans, with such underrepresentation generally extending throughout the various subdisciplines of Engineering.

Given these findings, the issued reports look to serve as a "call to action" to colleges/universities, relevant professional societies, and other appropriate entities to undertake and/or support new or additional efforts specifically focused on increasing the enrollment and retention of women and minorities nationwide in the academic fields identified. In this regard, the reports put forth the following specific diversity goals:

For Women: Achieving 33% female baccalaureate-earners in Physics, Engineering, and Computer Science—and 25% in Engineering Technology—by the year 2020. To achieve the 33% goal in Engineering, particular focus needs to be placed on the lagging subdisciplines of Electrical and Mechanical Engineering, given that they account for about one-half of all baccalaureates awarded annually in Engineering.

For Minorities: Achieving diversity levels in Physics, Math and Engineering baccalaureates-earners on a par with corresponding levels seen for S&E as a whole (which, for 2004, was: 8.4% Black; 7.3% Hispanic; 0.71% Native American). Based on the data examined, increases on the order of 50-100% in the number of baccalaureates in those fields that are "minorities of concern" (Blacks, Hispanics and Native Americans for Physics and Math; Blacks and Native Americans for Engineering) are needed to achieve such a goal.

To aid in women/minority recruiting efforts, DedicatedEngineers has released *Improving Engineering's Public Image: Ten Guiding Principles,* a document detailing a 10-point set of guiding principles for establishing a "new and improved" image for engineering and engineers, one designed to be particularly compelling in regards to attracting today's youth to engineering studies and careers.

Engineers Dedicated to a Better Tomorrow is a charitable/educational non-profit dedicated to making a difference, both in terms of advancing the engineering profession, as well as in helping improve the world through the practice of engineering.

QuestBridge

QuestBridge is a national college match that helps high-achieving high school seniors gain admission to their partner colleges, and aids students in obtaining scholarships and generous financial aid packages. See www.Questbridge.org; the application deadline is **September 30, 2007**.

AWM Workshop for Women Graduate Students and Recent Ph.D's

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

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

WHEN: An AWM Workshop is scheduled to be held in conjunction with the SIAM Annual Meeting, San Diego, CA, July 7–11, 2008.

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

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

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

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

Workshop Selection Committee
11240 Waples Mill Road, Suite 200
Fairfax, VA 22030

Phone: 703-934-0163
E-mail: awm@awm-math.org URL: www.awm-math.org

APPLICATION DEADLINE

Applications must be received by **January 15, 2008**. Applications via e-mail or fax will not be accepted.

ADVERTISEMENTS

BOSTON UNIVERSITY—Postdoctoral and Predoctoral positions are available for "BioDynamics at Boston University," a Research and Training Grant funded by the NSF. The RTG group is associated with the Center for BioDynamics (CBD). The senior faculty members of this group are from Mathematics (N. Kopell (PI), T. Kaper, C.E. Wayne) and Biomedical Engineering (J. Collins, T. Gardner, K. Sen). Research themes of the RTG focus on analysis of systems with multiple time-scales, applications of dynamical systems to neuroscience, and applications of dynamical systems to genetic regulatory networks. For information about collaborative activities of this group, please see cbd.bu.edu. Postdoctoral applications should be sent to: Joan Butler, Center for BioDynamics, 111 Cummington Street, Boston University, Boston MA 02215. Please include a CV and a cover letter stating the reasons you are appropriate for this group. Also have 3 letters of recommendation sent to the CBD. Applications will be reviewed starting from Dec. 1, 2007. Interested Ph.D candidates should apply to one of the associated departments and mention interest in the CBD and this RTG grant. Information about applications to the Math Dept. can be found at http://www.bu.edu/grs/academics/admissions/index.html. For the BME Dept. see http://www.bu.edu/eng/grad/apply. Applicants must be US citizens or resident aliens. Successful Postdoctoral candidates will teach one course per semester, including opportunities to design and/or teach new interdisciplinary curricula. For further possible positions associated with the CBD, please see http:/www.cbd.bu.edu.

BROWN UNIVERSITY—MATHEMATICS DEPARTMENT—The Mathematics Department at Brown University invites applications for one position at the level of Tenured Associate or Full Professor to begin July 1, 2008 in the area of analysis, broadly construed. [Exceptional candidates with less experience may also be considered for a tenure-track Associate Professor position.] Candidates should have a distinguished research record and a strong commitment to excellence in undergraduate and graduate teaching. Preference will be given to applicants with research interests consonant with those of the present members of the Department. For more information see: http://www.math.brown.edu/faculty/faculty.html. Qualified individuals are invited to send a letter of application and a curriculum vitae to: Senior Search Committee, Department of Mathematics, Box 1917, Brown University, Providence, Rhode Island 02912. Applicants for Full Professor should include the names of five references who would be contacted at the appropriate time by the Search Committee. Applicants for Associate Professor should have three letters of reference sent at the time of application. Applications received by **November 15, 2007** will receive full consideration, but the search will remain open until the position is closed or filled. For further information or inquiries, write to srsearch@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action employer and encourages applications from women and minorities.

BROWN UNIVERSITY—MATHEMATICS DEPARTMENT—J. D. Tamarkin Assistant Professorship—One or two three-year non-tenured non-renewable appointments, beginning July 1, 2008. The teaching load is one course one semester, and two courses the other semester and consists of courses of more than routine interest. Candidates are required to have received a Ph.D. degree or equivalent by the start of their appointment, and they may have up to three years of prior academic and/or postdoctoral research experience. Applicants should have strong research potential and a commitment to teaching. Field of research should be consonant with the current research interests of the department. For full consideration, a curriculum vitæ, an AMS Standard Cover Sheet, and three letters of recommendation must be received by **December 1, 2007**. All inquiries and materials should be addressed to: Junior Search Committee, Department of Mathematics, Box 1917, Brown University, Providence, RI 02912. To access the AMS Standard Cover Sheet, visit our website: http://www.math.brown.edu/juniorsearch.html. E-mail inquiries should be addressed to juniorsearch@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

CORNELL UNIVERSITY—H.C. Wang Assistant Professorships—The Department of Mathematics at Cornell University invites applications for two or more H.C. Wang Assistant Professors, non-renewable, 3-year term beginning July 1, 2008. Successful candidates are expected to pursue independent research at Cornell and teach three courses per year. The Department actively encourages applications from women and minority candidates. Applicants are strongly encouraged to apply electronically at http://www.mathjobs.org. For information about our positions and application instructions, see: http://www.math.cornell.edu/Positions/facpositions.html. Applicants will be automatically considered for all eligible positions. Deadline **December 1, 2007**. Early applications will be regarded favorably. Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.

CORNELL UNIVERSITY—Half-time Visiting Positions—The Department of Mathematics at Cornell University invites applications for two or more half-time visiting positions (rank based on experience) for mathematics professors on sabbatical/other leaves from colleges, universities, and engineering schools for our Teaching Program Visiting Faculty Positions beginning August 16, 2008. Candidates with substantial experience teaching undergraduate mathematics, and with teaching and research interests compatible with current faculty, are sought. Successful candidates are expected to pursue a program of study and/or research at Cornell. The normal duties are to teach two identical courses each semester. The Department actively encourages applications from women and minority candidates. Applicants are strongly encouraged to apply electronically at http://www.mathjobs.org. For information about these positions and application instructions, see: http://www.math.cornell.edu/Positions/facpositions.html. Deadline **December 1, 2007**. Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.

CORNELL UNIVERSITY—Possible Visiting Positions—The Department of Mathematics at Cornell University invites applications for possible visiting positions, academic year or one semester teaching positions (rank based on experience) beginning August 16, 2008. We are seeking candidates who have excellent teaching skills. Teaching load varies from 1-4 courses per year, depending on the individual and the availability of courses. Candidates with teaching and research interests compatible with current faculty are sought. The Department actively encourages applications from women and minority candidates. Applicants are strongly encouraged to apply electronically at http://www.mathjobs.org. For information about our positions and application instructions, see: http://www.math.cornell.edu/Positions/facpositions.html. Applicants will be automatically considered for all eligible positions. Deadline **December 1, 2007**. Early applications will be regarded favorably. Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.

CORNELL UNIVERSITY—Tenure-track Assistant Professorship—The Department of Mathematics at Cornell University invites applications for a tenure-track Assistant Professor position, or higher rank, pending administrative approval, starting July 1, 2008. Applications in all areas of Mathematics will be considered with a priority given to probability. The Department actively encourages applications from women and minority candidates. Applicants are strongly encouraged to apply electronically at http://www.mathjobs.org. For information about our positions and application instructions, see: http://www.math.cornell.edu/Positions/facpositions.html. Applicants will be automatically considered for all eligible positions. Deadline **November 1, 2007**. Early applications will be regarded favorably. Cornell University is an Affirmative Action/Equal Opportunity Employer and Educator.

ADVERTISEMENTS

COURANT INSTITUTE—Tenure Track Position—The Courant Institute Department of Mathematics anticipates having a small number of faculty positions in mathematics to begin in September 2008. Appointments may be made at either a junior or senior level. These positions will be in a range of areas in computational, applied and pure mathematics; two particular areas of interest are computational statistics and atmosphere ocean science. Some may be multidisciplinary appointments that are joint with a science department from the Faculty of Arts and Sciences. Applications and supporting documents should be received by **January 4, 2008**. For more information please visit http://www.math.nyu.edu/jobs/. The Courant Institute/New York University is an Equal Opportunity/Affirmative Action Employer.

COURANT INSTITUTE—Postdoc Positions—The Courant Institute is a center for advanced training and research in the mathematical sciences. It has long been an international leader in mathematical analysis, differential geometry, probability theory, applied mathematics, and scientific computation, with special emphasis on partial differential equations and their applications. Its scientific activities include an extensive array of research seminars and advanced graduate courses. Each year a limited number of Courant Institute Instructorships in the Department of Mathematics are awarded to postdoctoral scientists. These appointments carry a light teaching load of one course per semester and ordinarily are for a three-year term. These positions are primarily for recent Ph.D.'s and candidates must have a degree in mathematics or some affiliated field. For more information please visit: http://www.math.nyu.edu/visiting_faculty. Applications and supporting documents are due by **December 15, 2007** for appointments to begin the following academic year. The Courant Institute at New York University is an Equal Opportunity/Affirmative Action Employer.

DARTMOUTH COLLEGE—John Wesley Young Research Instructorship—2-3 years, new or recent Ph.D. graduates whose research overlaps a department member's. Teach 4 ten-week courses spread over 3 terms. Appointment for 26 months, with possible 12 month renewal; monthly salary of $4,667, including two-month research stipend for Instructors in residence during 2 of 3 summer months; if not in residence, salary adjusted accordingly. To initiate an application go to http://www.mathjobs.org—Position ID: 237-JWY. You can also access the application through a link at http://www.math.dartmouth.edu/recruiting/. General inquiries can be directed to Annette Luce, Department of Mathematics, Dartmouth College, 6188 Kemeny Hall, Hanover, New Hampshire 03755-3551. Files complete by **January 5, 2008** considered first. Dartmouth College is committed to diversity and strongly encourages applications from women and minorities.

DREXEL UNIVERSITY—The Department of Mathematics at Drexel University invites applications for at least one tenure-track/tenure position, effective September 2008. We are especially interested in candidates in (i) Mathematical Biology (ii) Stochastic Differential Equations (iii) Statistics and (iv) Numerical Analysis and Computation, though exceptional candidates in other areas will be considered as well. Applicants must possess a doctoral degree in mathematics, statistics, or equivalent and show a strong record and commitment to research and teaching. Applicants for senior positions should demonstrate an outstanding record of achievement commensurate with the level of appointment, including a track record of external support and research group leadership. Drexel University is a private, urban university, with over 10,000 full-time undergraduates and is well-known for its co-operative education program. The Mathematics Department offers undergraduate, masters and PhD degrees. To apply for this position please visit https://www.mathjobs.org/jobs/157/848 and click on "Apply" to submit all relevant materials online. These include: AMS cover sheet, letter of application, vita, statement of research program and evidence of teaching effectiveness and at least three letters of reference. Review of applications will begin **December 1, 2007** and continue until the positions are filled. Drexel University is an Equal Opportunity/Affirmative Action Employer.

INSTITUTE FOR ADVANCED STUDY, SCHOOL OF MATHEMATICS—The School of Mathematics has a limited number of memberships, some with financial support for research in mathematics and computer science at the Institute during the 2008-09 academic year. Candidates must have given evidence of ability in research comparable at least with that expected for the Ph.D. degree. During the 2008-09 year, Alice Chang of Princeton University will lead a special program on geometric partial differential equations. The emphasis will be on non-linear partial differential equations with applications to problems in differential, conformal and convex geometry. Topics covered will include Yamabe type equations, Q-curvature equations, fully non-linear equations in conformal and convex geometry, construction of conformal invariants and operators, problems in conformally compact Einstein manifolds, measure and probability theory approaches to the Ricci Tensor. Partial differential equations continue to be one of the central tools for studying geometric and even topological questions, and one goal of this program will be to bring researchers in geometry and PDE together to study problems of common interest in areas such as those mentioned above. Recently the School has established the von Neumann Early Career Fellowships. Six of these fellowships will be available for the 2008-09 academic year. To be eligible for the von Neumann Fellowships, applicants should be at least 5 years following the receipt of their Ph.D. but not yet eligible to receive their first paid sabbatical. The Veblen Research Instructorship is a three-year position which the School of Mathematics and the Department of Mathematics at Princeton University established in 1998. Three-year instructorships will be offered each year to candidates in pure and applied mathematics who have received their Ph.D. within the last three years. The first and third year of the instructorship will be spent at Princeton University and will carry regular teaching responsibilities. The second year will be spent at the Institute and dedicated to independent research of the instructor's choice. Application materials may be requested from Applications, School of Mathematics, Institute for Advanced Study, Einstein Drive, Princeton, NJ 08540; email: applications@math.ias.edu. Application forms may be downloaded via a Web connection to http://www.math.ias.edu. Application deadline is **December 1**. The Institute for Advanced Study is committed to diversity and strongly encourages applications from women and minorities.

JOHNS HOPKINS UNIVERSITY—Subject to availability of resources and administrative approval, the Department of Mathematics solicits applications for two non-tenure-track J.J. Sylvester Assistant Professors for the 2008-2009 academic year. The J.J. Sylvester Assistant Professorship is a three-year position offered to recent Ph.D.'s with outstanding research potential. Candidates in all areas of pure mathematics, including analysis, mathematical physics, geometric analysis, complex and algebraic geometry, number theory, and topology are encouraged to apply. The teaching load is three courses per academic year. To submit your applications go to www.mathjobs.org/jobs/jhu. Applicants are strongly advised to submit their other materials electronically at this site. If you do not have computer access, you may mail your application to: Appointments Committee, Department of Mathematics, Johns Hopkins University, 404 Krieger Hall, Baltimore, MD 21218, and should include a vita, at least four letters of recommendation of which one concerns teaching, and a description of current and planned research. Write to math@math.jhu.edu for questions concerning these positions. Applications received by **November 16, 2007** will be given priority. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minorities and women candidates are encouraged to apply.

JOHNS HOPKINS UNIVERSITY—Subject to availability of resources and administrative approval, the Department of Mathematics solicits applications for two Tenure-track Assistant Professors for the 2008-2009 academic year. The Assistant Professorship is a three-year position. Candidates in all areas of pure mathematics, including analysis, mathematical physics, geometric analysis, complex and algebraic geometry, number theory, and topology are encouraged to apply. The teaching load is three courses per academic year. To submit your applications go to www.mathjobs.org/jobs/jhu. Applicants are strongly advised to submit their other materials electronically at this site. If you do not have computer access, you may mail your application to: Appointments Committee, Department of Mathematics, Johns Hopkins University, 404 Krieger Hall, Baltimore, MD 21218,

ADVERTISEMENTS

and should include a vita, at least four letters of recommendation of which one concerns teaching, and a description of current and planned research. Write to math@math.jhu.edu for questions concerning these positions. Applications received by November 16, 2007 will be given priority. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minorities and women candidates are encouraged to apply.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, DEPARTMENT OF MATHEMATICS—Assistant Professor—The Mathematics Department at MIT is seeking to fill positions at the level of Assistant Professor or higher for September 2008. Appointments are based on exceptional research contributions in pure mathematics. Appointees will be expected to fulfill teaching duties and pursue their own research program. We request that applications and other materials, including (a) curriculum vitae, (b) research description, and (c) three letters of recommendation, be submitted online at www.mathjobs.org. Applications should be complete by December 1, 2007 to receive full consideration. We request that your letters of reference be submitted by the reviewers online via mathjobs. We will also accept recommendations either as PDF attachments sent to kimm@math.mit.edu, or as paper copies mailed to: Pure Mathematics Committee, Room 2-263, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA 02139-4307. Please do not mail or e-mail duplicates of items already submitted via mathjobs. MIT is an Equal Opportunity, Affirmative Action Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, DEPARTMENT OF MATHEMATICS—C.L.E. Moore Instructorships in Mathematics—These positions for September 2008 are open to mathematicians who show definite promise in research. Appointees will be expected to fulfill teaching duties and pursue their own research program. We request that applications and other materials, including (a) curriculum vitae, (b) research description, and (c) three letters of recommendation, be submitted online at www.mathjobs.org. Applications should be complete by **December 1, 2007** to receive full consideration. We request that your letters of reference be submitted by the reviewers online via mathjobs. We will also accept recommendations either as PDF attachments sent to kimm@math.mit.edu, or as paper copies mailed to: Pure Mathematics Committee, Room 2-263, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA 02139-4307. Please do not mail or e-mail duplicates of items already submitted via mathjobs. MIT is an Equal Opportunity, Affirmative Action Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, DEPARTMENT OF MATHEMATICS, APPLIED MATHEMATICS—Instructor, Assistant Professor or higher—The applied mathematics group at MIT is seeking to fill combined teaching and research positions at the level of Instructor, Assistant Professor or higher, beginning September 2008. Appointments are mainly based on exceptional research qualifications. Candidates in all areas of applied mathematics, including physical applied mathematics, computational molecular biology, numerical analysis, scientific computation, and theoretical computer science will be considered. Current activities of the group include: combinatorics, operations research, theory of algorithms, numerical analysis, astrophysics, condensed matter physics, computational physics, fluid dynamics, geophysics, nonlinear waves, theoretical and computational molecular biology, material sciences, quantum computing and quantum field theory, but new hiring may involve other areas as well. We request that applications and other materials, including (a) curriculum vitae, (b) research description, and (c) three letters of recommendation, be submitted online at www.mathjobs.org, and preferably well in advance of our deadline of **January 1, 2008** since we will begin our deliberations in December. We request that your letters of reference be submitted by the reviewers online via mathjobs. We will also accept recommendations either as PDF attachments sent to applied@math.mit.edu, or as paper copies mailed to: Applied Mathematics Committee, Room 2-345, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA 02139-4307. Please do not mail or e-mail duplicates of items already submitted via mathjobs. MIT is an Equal Opportunity, Affirmative Action Employer.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, DEPARTMENT OF MATHEMATICS: STATISTICS—Assistant Professor or higher in STATISTICS or APPLIED PROBABILITY—The Department of Mathematics at MIT is seeking to fill combined teaching and research positions at the level of Instructor, Assistant Professor or higher in STATISTICS or APPLIED PROBABILITY beginning September 2008. Appointments are mainly based on exceptional research qualifications. We request that applications and other materials, including (a) curriculum vitae, (b) research description, and (c) three letters of recommendations, be submitted online at www.mathjobs.org. Applications should be complete by **January 1, 2008** to receive full consideration. We request that your letters of reference be submitted by the reviewers online via mathjobs. We will also accept recommendations either as PDF attachments sent to kimm@math.mit.edu, or as paper copies mailed to: Committee on Statistics, Room 2-263, Department of Mathematics, MIT, 77 Massachusetts Ave., Cambridge, MA 02139-4307. Please do not mail or email duplicates of items already submitted via mathjobs. MIT is an Equal Opportunity, Affirmative Action Employer.

NORTHWESTERN UNIVERSITY—Boas Assistant Professor—Department of Mathematics, 2033 Sheridan Road, Evanston, Illinois 60208-2730. Applications are solicited for up to three Ralph Boas assistant professorships of three years each starting September 2008. These are non-tenure track positions with a teaching load of four quarter courses per year. We invite applications from qualified mathematicians in all fields. Applications should be made electronically at www.mathjobs.org and should include (1) the American Mathematical Society Cover Sheet for Academic Employment, (2) a curriculum vitae, (3) a research statement, and (4) three letters of recommendation, one of which discusses the candidate's teaching qualifications. Inquiries may be sent to: boas@math.northwestern.edu. Applications are welcomed at any time, but the review process starts **December 1, 2007**. Northwestern University is an affirmative action, equal opportunity employer committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply.

NORTHWESTERN UNIVERSITY—Tenured or Tenure-track Positions—Department of Mathematics, 2033 Sheridan Road, Evanston, Illinois 60208-2730. Applications are invited for anticipated tenured or tenure-track positions starting September 2008. Priority will be given to exceptionally promising research mathematicians. We invite applications from qualified mathematicians in all fields. Applications should be made electronically at www.mathjobs.org and should include (1) the American Mathematical Society Cover Sheet for Academic Employment, (2) a curriculum vitae, (3) a research statement, and (4) three letters of recommendation, one of which discusses the candidate's teaching qualifications. Inquiries may be sent to: boas@math.northwestern.edu. Applications are welcome at any time. Northwestern University is an affirmative action, equal opportunity employer committed to fostering a diverse faculty; women and minority candidates are especially encouraged to apply.

PURDUE UNIVERSITY—Tenure/tenure track—The Mathematics Department at Purdue University seeks to fill several positions in pure and applied mathematics at the level of assistant professor or higher for August 2008. Appointments will be made based on demonstrated research and teaching qualifications. Ph.D. (or its equivalent) in mathematics or a closely related field is required. Outstanding applicants from various research areas of pure and applied mathematics will be considered. Because the department has several openings in applied mathematics, candidates who have significant research accomplishments in applied mathematics or computational applied mathematics are especially encouraged to apply. Applications should be submitted online through www.mathjobs.org and should include (1) the AMS cover sheet for academic employment, (2) a curriculum

ADVERTISEMENTS

vitae, (3) a research statement, and (4) four letters of recommendation, one of which discusses the candidate's teaching qualifications. Reference letter writers should be asked to submit their letters online through www.mathjobs.org. Direct all inquiries to goeke@math.purdue.edu. Applications are considered on a continuing basis but candidates are urged to apply by **November 1, 2007**. Purdue University is an Affirmative Action/Equal Access/Equal Opportunity Employer. Women and individuals from underrepresented groups are strongly encouraged to apply. The university is supportive of the professional needs of dual career couples. For more information about our department, see www.math.purdue.edu/.

PURDUE UNIVERSITY—Research Assistant Professor—These three-year positions to commence August 2008 are open to mathematicians who demonstrate exceptional research promise and a strong teaching record. Ph.D. by August 18, 2008 is required. Applicants should have research interests in common with Purdue faculty. Applications should be submitted online through www.mathjobs.org and should include (1) the AMS cover sheet for academic employment, (2) a curriculum vitae, (3) a research description, and (4) three letters of recommendation, one of which discusses the candidate's teaching qualifications. Reference letter writers should be asked to submit their letters online through www.mathjobs.org. Direct all inquiries to goeke@math.purdue.edu. Screening of applications will begin **November 1**. Some offers will be made before the end of January 2008. Purdue University is an Affirmative Action/Equal Access/Equal Opportunity Employer. Women and individuals from underrepresented groups are strongly encouraged to apply. For more information about our department, see www.math.purdue.edu/.

SOUTHERN ILLINOIS UNIVERSITY, CARBONDALE—Mathematics Education Position, Department of Mathematics—Applications are invited for a tenure-track position at the rank of assistant professor to begin on August 16, 2008, to support the department's programs in mathematics education as part of an on-going Teaching Excellence in Mathematics and Science initiative. Applicants must demonstrate evidence of, or potential for excellence in research and teaching and have an interest in and aptitude for educating prospective teachers of mathematics. Ph.D. in pure or applied mathematics required by August 15, 2008. The applicant hired into this position will be expected to teach effectively, to maintain a vigorous research program, to seek external research funding in the area of mathematics education, and to develop a satisfactory record of service. Teaching and service duties of the position will involve the training of teachers at the elementary and secondary levels. To apply, please send letter of application, curriculum vitae and statements of research and teaching interests, and have three letters of recommendation sent, to: Mathematics Education Position, Department of Mathematics, Mail Code 4408, Southern Illinois University Carbondale, 1245 Lincoln Drive, Carbondale, IL 62901. Review of applications will begin **September 30, 2007**, and continue until position is filled. SIUC is an affirmative action/equal opportunity employer that strives to enhance its ability to develop and diverse faculty and staff and to increase its potential to serve a diverse student population. All applications are welcomed and encouraged and will receive consideration.

TEXAS A&M UNIVERSITY, THE DEPARTMENT OF MATHEMATICS—The Department of Mathematics anticipates several openings for tenured, tenure-eligible, and visiting faculty positions beginning fall 2008. The field is open, but we particularly seek applications from individuals whose mathematical interests would augment and build upon existing strengths both within the Mathematics Department as well as other departments in the University. Salary, teaching loads and start-up funds are competitive. For a Tenured Position the applicant should have an outstanding research reputation and would be expected to fill a leadership role in the department. An established research program, including success in attracting external funding and supervision of graduate students, and a demonstrated ability and interest in teaching are required. Informal inquiries are welcome. For an Assistant Professorship, we seek strong research potential and evidence of excellence in teaching. Research productivity beyond the doctoral dissertation will normally be expected. We also have several visiting positions available. Our Visiting Assistant Professor positions are for a three year period and carry a three course per year teaching load. They are intended for those who have recently received their Ph.D. and preference will be given to mathematicians whose research interests are close to those of our regular faculty members. Senior Visiting Positions may be for a semester or one year period. The complete dossier should be received by **December 15, 2007**. Early applications are encouraged since the department will start the review process in October, 2007. Applicants should send the completed "AMS Application Cover Sheet," a vita, and arrange to have letters of recommendation sent to: Faculty Hiring, Department of Mathematics, Texas A&M University, College Station, Texas 77843-3368. Further information can be obtained from: http://www.math.tamu.edu/hiring. Texas A&M University is an equal opportunity employer. The University is dedicated to the goal of building a culturally diverse and pluralistic faculty and staff committed to teaching and working in a multicultural environment and strongly encourages applications from women, minorities, individuals with disabilities, and veterans. The University is responsive to the needs of dual career couples.

THE OHIO STATE UNIVERSITY AT NEWARK—Assistant Professor of Statistics—The Ohio State University at Newark invites applications for the position of Assistant Professor of Statistics to start autumn, 2008. Ph.D. in statistics supported by a strong potential for teaching and research. All areas of specialization will be considered, but preference will be given to candidates with research areas compatible with existing expertise on Ohio State's Columbus campus (see http://www.stat.osu.edu). Teaching experience at the college or university level is preferred. Responsibilities include: teaching undergraduate courses in statistics at The Ohio State University at Newark, conducting research, and engaging in service to the campus. Salary: $69,000 to $72,000 (A comprehensive benefits package is included). Posting Date: **July 21, 2007** to Open until filled. Send a CV, cover letter, three letters of reference, and representative reprints to The Ohio State University at Newark, Office of Human Resources, Assistant Professor of Statistics, Search, #329607, 1179 University Drive, Newark, OH, 43055. EEO/AA Employer.

UNIVERSITY OF CALIFORNIA AT BERKELEY, DEPARTMENT OF MATHEMATICS—Berkeley, CA 94720—Tenured or Tenure Track Positions—Pending budget approval, we invite applications for four positions effective July 1, 2008 at either the tenure track (Assistant Professor) or tenured (Associate or Full Professor) level, in pure or applied mathematics. Tenure track applicants are expected to have demonstrated outstanding research potential, normally including major contributions beyond the doctoral dissertation. Such applicants should send a resume, and reprint or preprints, and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. It is the responsibility of the tenure track applicants to make sure that letters of evaluation are sent. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found at http://math.berkeley.edu/employment_academic.html. Tenure applicants are expected to demonstrate leadership in research and should send a curriculum vitae, list of publications, a few selected reprints or preprints, and the names and addresses of three references to The Vice Chair for Faculty Affairs at the above address. Applicants should indicate whether they are applying for an Associate Professor or a Full Professor position. The department will assume responsibility to solicit letters of evaluation and will provide evaluators with a copy of the summary of policies on confidentiality of letters of evaluation. All applicants are requested to use the AMS standardized application form and to indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet. It is available courtesy of the American Mathematical Society. Applications for both Tenure track and Tenure applications must be postmarked by **December 1, 2007**. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

ADVERTISEMENTS

UNIVERSITY OF CALIFORNIA AT BERKELEY, DEPARTMENT OF MATHEMATICS—Berkeley, CA 94720—Charles B. Morrey, Jr. Assistant Professorship – We invite applications for these special (non-tenure-track) positions effective July 1, 2008. The terms of these appointments may range from two to three years. Applicants should have a recent Ph.D., or the equivalent, in an area of pure or applied mathematics. Applicants should send a resume, reprints, preprints and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found at http://math.berkeley.edu/employment_academic.html. We request that applicants use the AMS standardized application form and indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet. It is available courtesy of the American Mathematical Society. Applications must be postmarked by **December 1, 2007**. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

UNIVERSITY OF CALIFORNIA AT BERKELEY, DEPARTMENT OF MATHEMATICS—Berkeley, CA 94720—Temporary Postdoctoral Positions—Several temporary positions beginning in Fall 2008 are anticipated for new and recent Ph.D.'s of any age, in any area of pure or applied mathematics. The terms of these appointments may range from one to three years. Applicants for NSF or other postdoctoral fellowships are encouraged to apply for these positions. Mathematicians whose research interests are close to those of regular department members will be given some preference. Applicants should send a resume and reprints, preprints, and/or dissertation abstract, and ask three people to send letters of evaluation to The Vice Chair for Faculty Affairs at the above address. All letters of evaluation are subject to Berkeley campus policies on confidentiality of letters of evaluation, a summary of which can be found at http://math.berkeley.edu/employment_academic.html. We request that applicants use the AMS standardized application form and indicate their subject area using the AMS subject classification numbers. The form is the Academic Employment in Mathematics, Application Cover Sheet. It is available courtesy of the American Mathematical Society. Applications must be postmarked by **December 1, 2007**. Applications postmarked after the deadline will not be considered. The University of California is an Equal Opportunity, Affirmative Action Employer.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ, MATHEMATICS DEPARTMENT—The Mathematics Department at the University of California, Santa Cruz, solicits applications for two tenure track (Assistant Professor) positions in the areas of Low Dimensional Topology or Algebraic Geometry; pending administrative approval. Duties include mathematical research, undergraduate and graduate teaching and departmental and university service. The standard teaching load is four one-quarter courses per year. The Department invites applications from all qualified mathematicians. Colleagues who can contribute to the diversity and excellence of the academic community through their research, teaching, service and/or leadership are particularly encouraged to apply. Rank & Salary: Assistant Professor (9 month basis, step and salary commensurate with qualifications and experience). Minimum Qualifications: Ph.D. or equivalent in Mathematics conferred by 6/30/08; demonstrated achievements or potential for excellence in research, teaching, professional service and leadership. Position Available: July 1, 2008. Closing Date: Positions are open until filled. Screening will begin with applications postmarked by **November 15, 2007**. To ensure full consideration, applications and letters of recommendation must arrive by the initial screening date. Applicants must submit hard copies of the AMS Cover Sheet, a curriculum vitae, a research statement, a teaching statement, and four letters of recommendation (at least one letter must address teaching experience and ability). Letters of recommendation will be treated as confidential documents. (Please direct your letter writers to the UCSC Confidentiality Statement at http://www2.ucsc.edu/ahr/policies/confstm.htm). All applications should be sent to: Faculty Recruitment Committee, Mathematics Department, University of California, 1156 High Street, Santa Cruz, CA 95064. Please refer to position #839-08 in your reply. Inquiries [not applications] can be sent to mathrcr@ucsc.edu. UCSC is an EEO/AA employer. See http://www.math.ucsc.edu/about/jobs.html for a complete job description.

UNIVERSITY OF MASSACHUSETTS—The Department of Mathematics and Statistics (www.math.umass.edu) invites applications for an Assistant Professor position in Statistics pending budgetary approval. Candidates should have outstanding potential for methodological and applied research in statistics as well as for interdisciplinary collaborations. A commitment to excellent teaching at all levels of the curriculum is also expected. The University of Massachusetts Amherst is developing excellence initiatives in the areas of Biomedicine, Energy Science and Technology, Environment, Nanotechnology, and Science Education. Candidates interested in interdisciplinary work in these and other areas are encouraged to apply. Outstanding candidates at the Associate or Full Professor levels may also be considered should funding become available. In addition, Visiting Assistant Professor/Lecturer positions are expected to be available subject to availability of funds. Applications should be submitted electronically through the AMS website mathjobs.org. Alternatively, applicants may send a curriculum vitae, research and teaching statements, and arrange to have three letters of recommendation sent to: Search Committee, Department of Mathematics and Statistics, Lederle Graduate Research Center, 710 North Pleasant St., Amherst, MA 01003-9305. Review of applications will begin **November 1, 2007**. Applications will continue to be accepted until all positions are filled. Please, refer to Search 28094 for the tenure-track positions and Search 28096 for the Visiting Assistant Professor/Lecturer positions. The department is committed to the development of a diverse faculty, student body, and workplace; women and members of minority groups are encouraged to apply. The University of Massachusetts is an Affirmative Action/ Equal Opportunity Employer.

UNIVERSITY OF MASSACHUSETTS—The Department of Mathematics and Statistics (www.math.umass.edu) invites applications for tenure-track positions in Mathematics at the Assistant Professor level subject to the availability of funds. The search will encompass the following areas: Algebra and Number Theory, Algebraic Geometry, Analysis and Partial Differential Equations, Applied and Computational Mathematics, Differential Geometry and Topology, Mathematical Physics, Probability, and Representation Theory and Lie Theory. Exceptional promise in research and a commitment to outstanding teaching at all levels of the curriculum is expected. The University of Massachusetts Amherst is developing excellence initiatives in the areas of Biomedicine, Energy Science and Technology, Environment, Nanotechnology, and Science Education. Candidates interested in interdisciplinary work in these and other areas are encouraged to apply. In addition, multiple Visiting Assistant Professor (VAP)/Lecturer positions are expected to be available subject to availability of funds. Outstanding candidates at the Associate or Full Professor levels may also be considered should funding become available. Applications should be submitted electronically through the AMS website mathjobs.org. Alternatively, applicants may send a curriculum vitae, research and teaching statements, and arrange to have three letters of recommendation sent to: Search Committee, Department of Mathematics and Statistics, Lederle Graduate Research Center, 710 North Pleasant St., Amherst, MA 01003-9305. Review of applications for tenure-track positions will begin **October 15, 2007** and on November 1, 2007 for VAP/Lecturer positions. Applications will continue to be accepted until all positions are filled. Please, refer to Search 28095 for the tenure-track positions and Search 28096 for the VAP/Lecturer positions. The department is committed to the development of a diverse faculty, student body, and workplace; women and members of minority groups are encouraged to apply. The University of Massachusetts is an Affirmative Action/ Equal Opportunity Employer.

ADVERTISEMENTS

UNIVERSITY OF NOTRE DAME, DEPARTMENT OF MATHEMATICS—Notre Dame, IN 46556—Notre Dame NSF-SUMR Instructorship in Mathematics—The Department of Mathematics of the University of Notre Dame invites applications from recent doctorates (since 2005) for the position of Notre Dame NSF-SUMR Instructor in Mathematics. Candidates in any specialty compatible with the research interests of the department will be considered. The position is for a term of three years beginning August 22, 2008; it is not renewable and is not tenure track. The teaching load is one course per semester. Additional duties include mentoring of Honors Mathematics majors, and applicants should provide evidence of prior experience mentoring undergraduates. The salary will be competitive with those of distinguished instructorships at other AMS Group I universities, and the position includes $10,000 per year of summer research support for each of the first two summers. The position is associated with the department's recent successful five-year NSF grant in the program "Mentoring Through Critical Transition Points." Applications, including a curriculum vitae and a completed AMS standard cover sheet, should be filed through MathJobs (www.MathJobs.org). Applicants should also arrange for at least three letters of recommendation to be submitted through the MathJobs system. These letters should address the applicant's research accomplishments and supply evidence that the applicant has the ability to communicate articulately and teach effectively. Notre Dame is an equal opportunity employer, and we particularly welcome applications from women and minority candidates. The evaluation of candidates will begin December 1, 2007. Information about the department is available at http://math.nd.edu

UNIVERSITY OF OREGON—The University of Oregon department of Mathematics seeks applicants for two full-time tenure related positions at the rank of Assistant Professor, in any area of pure or applied mathematics, including statistics and mathematics education. Minimum qualifications are a PhD in mathematics, statistics, or closely related field, an outstanding research record and evidence of teaching ability. See job announcement at http://hr.uoregon.edu/jobs for more information. Applicants will please provide a standard AMS cover page, CV and three letters of recommendation. We strongly prefer applications and letters to be submitted electronically at MathJobs.org. Application materials may also be mailed directly to: Search Committee, Department of Mathematics, 1222 University of Oregon, Eugene, OR 97403-1222. Deadline for applications: **December 14, 2007**. Candidates should have the ability to work effectively with a diverse community. The University of Oregon is an EO/AA/ADA institution committed to cultural diversity.

ADVERTISEMENTS

2007–2008 Membership: Sponsors and Institutions

Sponsor Dues Schedule

Friend	$1000+
Patron	$2500+
Benefactor	$5000+
Program Sponsor	$10,000+

Institutional Dues Schedule

CATEGORY 1 (includes 10 student memberships; 1 free ad; 25% off additional Newsletter & online ads)	$300
CATEGORY 2a (includes 3 student memberships; 1 free ad; 10% off additional Newsletter & online ads)	$175
CATEGORY 2b (includes 6 student membership; 10% off Newsletter & online ads)	$150

For further information or to join at these levels, see www.awm-math.org.

2007-2008 Individual Membership Form

JOIN ONLINE at www.awm-math.org!

AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

11240 Waples Mill Road
Suite 200
Fairfax, VA 22030
(703) 934-0163
http://www.awm-math.org awm@awm-math.org

LAST NAME _____ FIRST NAME _____ M.I. _____

ADDRESS _____

CITY _____ STATE _____

ZIP/POSTAL CODE _____ COUNTRY _____

AWM's membership year is from October 1 to September 30. Please fill in this information and return it along with your DUES to:

AWM Membership, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030

The *AWM Newsletter* is published six times a year and is part of your membership. Any questions, contact AWM at awm@awm-math.org; (703)934-0163 or refer to our website at: http://www.awm-math.org.

☐ I **do not** want my membership information to be listed in the AWM Public Online Directory.

☐ I **do not** want my AWM membership information to be released for the Combined Membership List.

E-mail: _____ Home Phone: _____ Work Phone: _____

PROFESSIONAL INFORMATION:

Position: _____

Institution/Company:

If student, check one:

☐ Graduate ☐ Undergraduate

If not employed, leave position and institution blank.

City: _____ State/Province: _____ Zip/Postal Code: _____ Country: _____

DEGREES EARNED:

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

Individual Dues Schedule

Please check the appropriate membership category below. Make checks or money order payable to: Association for Women in Mathematics.
NOTE: All checks must be drawn on U.S. Banks and be in U.S. Funds. AWM Membership year is October 1 to September 30.

☐ REGULAR INDIVIDUAL MEMBERSHIP (New Members ONLY).	$ 30	
☐ REGULAR INDIVIDUAL MEMBERSHIP.	$ 55	_____
☐ 2ND FAMILY MEMBERSHIP. (NO newsletter) *Please indicate regular family member:* _____	$ 30	_____
☐ CONTRIBUTING MEMBERSHIP.	$125	_____
☐ RETIRED or PART-TIME EMPLOYED MEMBERSHIP *(circle one)*	$ 30	_____
☐ STUDENT or UNEMPLOYED MEMBERSHIP *(circle one)*	$ 20	_____
☐ ALL FOREIGN MEMBERSHIPS (INCLUDING CANADA & MEXICO)....For additional postage, add.... All payments must be in U.S. Funds using cash, U.S. Postal orders, or checks drawn on U.S. Banks.	$ 10	_____
☐ BENEFACTOR [$2,500] or FRIEND [$1,000] *(circle one)*	$	_____
☐ CONTRIBUTION to the "AWM GENERAL FUND"	$	_____
☐ CONTRIBUTION to the "AWM ALICE T. SCHAFER PRIZE"	$	_____
☐ CONTRIBUTION to the "AWM ANNIVERSARY ENDOWMENT FUND"	$	_____

Dues in excess of $15 and all cash contributions are deductible from federal taxable income when itemizing.

☐ I **do not** want my name to appear in annual lists of members at the contributing level or above.

☐ I **do not** want my name to appear in annual lists of contributors to AWM's funds.

☐ Gift membership from: _____ **TOTAL ENCLOSED $** _____

A W M

Volume 37, Number 5, September–October 2007

ADDRESS CORRECTION FORM

☐ Please change my address to:
☐ Please send membership information to my colleague listed below:
☐ No forwarding address known for the individual listed below (enclose copy of label):
(Please print)

Name _____

Address _____

City _____ State _____ Zip _____

Country (if not U.S.) _____ E-mail Address _____

Position _____ Institution/Org. _____

Telephone: Home _____ Work _____

MAIL TO:

AWM
11240 Waples Mill Road
Suite 200
Fairfax, VA 22030

or E-MAIL:

awm@awm-math.org

☐ I **DO NOT** want my AWM membership information to be released for the **Combined Membership List (CML)**.

AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

AWM
11240 Waples Mill Road
Suite 200
Fairfax, VA 22030

NON-PROFIT ORG.
U.S. POSTAGE
PAID
WASHINGTON, D.C.
PERMIT No. 827

Printed in the U.S.A.