ASSOCIATION FOR WOMEN IN MATHEMATICS

Newsletter

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The purpose of the Association for Women in Mathematics is

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

IN THIS ISSUE

PRESIDENT'S REPORT

Celebrate good times, come on! Let's celebrate

There's a party goin' on right here

A celebration to last throughout the year(s)[1]

Classes have begun, and no doubt everyone has already started looking ahead to the end of the term and final exams. But just a little beyond that are the Joint Mathematics Meetings in New Orleans, January 6–9, 2011, where AWM will kick off its 40th anniversary celebration with special minisymposia centered around the Schafer, Hay, and Michler prizes and a banquet featuring some really fine New Orleans jazz. AWM's first president, Mary Gray, will inaugurate the anniversary celebration with a talk in the Schafer Minisymposium on Thursday, January 6, entitled "Life in the Trenches with Alice: The Early Years," a retrospective on the founding of AWM and on AWM's second president and one of its founding mothers, Alice T. Schafer. Please mark your calendars, book your flights, and plan to join us for all these events.

The new AWM website is up and running, which is yet another cause for celebration. Our megathanks go to the volunteers at Google (Mary J. Kim-Diaz, Alex Garcia, Boris Mizhen, Laurent Tu, and Danny Wildman, and especially to Iris Sánchez Navarro, who orchestrated the team effort), to AWM Web Editor Holly Gaff and AWM Executive Director Maeve McCarthy, and to AWM staff members Glenna Buford, Gerhard Hartl, Jennifer Lewis, and Meredith Stevenson, who contributed considerable time and effort to this project. This issue marks the first time that the *Newsletter* is available online to AWM members. When members renew their AWM membership or first join AWM, most will have the option to continue to receive a hard copy if that is preferred.

The National Science Foundation has awarded $15.5 million to Brown University to create a new mathematics research institute—the Institute for Computational and Experimental Research in Mathematics (ICERM), which will open officially in Fall 2011. The institute's director, AWM President-Elect Jill Pipher, is the first woman to head an NSF-funded institute—kudos Jill on this honor! Jill tells me that the institute has been in the planning stages for over two years. It was during MAA's MathFest in early August that the official announcement was made. ICERM will be located about a mile from the AMS headquarters in Providence, RI, and

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[1] Kool & the Gang's "Celebration" from their 1980 album *Celebrate!*

ASSOCIATION FOR WOMEN IN MATHEMATICS

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

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

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will focus on the interplay between computational experiments, both theoretical and numerical, and basic mathematical research. ICERM will support programs in areas with strong computational components and promote the introduction of experimental methodology into traditionally theoretical fields. Barbara Keyfitz, former AWM President and former Director of the Fields Institute in Toronto, will chair the ICERM Board of Trustees.

ICERM and Brown University will provide the host site for AWM's anniversary conference, *40 Years and Counting: AWM's Celebration of Women in Mathematics,* September 17–18, 2011. Details on this special event will be forthcoming and will be posted on the new (and vastly improved) website as soon as they are available.

ICERM lists two of its objectives as the design of research programs that apply mathematics to solve real-life challenges and the improvement of instruction in kindergarten through grade 12 in view of new computational tools available to mathematicians. There are many exciting directions in computer-enriched education, and no doubt many more will follow through the efforts of ICERM.

As Ta-Nehisi Coates describes in "The Littlest Schoolhouse" in *The Atlantic,* July/August 2010, 82–84, and as Mike Breen discusses in the AMS *Math Digest,* one such direction is *School of One.* Currently a pilot program in three New York City middle schools, *School of One* was developed by Joel Rose, a former Teach for America teacher, in collaboration with Wireless Generation, a Brooklyn computer-programming firm. Designed to replace typical one-size-fits-all teaching which attempts to find the method of teaching geared to an entire class that enables the highest percentage of students to succeed, *School of One* provides each student with an individual curriculum tailored to the child's weaknesses and strengths. At the end of each day, students take diagnostic tests, and the results are conveyed to the New York Department of Education. The computer algorithm there analyzes the test data, creates the student's lesson plan for the next day, and sends it back to the teacher, who can revise it if necessary. Students work independently at a computer or are taught by teachers in small groups or work with online tutors. Preliminary results from the pilot program are encouraging—at one school the percentage of students who performed at grade level in mathematics rose from 9% to 62%.

MAA's MathFest 2010 continued the current trend of record-breaking attendance by attracting more than 1550 participants. Set in the beautiful, historic Omni William Penn Hotel in Pittsburgh in early August, MathFest offered outstanding plenary lectures and loads of activities for one and all. Rebecca Goldin's invited talk, "An Attempt to Turn Geometry into Decorated Graphs," kicked off the meeting in grand style as she described how to transform simply stated but nonetheless challenging problems—e.g., how many lines can intersect four generically placed lines in three-dimensional space?—into graphical problems, which have more likelihood of being solved. Rebecca was the 2008 Falconer Lecturer and currently serves on the AWM Long-Range Planning Committee. Ami Radunskaya gave a wonderful Falconer Lecture, "Mathematical Challenges in the Treatment of Cancer." She began with a brief look back at the life of Dr. Etta Falconer, who is recognized by the lecture series for her profound vision and accomplishments in enhancing the movement of minorities and women into scientific careers. Ami then traced how her own journey to mathematical work on cancer research began over ten years ago when Dr. Charles Wiseman, an oncologist and immunologist at St. Vincent's Cancer Treatment Center in Los Angeles, convened a group of physicians to learn about mathematics

and cancer immunology. One of the doctors contacted Ami for help in interpreting the mathematics in papers on the subject. She in turn contacted Professor Lisette de Pillis at Harvey Mudd College, and a very productive collaboration on tumor-immune modeling ensued. One focus of their work is research involving the asynchronous response of tumors to chemotherapy in order to answer such questions as: Why do some tumors grow during treatment and others shrink after the treatment stops? MAA Associate Executive Director Michael Pearson is spearheading an experimental project to make the recordings of the MathFest invited lectures available on a trial basis. So, if you missed the lectures or just would like to enjoy them again, they are available through the MAA website (http://www.maa.org/mathfest/).

At MathFest, AWM organized a panel, "The Single Mathematician," moderated by AWM Executive Director Maeve McCarthy and featuring panelists Julie Barnes (Western Carolina University), Ellen Kirkman (Wake Forest University), and Mary Beth Ruskai (Tufts University). In her article in the next issue of the newsletter, co-organizer Maura Mast, former AWM clerk, will give an excellent account of the lively panel and ensuing discussion that tackled a wide range of issues, including: "Is a single department member more likely to get assigned classes at 8 a.m. or 4 p.m.?" Almost half the audience was male.

Since its beginning in 1994 Project NExT (New Experiences in Teaching) has been a highly successful professional development program for new or recent Ph.D.'s in the mathematical sciences. Held two days prior to MathFest, the program addresses all aspects of an academic career, and this year it presented a panel, "Joining the Mathematical Community." AWM Executive Committee member Sarah Greenwald, a professor at Appalachian State University and an expert on *The Simpsons* television show, spoke about the benefits of joining AWM and about her own motivation for giving so much time and effort to the organization. Sarah's service has run the gamut from organizing a Sonia Kovalevsky Day for high school students to assembling and moderating panels at meetings, serving on the *Newsletter* Editorial Team, writing articles for the *Newsletter,* and chairing AWM's Policy and Advocacy Committee. We hope her story will motivate others to follow in her footsteps—Sarah, a big thank you!

On August 19, President Pratibha Patil (the 12th President of the Republic of India and first woman to hold that office) presented the Fields Medals, Nevanlinna and Gauss Prizes, and the Chern Medal Award at the opening ceremony of the International Congress of Mathematicians (ICM) in Hyderabad, India. Alas, no women were awarded any of these prizes. The ICM had special significance for Indian mathematics, as it coincided with the centenary of the founding of the Indian Mathematical Society and the silver jubilee year of the Ramanujan Mathematical Society. President Patil remarked that India's engagement with mathematics goes back some three thousand years and quoted an ancient Sanskrit verse that translated states, "Like the crest of the peacock and the jewel of the serpent, Mathematics stands at the helm of all sciences."

Several years ago the Indian Academy of Sciences in Bangalore formed a Women in Science panel to address the lack of diversity in the sciences and the small number of women electing to pursue scientific careers. To try to answer the question "What does it take for a woman to have a successful career in science?" the panel asked Indian women scientists to write about themselves; what led them to science; and what motivated them to continue their careers, often against great odds. In

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Membership Dues
Membership runs from Oct. 1 to Sept. 30
Individual: $55 **Family (no newsletter):** $30
Contributing: $125
New member, new SIAM reciprocal member, retired, part-time: $30
Student, unemployed, outreach: $20
Foreign memberships: $10 addt'l. for postage
Dues in excess of $15 and all contributions are deductible from federal taxable income when itemizing.

Institutional Membership Levels
Category 1: $300
Category 2: $300
Category 3: $175
Category 4: $150
See www.awm-math.org for details on free ads, free student memberships, and ad discounts.

Sponsorship Levels
α **(alpha) Circle:** $5000+
β **(beta) Circle:** $2500–$4999
Other levels available.
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 S&H ($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 Ads—AWM will accept ads 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 $110 for a basic four-line ad. Additional lines are $13 each. See the AWM website for *Newsletter* display ad rates.

Newsletter Deadlines
Editorial: 24th of January, March, May, July, September, November
Ads: Feb. 1 for March–April, April 1 for May–June, June 1 for July–Aug., Aug. 1 for Sept.–Oct., Oct. 1 for Nov.–Dec., Dec. 1 for Jan.–Feb.

Addresses
Send all **Newsletter** material **except ads and material for columns** to Anne Leggett, e-mail: leggett@member.ams.org; phone: 773-508-3554; fax: 773-508-2123. Send all **book review** material to Marge Bayer, e-mail: bayer@math.ku.edu; fax: 785-864-5255. Send all **media column** material to Sarah Greenwald, e-mail: greenwaldsj@appstate.edu; and Alice Silverberg, e-mail asilverb@math.uci.edu. Send everything else, **including ads and address changes**, to AWM, fax: 703-359-7562; e-mail awm@awm-math.org. Visit www.awm-math.org for snail mail addresses.

2008, the academy published *Lilivati's Daughters: The Women Scientists of India,* a collection of 100 moving essays (both biographical and autobiographical) edited by two members of the panel, Rohini Godbole and Ram Ramaswamy, about the lives of Indian women in anthropology, biology, chemistry, computer science, geophysics, mathematics, and medicine. One of the mathematicians featured is Raman Parimala, Arts and Sciences Distinguished Professor of Mathematics at Emory University, who presented an invited talk at the Hyderabad ICM. The title of the book is drawn from *The Lilavati,* a treatise in which the renowned twelfth-century Indian mathematician Bhaskaracharya, head astronomer at the royal observatory in Ujjain, addresses a number of mathematical problems to his bright, inquisitive daughter Lilavati. The legend is that she never married, but that her intellectual legacy lives on in her "daughters"—the women scientists who succeeded her. As one reviewer of the volume remarked, "I find echoes from my past in every chapter of the book." Indeed, the essays tell a universal story in what they say and what they don't say.

The International Congress of Women Mathematicians (ICWM) organized by the European Women in Mathematics (EWM) with support from AWM and the European Mathematical Society, was held two days prior to the start of the ICM on the campus of the University of Hyderabad. The first afternoon of the two-day meeting was dedicated to a panel discussion, "Women Mathematicians around the World," organized by Dr. Caroline Series of Warwick University and chaired by Dr. Beatrice Pelloni of the University of Reading in the UK. (An article by Pelloni on the panel appears in this issue.) Carol Wood, former AWM President, Chair of the AMS Board of Trustees and Chair of the U.S. National Committee for Mathematics, represented AWM on the panel and introduced AWM and its many activities to the over 200 participants from around the world. The discussion, while often focused on social issues that make it difficult for young women to pursue careers in science and technology, highlighted the worldwide need to provide information to women interested in studying and having careers in mathematics. A report on the discussion and all the presentations will be posted on the EWM website.

The International Mathematical Union (IMU) recently confirmed Ingrid Daubechies as its next president and Christiane Rousseau as one of two vice presidents who will take office in 2011. Professor Daubechies, a member of the National Academy of Sciences and winner of the AMS Steele Prize for Mathematical Exposition and the AMS Ruth Lyttle Satter Prize, is the first woman to head the IMU. Her volume *Ten Lectures on Wavelets* in the CBMS-NSF Regional Conference Series in Applied Mathematics is the all-time best seller in that series by a healthy margin. Rousseau, professor of mathematics at Université de Montréal, served as president of the Canadian Mathematical Society (CMS) from 2002 to 2004 and has been director of the Centre de Recherches Mathématiques in Montréal. In 2000 she coordinated the campaign "Operation Metro 2000" during the World Mathematical Year 2000, making Montréal the first city in the world to display mathematics posters in its subway. In 2009 she was honored with the Graham Wright Award for Distinguished Service from the CMS for her sustained and significant contributions to the Canadian mathematical community. We are excited about the leadership these two distinguished mathematicians bring to the international mathematical scene and are optimistic about the impact they will have on women in mathematics. Congratulations Ingrid! Congratulations Christiane!

ASSOCIATION FOR WOMEN IN MATHEMATICS

AWM ONLINE

AWM Web Editor
Holly Gaff
hgaff@odu.edu

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

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

AWM DEADLINES

NSF-AWM Travel Grants:
February 1, 2011 and May 1, 2011

NSF-AWM Mentoring Travel Grants:
February 1, 2011

Sonia Kovalevsky High School and Middle School Mathematics Days: February 4, 2011

AWM Essay Contest: February 27, 2011

AWM Louise Hay Award: April 30, 2011

AWM M. Gweneth Humphreys Award:
April 30, 2011

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We were deeply saddened to learn that Gerard McDonald, husband of Newsletter Editor Anne Leggett, died on September 18 after battling cancer for over a year. Gerard, for many years a professor of mathematics at Loyola University Chicago and a dedicated AWM member, has been a source of encouragement, technical advice, sage counsel, and humor. We extend our heartfelt sympathy to the Leggett and McDonald families.

Georgia Benkart

Georgia Benkart
Madison, WI
September 20, 2010

Georgia Benkart

Susan Montgomery Named 2011 Noether Lecturer

The Association for Women in Mathematics is pleased to announce that Susan Montgomery will deliver the Noether Lecture at the 2011 Joint Mathematics Meetings. Montgomery, professor at the University of Southern California, was selected for this honor because of her contributions to noncommutative algebra.

Montgomery received her B.A. from the University of Michigan and her Ph.D. in mathematics from the University of Chicago. She has been on the faculty of the University of Southern California since 1970. Montgomery has also spent sabbaticals at the Hebrew University of Jerusalem, the University of Leeds, the University of Munich, the Mittag-Leffler Institute, and MSRI.

In 1984 she was awarded a John S. Guggenheim Memorial Foundation Fellowship, and in 1987 she received a Raubenheimer Outstanding Faculty Award from USC.

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NSF-AWM Travel Grants for Women

Mathematics Travel Grants. Enabling women mathematicians to attend conferences in their fields provides them a valuable opportunity to advance their research activities and their visibility in the research community. Having more women attend such meetings also increases the size of the pool from which speakers at subsequent meetings may be drawn and thus addresses the persistent problem of the absence of women speakers at some research conferences. 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.

Mathematics Education Travel Grants. There are a variety of reasons to encourage interaction between mathematicians and educational researchers. National reports recommend encouraging collaboration between mathematicians and researchers in education and related fields in order to improve the education of teachers and students. Communication between mathematicians and educational researchers is often poor and second-hand accounts of research in education can be misleading. Particularly relevant to the AWM is the fact that high-profile panels of mathematicians and educational researchers rarely include women mathematicians. The Mathematics Education Research Travel Grants provide full or partial support for travel and subsistence for

- mathematicians attending a research conference in mathematics education or related field.
- researchers in mathematics education or related field attending a mathematics conference.

Selection Procedure. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians and mathematics education researchers appointed by the AWM. A maximum of $1500 for domestic travel and of $2000 for foreign travel will be funded. For foreign travel, US air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

Eligibility and Applications. These travel funds are provided by the Division of Mathematical Sciences (DMS) of the National Science Foundation. The conference or the applicant's research must be in an area supported by DMS. Applicants must be women holding a doctorate (or equivalent) and with a work address in the USA (or home address, in the case of unemployed applicants). Please see the website (http://www.awm-math.org/travelgrants.html) for further details and do not hesitate to contact Jennifer Lewis at 703-934-0163, ext. 213 for guidance.

Deadlines. There are three award periods per year. Applications are due **February 1**, **May 1**, and **October 1**.

2011 Noether Lecturer *continued from page 5*

She has given an AMS Invited Address at the Joint Mathematics Meeting in 1984 and at a sectional meeting in 2005. In 2009, she gave a plenary lecture at the summer meeting of the Canadian Mathematical Society. She has also given numerous lectures at meetings and universities around the world.

Montgomery was the Principal Lecturer at the Conference Board of the Mathematical Sciences conference in 1992 on Hopf Algebras, and her CBMS monograph *Hopf Algebras and their Actions on Rings* is widely cited.

She served as an editor for the *Journal of Algebra* for over 20 years. She was also an editor for the AMS *Proceedings,* AMS *Surveys and Monographs,* and *Advances in Math* and currently is on the editorial boards of *Algebras and Representation Theory* and *Algebra and Number Theory.*

Susan Montgomery

She has been very active in the American Mathematical Society, serving on the Board of Trustees for 10 years. She has also served on the Council, the Policy Committee on Publications, and most recently on the Nominating Committee. She was also a member of the Board on Mathematical Sciences (BMS), serving one year on the Executive Committee.

Montgomery has been active in the Association for Women in Mathematics for 35 years. She was a member of the Executive Committee from 1975–1976. She served on the Nominating Committee in 1982 (as chair) and again in 2009. She was on the committee to select the Noether Lecturer from 1990–1992. At USC, she has served on the Provost's Committee on Women in Science and Engineering since 2000. However, she regards her main contribution to women in mathematics to be doing mathematics with her women coauthors and Ph.D. students.

Montgomery's early research was on group action on rings, but since the 1980s, she has worked primarily in Hopf algebras, their representations, and their actions on other algebras.

The 2011 Joint Mathematics Meetings will be held January 6–9 in New Orleans, LA. The lecture honors Emmy Noether (1882–1935), one of the great mathematicians of her time. She worked and struggled for what she loved and believed in. Her life and work remain a tremendous inspiration. Recent Noether Lecturers include Ingrid Daubechies, Karen Vogtmann, Audrey Terras, Fan Chung Graham, and Carolyn Gordon.

CALL FOR NOMINATIONS

2012 M. Gweneth Humphreys Award

The Executive Committee of the Association for Women in Mathematics has established a prize in memory of M. Gweneth Humphreys to recognize outstanding mentorship activities. This prize will be awarded annually to a mathematics teacher (female or male) who has encouraged female undergraduate students to pursue mathematical careers and/or the study of mathematics at the graduate level. The recipient will receive a cash prize and honorary plaque and will be featured in an article in the AWM *Newsletter.* The award is open to all regardless of nationality and citizenship. Nominees must be living at the time of their nomination.

The award is named for M. Gweneth Humphreys (1911–2006). Professor Humphreys graduated with honors in mathematics from the University of British Columbia in 1932, earning the prestigious Governor General's Gold Medal at graduation. After receiving her master's degree from Smith College in 1933, Humphreys earned her Ph.D. at age 23 from the University of Chicago in 1935. She taught mathematics to women for her entire career, first at Mount St. Scholastica College, then for several years at Sophie Newcomb College, and finally for over thirty years at Randolph Macon Woman's College. This award, funded by contributions from her former students and colleagues at Randolph-Macon Woman's College, recognizes her commitment to and her profound influence on undergraduate students of mathematics.

The nomination documents should include: a nomination cover sheet (available at www.awm-math.org/humphreysaward.html); a letter of nomination explaining why the nominee qualifies for the award; the nominee's vita; a list of female students mentored by the nominee during their undergraduate years, with a brief account of their post-baccalaureate mathematical careers and/or graduate study in the mathematical sciences; supporting letters from colleagues and/or students; at least one letter from a current or former student of the candidate must be included.

Nomination materials for this award should be sent to awm@awm-math.org. Nominations must be received by **April 30, 2011** and will be kept active for three years at the request of the nominator. For more information, phone (703) 934-0163, email awm@awm-math.org or visit www.awm-math.org/humphreysaward.html.

MEDIA COLUMN

In addition to longer reviews for the media column, we invite you to watch for and submit short snippets of instances of women in mathematics in the media (WIMM Watch). Please submit to the Media Column Editors: Sarah J. Greenwald, Appalachian State University, greenwaldsj@appstate.edu *and Alice Silverberg, University of California, Irvine,* asilverb@math.uci.edu.

Mathematics + Mystery = TV Entertainment

Kristine Roinestad, Georgetown College, Georgetown, KY

TNT's new series *Rizzoli and Isles* is about two best friends. Jane Rizzoli (played by Angie Harmon) is the only female detective in the Boston Police Department's homicide division, and Dr. Maura Isles (played by Sasha Alexander) is a forensic pathologist.

Isles is a thinker and a scholar who integrates logic and science in both her professional and personal lives. And she doesn't quite understand why others don't seem to grasp seemingly obvious scientific connections. In the episode entitled "I Kissed a Girl," Isles says, "Have you ever tried to appreciate Euler's number *e*? You know ... the beautiful equation that connects three constants of mathematics? Have you?" Although Sasha Alexander's lines contain many inconsistencies, and I cringed when I heard her mispronounce "Euler," Isles shines light on the use of mathematics in the world of crime solving.

In a later episode, entitled "The Beast in Me," the differences in approaches taken by Isles and detectives are illustrated. The slaying of an artist who produces drawings reminiscent of M.C. Escher is the main focus of the story. The detectives in charge of the murder investigation immediately assume the drawings are computer generated because of their precision. But Isles knows better. "Oh, they are done by hand," she says. "And this may be evidence of a very high IQ … extensive use of polyhedra … geometric designs in three dimensions with flat faces and straight edges."

Confused by Isles' explanation, Rizzoli and her fellow investigators only know that the drawings are "cool." Carefully reviewing the artwork, Isles is further impressed by the drawings, although she wonders why the artist seems to be sketching the same building and the same view over and over. "These drawings are precisely to scale, so with a little trigonometry and some spherical geometry" she is certain they will be able to find the building the artist used as his model. And they do!

As a role model for the mathematical sciences, hopefully Isles can entice more young women to consider entering the field. Not surprisingly, she has many admirable stereotypical traits of a scientist/mathematician—she is intelligent, analytical, thorough, precise, and persistent. OK ... so she's also socially inept ... you can't have everything!

EDUCATION COLUMN

The Affective Domain

Jackie Dewar, Professor of Mathematics and Interim Director of Faculty Development, Loyola Marymount University, Los Angeles, CA

As mathematicians, we bring to our teaching disciplinary background from a field that investigates patterns using logic, abstraction and generalization. The content and methods of the field itself little dispose us to consider the influence of the affective domain on our students' learning, let alone its influence on our own career choices and practice. This Education Column will briefly describe the affective domain, discuss some of its influences and provide resources for further consideration.

What is the affective domain? Relative to instruction, the affective domain refers to the attitudes, beliefs, values and motivation of both students and faculty. Studies across many fields have demonstrated that positive attitudes, beliefs, values and motivation can promote improvements in learning. To gain a broader perspective on this topic requires a review of the history of something called "Bloom's taxonomy."

Work on the development of a classification of thinking behaviors critical to the learning processes was initiated at the 1948 Convention of the American Psychological Association by Benjamin Bloom and a group of educators. This group worked with dedication for a long time on this task. Eight years later, the affective domain appeared as one of three domains (cognitive, affective and psychomotor) described in Bloom's taxonomy of educational objectives (1956). The best-known of the three domains is Bloom's cognitive domain classification, which originally contained the elements of Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. This classification was revised in 2001 to reflect the following dimensions: Remembering, Understanding, Applying, Analyzing, Evaluating and Creating. Both the

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original and revised versions are used in many contexts, but most notably in course and curriculum planning across all levels of education. Whether to view Bloom's cognitive taxonomy as a *hierarchy* of learning objectives remains controversial to this day.

The elements of the affective domain (Krathwohl, Bloom, & Masia, 1964) attempt to describe awareness and growth in attitudes, emotion, and values, and include the dimensions labeled as Receiving, Responding, Valuing, Organization, and Characterization. These are ordered according to the degree of internalization of attitudes or values, moving from willingness to receive input or opinions to having a value system that governs or aligns with behavior. Bloom and his colleagues never created categories for skills in the psychomotor domain, but since then other educators have created their own psychomotor taxonomies. Of particular interest to anyone using technology for instruction is a reinterpretation of Bloom's taxonomy for the digital age.[1] This abbreviated history hardly does justice to these taxonomies, but much more is available on the internet to the interested reader.

Let me now give two examples of the affective influences on students of mathematics. A recent Education Column in this newsletter (Hale, Casad, & Wachs, 2010) discussed the influence of stereotype threat on student performance (Steele, 1997). To review, stereotype threat (ST) refers to the phenomenon wherein awareness of a negative stereotype about a group in a particular domain results in diminished performance by members of that group. In particular, in a variety of studies, women performing math problems after being told that gender differences in math exist (i.e., stereotype threat) performed worse than a control group of women who had not been told such differences exist (Spencer, Steele, & Quinn, 1999). Naturally mathematicians and scientists would like to understand the mechanism underlying this phenomenon (resulting from an intentional manipulation of beliefs about women's performance in mathematics). Beilock, Rydell and McConnell (2007) have shown in the domain of mathematics that ST interferes with "working memory." Anyone interested in taking steps to reduce ST in their classrooms can consult http://reducingstereotypethreat.org/.

A second example is provided by Beilock, Gunderson, Ramirez and Levine (2010). They found that high math anxiety on the part of *female* first and second grade elementary teachers carried negative consequences for the math achievement of their *female* students. Here, it seems math anxious teachers are exerting an unintentional influence on girls' beliefs about who is good at math (not women, because their female elementary teachers are anxious about math), thereby inducing a stereotype threat.

How available to teaching mathematicians is information on the affective domain and how to address it in college-level classrooms? It's hard to say. The Math Forum at Drexel has a section[2] on Psychological/Affective Issues, with 55 links, most of which address K–12 rather than collegiate level students. Certainly affective issues have been of concern to mathematics education researchers and have appeared with regularity in the literature (McLeod, 1994). One accessible source for bringing theory to practice when teaching collegiate-level mathematics is Carlson and Rasmussen's *Making the Connection: Research and Teaching in Undergraduate Mathematics.* This MAA Notes volume from 2008 is intended to convey insights from mathematics education research to teaching mathematicians who want to enhance the learning and achievement of students in their undergraduate mathematics courses. The table of contents suggests that perhaps 3 of the 23 chapters address affective issues. In examining the call for papers to the MAA Contributed Paper Sessions for the 2011 Joint Mathematics Meetings, a faculty member already aware of affective issues in instruction might see potential opportunities to present or listen to talks on this topic in a few sessions (e.g., in sessions on developmental mathematics, math circles, or humanistic mathematics), but no session's call includes mention of affective issues in an obvious way. So it seems that the attention of teaching mathematicians is not being drawn to affective influences, at least not to the extent of our colleagues in the sciences, especially the geosciences.

I mention the geosciences because of the work of the National Association of Geoscience Teachers, the professional society focused on the teaching of geosciences at all levels, including K–12 teachers, college and university faculty, and educators working in informal science programs. Their website[3] of online professional development resources recently won the Science Prize for Online Resources in Education (SPORE).[4] An entire section of it is devoted to ways in which "the affective domain can significantly enhance, inhibit or even prevent student learning."[5] The geoscientists tell us, "Teachers can increase their effectiveness by considering the affective domain in planning courses, delivering lectures and activities, and assessing student learning." And their site

[1] http://edorigami.wikispaces.com/Bloom%27s+Digital+Taxonomy

[2] http://mathforum.org/library/ed_topics/psych_affective/

[3] http://serc.carleton.edu/NAGTWorkshops/index.html

[4] http://www.sciencemag.org/feature/data/prizes/spore

[5] http://serc.carleton.edu/NAGTWorkshops/affective

provides a rich collection of resources for exploring affective issues, including a framework for applying the affective domain in science education and an annotated bibliography with accessible articles. See, for example, Nuhfer (2005), which provides useful background on the relationship between the cognitive and affective domains and encourages faculty to recognize that the affective domain is "legitimate, powerful, and even useful." It gives practical examples of how one's teaching can be improved in the affective domain, which may result in increased self-awareness, a more positive classroom environment and a better connection with students.

It turns out that, as faculty, our own individual choices about professional development (PD) related to our teaching are likely influenced by unexamined attitudes and beliefs. New requirements for assessment and evaluation, technology use, and experiential learning, new knowledge about how students learn, and an increasingly diverse student population suggest that faculty members should be acquiring new teaching skills or improving existing ones. A necessary first step is for campuses or professional societies to provide PD resources (Sorcinelli, Austin, Eddy, & Beach, 2005), but faculty members must be willing to avail themselves of such opportunities. If you go to professional development workshops on your campus, how many times do you meet new colleagues as opposed to seeing all the same faces in the workshop? A recent study (Thadani, Breland, & Dewar, 2010) established a relationship between faculty members' theories about the (im)possibility of improving anyone's teaching (that is, are teaching skills mostly a fixed entity or are they malleable; that is, are good teachers born, not made?) and their self-reported interest in both the amount and the types of PD they would select. Faculty members who held a fixed entity view of teaching skills reported less interest in PD, as evidenced by lower overall interest ratings and fewer PD opportunities selected from a list of possibilities. Furthermore, members of the fixed-entity group had significantly lower interest in three PD opportunities that would involve high scrutiny of the instructors' own teaching practices, namely classroom observation, videotaping, or peer review of student work. It seems that faculty members may behave remarkably like their students when presented with learning opportunities.

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BOOK REVIEW

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

What's Math Got to Do with It? Jo Boaler, Penguin Group, 2009, ISBN 978-0-14-311571-7 (pbk.)

Reviewer: Teri Perl, Ph.D.; past president, Expanding Your Horizons Network; author, Math Equals *and* Women & Numbers; *co-author,* Notable Women in Mathematics

It seems hard to believe that a mathematics educator would not previously have come in contact with many of the ideas and resources in Jo Boaler's new book *What's Math Got To Do with It?* But I suspect that tons of this material will prove to be totally new to parents and other non-educators who want to help children learn to love what many folks call their least favorite subject. There definitely is a great deal here for the mathematics educator as well, including several items that I found totally surprising, and important. For example, "When girls were ahead of boys in mathematics and science (and all other subjects) in England, alarm bells rang everywhere. Suddenly there was government money to look into gender relations in math and science, *something that had never happened when girls were underachieving*." (Boaler, who was a researcher and professor at Stanford University for several years, is British, and is currently the Marie Curie Professor of Mathematics Education on the faculty of Sussex University.)

In her fifth chapter, entitled "Stuck in the Slow Lane" and subtitled "How American Grouping Systems Perpetuate Low Achievement," Boaler introduces information from the 1999 Third International Mathematics and Science Study (TIMSS) where researchers collected a wide range of data on eighth grade students in thirty-eight countries. The U.S. was in nineteenth place in math achievement. Analysts of the TIMSS database also uncovered some interesting facts about ability grouping. The U.S., with the most achievement variability, had the most tracking. On the other hand, Korea, the highest-achieving country in the group, had the least tracking and most equal grouping. Boaler goes on to offer a variety of reasons to support her conclusion that *ability grouping is a bad idea. And then she drops the bombshell, totally new to me, that ability grouping is* **illegal** *in many countries in the world, including Finland, the country that topped the world in the latest international achievement tests.*

I found Boaler's information about the rich new emerging area of brain research interesting and important. The implications of this research for sex differences in learning in general, and mathematics education in particular, are potentially significant. It has been known for some time that men's brains are larger than women's; it is also known that their brain cells are packed less densely. Thus, despite the size difference, women and men have "exactly the same number of brain cells and so have equal intelligence." Boaler describes how these new technologies that allow neuroscientists to map the actual workings of the brain show that women and men *use different brain areas to solve problems.* This is true even when they score exactly the same on tests. After much discussion about the possible implications of this brain research on how girls and boys differ in how they best learn mathematics, and admittedly little supported by educational research studies, Boaler concludes that "brain differences are not so compelling that they justify teaching girls and boys separately."

Several shibboleths are introduced and contradicted. For example, Boaler goes into some detail about the differences between school math and life math. So much of what most people think mathematics to be, is completely counter to the way that mathematics really works. The pathways to real problem solving are too often hidden from the student and the non-mathematician. When I studied formal proofs in high school geometry, I can remember wondering how *they* knew to start out the way they did to end up with the final QED conclusion. It was a long time before I realized that the methodology that was being taught in school was actually the way the proof is *reported,* not the way it is actually developed.

The author shares other interesting examples of the difference between mathematics as it is perceived in school and in the outside world. Often teachers rail at students to "do their own work." Mathematics as practiced by mathematicians, however, is frequently a collaborative, not a solitary, activity. In the workplace, teamwork is often emphasized as the way to go.

Boaler promotes the importance of asking questions … and the importance of teachers' following up further with questions like "why do you think that." She notes however that this works only after students become comfortable with *sharing* their *ideas* rather than worrying about giving the right answer.

When an official in the UK was commissioned to examine the mathematics needed in the workplace, the investigator found that *estimation* was the most useful mathematical skill. Yet when children who have experienced traditional math classes are asked to estimate, they are often completely flummoxed and try to work out exact answers, then round them off to look like estimates. It is hard for them to appreciate the huge role that estimation and guessing plays in mathematical problem solving. In fact, real mathematicians actually *encourage* guessing.

As the book's subtitle *How parents and teachers can help children learn to love their least favorite subject* suggests, its pages abound with suggested resources to help make this happen. Boaler includes a treasure trove of puzzles and games to help parents who are eager to give their child that good mathematical head start. In fact, Appendix C is totally devoted to "Recommended Math Puzzle Books."

Several of many references include books that were important to me when I read them quite a while ago, such as those of Martin Gardner from 1987, and newer titles from 2000 and 2001 that I have not yet seen. W. W. Sawyer's *Prelude to Mathematics,* which I'd all but forgotten, turns up, along with old favorites like *Family Math* from the *Equals* program at the Lawrence Hall of Science. I can still remember how important the Sawyer book was to me when I was trying to understand the fascination that mathematics had for mathematicians. I personally *believed* this was the case. I just *didn't* personally *understand why,* and I was diligently trying to find out.

In summary then, *What's Math Got To Do with It?* is a very well written, easy to read, abundantly resourced paperback book that contains a treasure trove of information and ideas for both parent and teacher, much of it based on solid research. This will be a much appreciated book to be shared with colleagues, parents, friends and relations.

John Tierney and *The Mathematics of Sex:* Part 2: Bias and Other Forms of Gender Inequality

Cathy Kessel, AWM Education Committee Chair

In June, the *New York Times* published two articles on women in science by John Tierney: "Daring to Discuss Women in Science" (June 8) and "Legislation Won't Close Gender Gap in Sciences" (June 15). These articles don't give complete arguments, but they might lead readers to infer what I'll call Claim 1 and Claim 2.

Claim 1 concerns "new evidence supporting Dr. Summers's controversial hypothesis about differences in the sexes' aptitude for math and science." I've discussed it in part 1 of this article. In brief, "supporting" should be "consistent with."

Claim 2 concerns bias. "Careful studies" show that "female scientists fare as well as, if not better than, their male counterparts in receiving academic promotions and research grants." From this, readers are apparently intended to infer that there is no gender bias in science. Tierney then asks, "So why are women still such a minority in math-oriented sciences?" He answers: There are "biological differences in math aptitude" (cf. Claim 1). However, "differences in aptitude are not the primary cause of the gender gap in academic science," but "different personal preferences and choices of men and women." This opinion is attributed to Stephen Ceci and Wendy Williams, two psychologists who have written a book called *The Mathematics of Sex: How Biology and Society Conspire to Limit Talented Women and Girls.* I'll abbreviate the latter as MOS.

In my view, there are serious flaws in MOS, Claim 2, and the associated article. Some of the article's statements are ambiguous and some are wrong. Some sequences of true statements are misleading. I've noted such local mistakes, omissions, and ambiguities on my blog, http://mathedck.wordpress.com/.

Here, I'll discuss more global issues: fellowship and funding decisions, hiring statistics, and forms of inequality that receive little or no attention from Tierney and MOS. In my view, all of these should be considered in explaining the "different personal preferences and choices of men and women."

Fellowships and funding. In discussing bias, both Tierney and MOS give a lot of attention to Wold and Wennerås's study of the Swedish Medical Research Council post-doctoral fellowships. Agnes Wold (an immunologist) and Christine Wennerås (a microbiologist) analyzed 114 applications and their scores. Three factors were independent determinants of "scientific competence" scores: scientific productivity (number of articles, etc.), gender (men received higher scores than women with the same productivity), and nepotism—those affiliated with a review committee member received higher scores than others with the same productivity.[1]

In 1997, the resulting article, "Nepotism and Sexism in Peer Review," made headlines when it was published in *Nature.*

"But how representative was that one Swedish study of 114 applicants?" asks Tierney. He notes that a 2004 follow-up study did not find evidence of bias. MOS is skeptical too, telling readers that gender discrimination during grant applications is "a hypothesis in need of convergent empirical support."

Neither mentions the "Wold Effect." In 2000, a European Union report noted, "The study results were devastating for

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[1] The nepotism effect seems quite subtle. Committee members did not review applications from people with whom they were affiliated.

the research community and led to widespread reforms."[2] These reforms were not simply knee-jerk responses, but occurred after research councils conducted their own studies.

Both Tierney and MOS contrast Wold and Wennerås's findings for fellowships with those of large-scale studies of grant proposals—and overlook some details. For example, both discuss the 2005 RAND study of NSF and other federal agencies. As I wrote in 2007,

> 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."[3]

Not only may the data and decade be different, but, as some readers may already have noticed, the processes examined may be different. Grant proposals differ from post-doc applications. For example, letters of reference are a fairly standard requirement for post-doc applications in the U.S. One of the large-scale studies mentioned by Tierney notes,

> Gender differences in peer reviews of *fellowship applications* are somewhat more ambiguous [than for grant applications]. *There is a small, but highly statistically significant difference in favor of men.* Hence, the juxtaposition between the gender differences for research grants and fellowship applications supports our a priori hypothesis. (italics added)

The hypothesis is: Gender differences[4] will be larger for fellowship applications than for grant applications because

> the more concrete information that reviewers have about applicants, the less influence superfluous characteristics such as gender are likely to have. Grant applications are typically written by established researchers with established research track records and place a strong emphasis on research track record as an indication that the proposed research will be fruitful. In contrast, fellowship applications are typically written by early-career researchers.[5]

This study and others suggest that evidence of bias is less likely to appear in evaluation processes that reduce irrelevant information and require the same kinds of information from each applicant. Fellowship applications, hiring, promotion, awards, and honors—processes that are often less structured—are likely to afford more bias. Changing these processes to eliminate irrelevant information, such as how often an applicant smiles,[6] may reduce the effect of evaluators' biases.

Tierney does not discuss such ideas. MOS concludes that "biases, to the extent they exist, are small"—but not too small to study.[7] Moreover, "even a tiny degree of discrimination or unconscious barriers can be deleterious to women's progress in the academy" because small biases can accumulate over time, resulting in large differences in outcomes.

Hiring statistics. MOS is based on a research article, the result of a three-year review of 400 studies from seven fields.[8] It was published in what MOS calls "the premier review journal in psychology" in 2009.

When I read the article, I was surprised to see that the first paragraph gives statistics with no date and no source, and says, "Women are not being hired as assistant professors at the rate that they are getting Ph.D. degrees." That was (for many fields) the finding of a survey conducted in 2002 for the "top 50" departments, but had changed by 2007. Why did an article called "Women's Underrepresentation in Science" give statistics about women in science that were seven years old, without date or source?

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[2] *ETAN Report on Women and Science,* 2000, p. 44, http://cordis.europa.eu/improving/women/documents.htm.

[3] AWM *Newsletter,* September–October 2007, p. 3.

[4] In this study, differences were measured by odds ratios, the odds of being approved among female applicants divided by the odds of being approved among male applicants.

[5] Marsh et al., 2009, p. 1298, http://rer.sagepub.com/content/79/3/1290.abstract.

[6] Example from p. 782 of Allyn Jackson, "Has the Women-in-Mathematics Problem Been Solved?," *Notices of the American Mathematical Society,* 2004, http://www.ams.org/notices/200407/comm-women.pdf.

[7] Assertion on p. 144, study description on p. 132 and www.human.cornell.edu/hd/upload/NIH_williams-ceci_overallsummary.pdf.

[8] Ceci, Williams, & Barnett, 2009, http://www.apa.org/pubs/journals/releases/bul1352218.pdf.

Percentage Women: Ph.D.'s, Assistant Professors at Top 50 Departments

	Ph.D.'s: 96–05	2002	2007	Yield 2007
Mechanical Engineers	8.4%	15.7%	18.2%	337%
Astronomy	22.7%	20.2%*	25.3%	111%
Economics	30.2%	19.0%	30.8%	102%
Mathematics	28.7%	19.6%	28.0%	98%
Sociology	60.8%	52.3%	57.9%	95%
Computer Science	21.2%	10.8%	20.0%	93%
Biological Sciences	46.3%	30.4%	35.0%	76%
Psychology	67.8%	45.4%	48.5%	72%
Chemistry	32.4%	21.7%*	21.2%	65%

Source: Nelson, p. 14–16. *2003 data. Yield is percentage assistant professors divided by percentage Ph.D.'s.

In February of 2009, I sent a note that was forwarded to Ceci and Williams, saying that

> the 2007 Nelson Diversity Survey shows the rate by field at which women earned Ph.D.'s in 1996–05 and the rate at which they were hired as assistant professors in 2007. The difference in rates is biggest for psychology where it is almost 20 percentage points.[9] In some fields of engineering, the rate at which women are hired as assistant professors is greater than the rate at which they received Ph.D.'s. See page 14, Table 11 of the survey which can be downloaded here: http://chem.ou.edu/~djn/diversity/top50.html.

Ceci said they would be incorporated in the book, and they were—sort of (see pp. 7, 41). Presumably this occurred late in production because MOS appeared in August. Thus, I may be indirectly responsible for some of the typos in the book.

In my note, I didn't mention the top 50 departments. (It's obvious in the source.) Neither does MOS. Instead, it gives various percentages, some with incorrect descriptors, some with incorrect references, and some with no references. [10]

Does it matter if the references and numbers are wrong? After all, the numbers are pretty small.

Here's why you might care.

It's hard to see statistical trends, if you don't get the statistics right. An important change (perhaps not yet a trend) found by the National Research Council's *Gender Differences at Critical Transitions in the Careers of Science, Engineering, and Mathematics Faculty*—as well as the Nelson 2007 Diversity Survey—is that for some fields, including mathematics, proportions of women hired as assistant professors at "top departments" in a given field are now more or less the same as the rate at which they earn Ph.D.'s. This is not the case for psychology, "in part the result of many Ph.D.'s specialized in clinical/practice and never intending to be academics" explains MOS.[11]

Like the Wold Effect for the Swedish Medical Fellowships, I suspect that the change in hiring statistics was not due to business as usual. Was it due to more emphasis on relevant information about applicants, family-friendly policies, accommodation for dual-career couples, or improvements in departmental climate? All of these have received increased attention in academe.

Stereotype threat and other forms of inequality. Another reason to be concerned about sloppy statistics is more subtle—and touches on other aspects of MOS that I find problematic. MOS discusses statistics with respect to achieving *parity.* It will come as no surprise that Ceci and Williams don't think that it will occur any time soon. (However, it's already happened, on average, for mathematics departments

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[9] I remember thinking at the time that the difference in such rates is not the correct thing to examine, but for psychology it's certainly eye-catching. The quotient is better (and an example of when division of fractions is useful).

[10] For example, the numbers in the bar graph on p. 7 don't correspond with its caption or its description in the text. See http://mathedck.wordpress.com/ for details and other examples.

[11] See pp. 41, 187.

in two-year colleges.[12]) In her report, Nelson focuses on critical mass which she puts as 15% to 30%.[13] In her view (and mine), the overall percentage of faculty women in a given department is of interest—and small increases are important. According to Nelson's 2007 findings, women are, on average, more than 15% of the faculty at the top 100 departments for sociology, psychology, political science, economics, life sciences, and astronomy. Math and computer science are close: 12.9% and 13.2%, respectively.

Why is critical mass important? Many AWM members may think this is obvious. Even if every one of your peers behaves like a colleague, in general, life seems better when you are not the only woman in your class, cohort, or department. Stereotype threat and implicit bias help to explain why.

Tierney characterizes these dismissively as "theories," not mentioning that they have empirical support.

MOS does not discuss implicit bias directly,[14] nor the gender schemas described by Virginia Valian in her book *Why So Slow?* It gives short shrift to stereotype threat, focusing mainly on test performance, little on how it may affect a sense of belonging, and not at all about how it may affect physical well being.

Fortunately, the different aspects of stereotype threat together with supporting empirical work are described by the psychologist Claude Steele in his book *Whistling Vivaldi.* As he details how this research developed over the past twenty years, Steele also illuminates what I find lacking in MOS:

> Psychologists focus on the internal, the psychological. If women underperform on a math test, our tendency is to look for a characteristic internal to women that might cause it—the observer's perspective.

In contrast, from the perspective of a woman taking the test—or a woman in a math department—context may be an important part of the explanation. Steele and his colleagues have shown how the methods of psychology can be used to test such explanations empirically.

Concluding remarks. I am aware that many who read this article are likely to be busy people. I have tried to be brief without being opaque, relegating most details to my blog. But I hope this article illustrates important gaps in Tierney's and MOS's accounts. To summarize, an ahistorical observer's perspective does not suffice.

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[12] See Conference Board of the Mathematical Sciences 2005 Survey, http://www.cbmsweb.org.

[13] Opinions differ about whether 15% suffices. What's important for this discussion is that critical mass is not necessarily parity.

[14] See Project Implicit for more information: https://implicit.harvard.edu/implicit/.

NSF-AWM Mentoring Travel Grants for Women

Mathematics Mentoring Grants. The objective of the NSF-AWM Mathematics 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. Each grant funds 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. The applicant's and mentor's research must be in a field which is supported by the Division of Mathematical Sciences of the National Science Foundation.

Mathematics Education Mentoring Grants. Women mathematicians who wish to collaborate with an educational researcher or to learn about educational research may use the mentoring grants to travel to collaborate with or be mentored by a mathematics education researcher. In order to be considered for one of the travel grants, a mathematics applicant must hold a doctorate in mathematics. A mentor should hold a doctorate in mathematics education or in a related field such as psychology or curriculum and instruction. The applicant's research must be in a field which is supported by the Division of Mathematical Sciences of the National Science Foundation.

Selection Procedure. AWM expects to award up to seven grants, in amounts up to $5,000 each. Awardees may request to use any unexpended funds for further travel to work with the same individual during the following year. In such cases, a formal request must be submitted by the following February 1 to the selection committee or funds will be released for re-allocation. (Applicants for mentoring travel grants may in exceptional cases receive up to two such grants throughout their careers, possibly in successive years; each such grant would require a new proposal and would go through the usual competition.) For foreign travel, U.S. air carriers must be used (exceptions only per federal grant regulations; prior AWM approval required).

Eligibility and Applications. Applicants must be women holding a doctorate (or equivalent) and with a work address in the USA (or home address, in the case of unemployed applicants). Please see the website (http://www.awm-math.org/travelgrants.html) for further details and do not hesitate to contact Jennifer Lewis at 703-934-0163, ext. 213 for guidance.

Deadlines. There is one award period per year. Applications are due **February 1**.

The First ICWM: Hyderabad, August 2011

Beatrice Pelloni, University of Reading, bpelloni@reading.ac.uk

The first ICWM took place this year in Hyderabad, August 17–19, 2010, just before the ICM. (See http://www.iitk.ac.in/icwm2010/.) The ICWM was held on the beautiful campus of the University of Hyderabad and was hosted with wonderful grace and kindness by the local organizers. Approximately 200 mathematicians attended, mostly but not exclusively women, in the majority Indian but with world-wide representation.

The meeting consisted of eight talks by exceptional mathematicians from all over the world, all women, of whom some were also plenary or invited speakers for the ICM. The list of invited speakers shows the varied geographical representation and the variety of topics, spanning a large part of mathematical endeavor, including topology, algebra, and numerical analysis:

Julie Deserti (France): Some properties of the Cremona group

Yana Di (China): Adaptive finite element methods for computational fluids

Frances Kirwan (UK): Moduli spaces and quotient spaces in algebraic geometry

Neela Nataraj (India): Mixed continuous and discontinuous Galerkin finite elements methods

Maryam Mirzakhani (USA): Dynamics over moduli spaces of surfaces

Raman Parimala (USA): A Hasse principle for quadratic forms

Mythily Rawaswamy (India): Importance of weighted eigenvalue problems

Nathalie Wahl (Denmark): Homological stability for geometric groups

The first afternoon of the two-day meeting was dedicated to a panel discussion on "Women mathematicians around the world." The discussion was organized by Professor Caroline Series and chaired by me in Professor Series' absence. It was introduced by short presentations aimed at illustrating the situation of women mathematician in most geographical regions of the world: Africa, South America, North America, Japan, Korea, India, and Europe. The panelists were Motoko Kotani (Japan; read by Basabi Chakraborty), Marie Françoise Ouedraogo (Burkina Faso), Kyewon Koh Park (Korea), Sylvie Paycha (France), Vera Spinadel (Argentina), Geetha Venkataraman (India) and Carol Wood (USA).

Moderator Bea Pelloni with three panelists

The presentations generally contained samples of statistical data on the percentage of mathematicians who are women at different stages in academic and research careers, within the different social and political contexts in the various regions considered. The panelists also gave descriptions of existing organizations that focus on supporting women mathematicians.

The latter aspect of the presentations generated most of the ensuing lively discussion. Although the time available was painfully insufficient, a dozen comments and questions from the audience followed one another without break. Additional views were expressed in writing on the questionnaire distributed at the meeting and returned to the organizers the following day.

The issue raised most often was the need to establish national, or perhaps regional, organizations that can coordinate the flow of information and make sure it reaches all potentially interested women, and also to offer support and leadership to women mathematicians in all regions of the world. The discussion referred mostly to the situation in India, sometimes with reference to specific social issues that make it difficult for young women to become scientists or even to acquire information at crucial stages, but the topics were also general and broadly relevant. Many times the speakers hinted that

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the presentations, plus the fact that the ICWM had been organized, provided new and essential information on resources which are or could be available for women interested in a research career in mathematics.

A few of those who spoke asked for advice on how to obtain financial assistance, for individuals or meetings, or for establishing peer support groups. This kind of query channeled into a widespread request that information on all types of support available for women mathematicians be organized and made widely available on a sort of "master" website.

In partial response to this request, a report on the discussion and the electronic version of all presentations has been made available on the EWM website. This website also hosts a blog that could become a useful tool for further discussion of how to create a central information and support platform for women mathematician (see http://womenandmath.wordpress.com/). In my view, it would be particularly useful if existing organizations, such as the Association for Women in Mathematics, European Women in Mathematics, Korean Women in Mathematical Sciences, and the LMS Women in Mathematics Committee could use this blog to open and maintain a discussion on how best to disseminate information and on how to assist in establishing similar organizations elsewhere.

The next ICM will be held in Seoul, Korea, in 2014. While no final decision has yet been made on whether a second ICWM will take place there, the association of Korean Women in Mathematical Sciences has already announced that they have received a donation of $90,000 targeted to support women from developing countries to attend the ICM 2014, Seoul.

Panelists Kyewon Koh Park and Sylvia Paycha

Moderator Bea Pelloni and three panelists

CALL FOR NOMINATIONS:

2012 Louise Hay Award

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

The nomination documents should include: a one to three page letter of nomination highlighting the exceptional contributions of the candidate to be recognized, a curriculum vitae of the candidate not to exceed three pages, and three letters supporting the nomination. It is strongly recommended that the letters represent a range of constituents affected by the nominee's work. Nomination materials for this award should be sent to awm@awm-math.org. Nominations must be received by **April 30, 2011** and will be kept active for three years. For more information, phone (703) 934-0163, email awm@awm-math.org or visit www.awm-math.org.

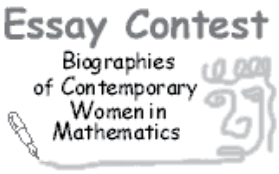
Participants at the ICWM, Hyderabad

The First ICWM: Hyderabad, August 2011

Panelist Vera Spinadel

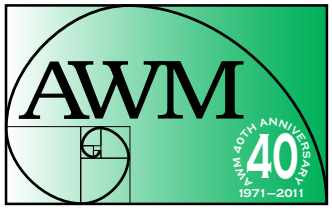
Above: Panelists Carol Wood, Marie–Françoise Ouedraogo, Geetha Venkataraman and Basabi Chakraborty

Left: Moderator Bea Pelloni with panelists Vera Spinadel, Kyewon Koh Park and Sylvia Paycha

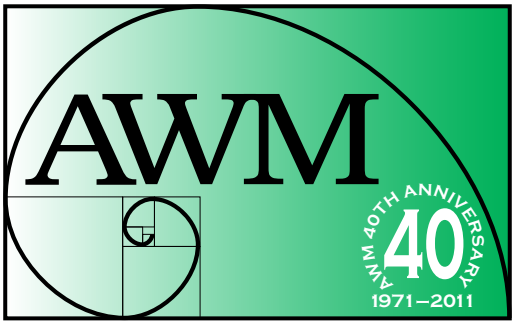


To increase awareness of women's ongoing contributions to the mathematical sciences, the Association for Women in Mathematics holds an essay contest for biographies of contemporary women mathematicians and statisticians in academic, industrial, and government careers. AWM is pleased to announce that the 2011 contest is sponsored by Math for America, www.mathforamerica.org.

The essays will be based primarily on an interview with a woman currently working in a mathematical career. The AWM Essay 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 website. Additionally, a grand prize winner will have his or her entry published in the AWM *Newsletter*. For more information, contact Dr. Elizabeth Stanhope (the contest organizer) at stanhope@lclark.edu or see the contest web page: www.awm-math.org/biographies/contest.html. The deadline for electronic receipt of entries is **February 27, 2011**. (To volunteer as an interview subject, contact Stanhope at the email address given.)



ASSOCIATION FOR WOMEN IN MATHEMATICS



ASSOCIATION FOR
WOMEN IN MATHEMATICS

CELEBRATE!

40 Years and Counting: 2011 is AWM's 40th Anniversary Year!

We hope you and your colleagues will join us for these AWM anniversary events:

Joint Mathematics Meetings, January 6–9, 2011, in New Orleans

- **AWM Schafer Minisymposium**

  AWM's first president Mary Gray on "Life in the Trenches with Alice: The Early Years"

  Also featuring talks by some past winners of the Alice T. Schafer Prize for Excellence in Mathematics by an Undergraduate Woman and a panel, "Getting Started as a Research Mathematician"

- **AWM Hay Minisymposium**

  Talks by some winners of the Louise Hay Award for Contributions to Mathematics Education and a panel, "The Mathematical Education of Teachers and the Common Core"

- **AWM Michler and Mentoring Minisymposium**

  Talks by the winners of the Ruth I. Michler Memorial Prize and by some AWM Mentoring Grant recipients and also a panel, "Mentors Count!"

- **Celebratory Banquet featuring New Orleans Jazz**

AWM 40th Anniversary Embedded Meeting at ICIAM 2011, Vancouver, BC, July 18–22, 2011

40 Years and Counting: AWM's Celebration of Women in Mathematics, Brown University, September 17–18, 2011

And be sure to watch for other special anniversary events and further details on the AWM website, www.awm-math.org.

AWM 40th Anniversary Banquet and Jazz

Friday, January 7, 2011 • 7:00 p.m. – 11:00 p.m.

Come and celebrate the 40th anniversary of the AWM with your friends and colleagues at the AWM banquet, which will feature a few invited toasts followed by some of New Orleans' finest jazz.

Tickets are available through Joint Meetings Registration ($60, including tax and gratuity).

Opportunities

Project NExT/YMN Poster Session

Project NExT and the Young Mathematician's Network invite submissions of abstracts for a poster session to be held on Thursday, January 6, 2011 from 4:00 to 6:00 p.m. in Napoleon A1-A3, 3rd floor Sheraton at the Joint Mathematics Meetings in New Orleans. The poster size will be 48" by 36"; it is best to have the posters 36" high. Posters and materials for posting pages on the posters will be provided on-site. We expect to accept about forty posters from different areas within the mathematical sciences.

This poster session is intended to highlight the research activities, both mathematical and pedagogical, of recent or future Ph.D.'s in mathematics and related fields. The organizers seek to provide an open venue for people who are near completion or have finished their graduate studies in the last five years to present their work and make connections with other same-stage professionals, in much the same spirit as the YMN and Project NExT.

Should you have a special requirement involving a computer hook-up, please let us know and we will check to see if it may be accommodated.

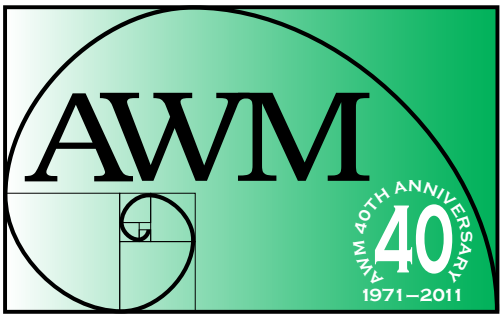
Our poster sessions over many years have been great successes. Visitors to the session each year were numerous and included many prospective employers. This session provides an excellent way to showcase your work in a relaxed, informal environment.

If you are interested in participating, submit copies of your abstract and information via email to: Professor Mike Axtell, maxtell@stthomas.edu *and* Professor Kim Roth, roth@juniata.edu.

The deadline for final consideration is **December 15, 2010**. Preference will be given to those who have earned a Ph.D. since 2005; please include with your submission when and where you received your Ph.D., or indicate when you expect to receive it, along with your current institution. Please submit your abstract via e-mail, not an attachment. If it includes mathematical formulas, please submit it in basic LaTeX or TeX format. Submissions will be acknowledged quickly by e-mail. Accepted abstracts will be posted at http://www.youngmath.net/Documents/2011/Posters/ before the Joint Meetings.

Schlumberger Faculty for the Future

Role Models for the Next Generation/Faculty for the Future fellowships are awarded to women from developing and emerging economies who are preparing for Ph.D. or post-doctoral study in the physical sciences, engineering, or related disciplines to pursue advanced graduate study at top universities in their disciplines abroad. Applications for 2011 awards close on **November 30, 2010**. See http://www.slb.com/about/community/foundation/facultyfuture.aspx.



ASSOCIATION FOR WOMEN IN MATHEMATICS

AWM Members, Sponsors and Contributors: Thank-yous

By now you should have received your renewal notices for the 2010–2011 membership year. We hope that you will renew promptly, if you have not altready done so, and that you and will encourage your institution and colleagues to join. In addition to your annual membership dues, please consider making a donation or raising your contribution level to the AWM Annual Giving Campaign, the AWM Alice T. Schafer Prize Fund, or the AWM Anniversary Endowment Fund. These donations are tax-exempt. Any contribution is welcome!

We extend our annual special thank-yous to the sponsors, contributing members, contributors, and institutional members who made donations between July 1, 2009 and June 30, 2010 by listing them below.

As a new AWM initiative, those making donations after July 1, 2010 will be recognized in circle levels:

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σ (sigma) Circle: $1 – $49

All donors, upon consent, will be acknowledged on the AWM website. All donors contributing at least $50 will, upon consent, be acknowledged in the AWM newsletter.

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Joint Commmitee on Women Panel Discussion

Friday, January 7, 2001, 1:00 p.m. –2:30 p.m.
Joint Mathematics Meetings

Title: Women in the Mathematical Sciences: Looking Back, Looking Forward

Description: 2011 marks the 40th anniversary of two pioneering entities created to identify and promote opportunities for women in the mathematical community: the Association for Women in Mathematics and the Joint Committee for Women in the Mathematical Sciences. This panel will mark the anniversary by bringing together individuals who are leaders in the mathematics community and who have worked with AWM, JCW, and other organizations to promote equal access and equal opportunity for women and girls in the mathematical sciences. The panelists will offer perspectives on issues faced by women in the mathematical sciences over each of the last four decades, reflect on changes or constants in representation, accomplishments, attitudes, and other trends, and scan the horizons for opportunities and challenges in the upcoming decades.

Panelists:
Mary Gray (American University)
Jim Lewis (University of Nebraska Lincoln)
Jill Pipher (Brown University)
Jean Taylor (Rutgers University)
Marie Vitulli (University of Oregon)

Moderator:
Terrell Hodge (Western Michigan University)

Organizers:
Terrell Hodge (Western Michigan University)
Maura Mast (University of Massachusetts, Boston)

Sponsor:
AMS-ASA-AWM-IMS-MAA-NCTM-SIAM Joint Committee on Women in the Mathematical Sciences

Energy, Growth, Form, and Collective Behavior: 2011 AAAS Annual Meeting

by Edward Aboufadel, Secretary of Section A of the AAAS
aboufade@gvsu.edu

The 2011 Annual Meeting of the American Association for the Advancement of Science will be February 17–21, in Washington, D.C. The theme of this year's meeting is "Science Without Borders." The mathematics program at this year's annual meeting features mathematics applied to topics of international interest. This program features symposia sponsored by Section A (Mathematics) of the AAAS.

The Annual Meeting is organized into symposia which have three or more speakers, and often a discussant who reflects on the talks that are given. Section A is sponsoring four symposia this year, featuring outstanding expository talks by prominent mathematicians and scientists. The four symposia sponsored by Section A this year are:

- Mathematics and Collective Behavior, organized by Warren Page, City University of New York.
  (Scheduled speakers: Iain Couzin, Pierre Degond, and Andrea L. Bertozzi.)

- Mathematics and Our Energy Future, organized by Russel Caflisch, Institute for Pure and Applied Mathematics and Mary Lou Zeeman, Bowdoin College.
  (Scheduled speakers: Martin Z. Bazant, Keith Promislow, and Ian Dobson.)

- Growth and Form in Mathematics, Physics, and Biology, organized by L. Mahadevan, Harvard University and Edward Aboufadel, Grand Valley State University.
  (Scheduled speakers: L. Mahadevan, Yves Couder, and Alan Newell.)

- Explaining Phase Transitions, organized by David Lightfoot, Georgetown University.
  (Scheduled speakers: Jeffrey Lidz, David Lightfoot, Martina Morris, Douglas H. Erwin, and James Yorke.)

Other symposia that will be of interest to the mathematical community include:

- Using Quantitative Content Analysis to Assess the Likelihood of Terrorist Violence

- Estimating Earth's Human Carrying Capacity

- Teaching and Learning in the Digital Age: Reliable Resources Across the Disciplines

- Transcending Gender and Ethnic Barriers to Full STEM Participation

- Science Without Borders: Learning from TIMSS Advanced 2008

- The Crowd and the Cloud—The Future of Online Collaboration

- Surprise … It's Science! Reaching new audiences in unconventional ways with festivals

The above symposia are only a few of the over 150 AAAS program offerings in the physical, life, social, and biological sciences. For further information, including the schedule of talks, go to www.aas.org/meetings.

AAAS annual meetings are the showcases of American science, and they encourage participation by mathematicians and mathematics educators. Section A acknowledges the generous contributions of the American Mathematical Society for travel support. The AAAS Program Committee is genuinely interested in offering symposia on pure and applied mathematical topics of current interest, and in previous years there have been symposia on subjects such as fairness in politics, origami, mathematics and the brain, quantum information theory, and the changing nature of mathematical proof.

The 2012 meeting will be February 16–20, 2012 in Vancouver, BC, Canada. The Steering Committee for Section A seeks organizers and speakers who can present substantial new material in an accessible manner to a large scientific audience. All are invited to attend the Section A Committee business meeting in Washington on Friday, February 18, 2010, at 7:00 p.m., where we will brainstorm ideas for symposia. In addition, I invite you to send me, and encourage your colleagues to send me, proposals for future AAAS annual meetings.

continued on page 24

Energy, Growth, Form and Collective Behavior: 2011 AAAS Annual Meeting

continued from page 23

The following are the members of the Steering Committee for Section A from February 2010 to February 2011:

Chair: Kenneth Millett (University of California, Santa Barbara)
Chair-Elect: John H. Ewing (Math For America)
Retiring Chair: Keith Devlin (Stanford University)
Secretary: Edward Aboufadel (Grand Valley State University)
Members at Large:
Claudia Neuhauser (University of Minnesota)
Warren Page (City University of New York)
Tony Chan (Hong Kong University of Science and Technology)
Mary Ellen Bock (Purdue University)

Sonia Kovalevsky High School and Middle School Mathematics Days

Through a grant from the National Science Foundation (NSF), the Association for Women in Mathematics expects to support Sonia Kovalevsky High School and Middle 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 female high school or middle school 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 transitions between middle school and high school mathematics and 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 middle schools and high schools in their area.

AWM awards grants ranging on average from $1500 to $2200 each ($3000 maximum) to universities and colleges. Historically Black Colleges and Universities are particularly encouraged to apply. Programs targeted toward inner city or rural schools are especially welcome.

Applications, not to exceed six pages, should include:

- a cover letter including the proposed date of the SK Day, expected number of attendees (with breakdown of ethnic background, if known), grade level the program is aimed toward (e.g., 9th and 10th grade only), total amount requested, and organizer(s) contact information;
- plans for activities, including specific speakers to the extent known;
- qualifications of the person(s) to be in charge;
- plans for recruitment, including the securing of diversity among participants;
- detailed budget (Please itemize all direct costs in budget, e.g., food, room rental, advertising, copying, supplies, student giveaways. Honoraria for speakers should be reasonable and should not, in total, exceed 20% of the overall budget. Stipends and personnel costs are not permitted for organizers. The grant does not permit reimbursement for indirect costs or fringe benefits.);
- local resources in support of the project, if any; and
- tentative follow-up and evaluation plans.

Organizers should send announcements including date and location of their SK Days to the AWM web editor for inclusion on the AWM website. If funded, 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, whichever comes first. Reimbursements will be made in one disbursement; no funds may be disbursed prior to the event date. The annual fall deadline is August 4, with a potential additional selection cycle with a deadline of February 4.

AWM anticipates awarding 12 to 20 grants for Fall 2010 and Spring 2011. Applications must be received by **February 4, 2011**. Decisions on funding will be made in late February.

Applications should be sent as ONE pdf file to awm@awm-math.org. Applications by mail or fax will not be accepted. For further information, call 703-934-0163 or email awm@awm-math.org, or visit www.awm-math.org/kovalevsky.html.

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Association for Symbolic Logic ASL Travel Awards

Student Travel Awards: The 2011 ASL North American Annual Meeting, 2011 ASL European Summer Meeting, and other ASL or ASL-Sponsored Meetings. The ASL will make available modest travel awards to graduate students in logic and (for the European Summer Meeting only) to recent Ph.D.'s so that they may attend the 2011 ASL North American Annual Meeting in Berkeley, California, or the 2011 ASL European Summer Meeting in Barcelona, Spain; see below for information about these meetings. Student members of the ASL also may apply for travel grants to other ASL or ASL-sponsored meetings. To be considered for a Travel Award, please (1) send a letter of application, and (2) ask your thesis supervisor to send a brief recommendation letter. The application letter should be brief (preferably one page) and should include: (1) your name; (2) your home institution; (3) your thesis supervisor's name; (4) a one-paragraph description of your studies and work in logic, and a paragraph indicating why it is important to attend the meeting; (5) your estimate of the travel expenses you will incur; (6) (for citizens or residents of the USA) citizenship or visa status; and (7) (voluntary) indication of your gender and minority status. Women and members of minority groups are strongly encouraged to apply. In addition to funds provided by the ASL, the program of travel grants to the ASL North American Annual Meeting and the European Summer Meeting is supported by a grant from the US National Science Foundation; NSF funds may be awarded only to students at USA universities and to citizens and permanent residents of the USA. Air travel paid for using NSF funds must be on a US flag carrier. Application by email is encouraged; put "ASL travel application" in the subject line of your message.

For the 2011 ASL North American Annual Meeting, applications and recommendations should be received before the deadline of December 20, 2010, by the Program Chair: Itay Neeman, c/o ASL, Box 742, Vassar College, 124 Raymond Avenue, Poughkeepsie, NY 12604, USA; Fax: 845-437-7830; email: **ineeman@math.ucla.edu**. Applications by email are preferred.

For the 2011 ASL European Summer Meeting, applications and recommendations should be received before the deadline of **March 21, 2011**, by the Organizing Committee: Joan Bagaria, Chair of the Organizing Committee, LC11, Departament de Logica, Historia i Filosofia de la Ciencia, Universitat de Barcelona, Montalegre 6, 08001 Barcelona, Spain; email: **lc2011@lsi.upc.edu**.

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

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

ASL, Box 742, Vassar College
124 Raymond Ave., Poughkeepsie, NY 12604
Email: **asl@vassar.edu**; Fax: 845-437-7830
Also visit the ASL website: **http://www.aslonline.or**g.

ADVERTISEMENTS

BOSTON COLLEGE DEPARTMENT OF MATHEMATICS — Post-doctoral Position — The Department of Mathematics at Boston College invites applications for a post-doctoral position beginning September 2011. This position is intended for a new or recent Ph.D. with outstanding potential in research and excellent teaching. This is a 3-year Visiting Assistant Professor position, and carries a 2-1 annual teaching load. Research interests should lie within Number Theory or Representation Theory or related areas. Candidates should expect to receive their Ph.D. prior to the start of the position and have received the Ph.D. no earlier than Spring 2010. Applications must include a cover letter, description of research plans, curriculum vitae, and four letters of recommendation, with one addressing the candidate's teaching qualifications. Applications received no later than January 1, 2011 will be assured our fullest consideration. Please submit all application materials through MathJobs.org. Applicants may learn more about the Department, its Faculty and its programs and about Boston College at www.bc.edu/math. Email inquiries concerning this position may be directed to postdoc-search@bc.edu. Boston College is an Affirmative Action/Equal Opportunity Employer. Applications from women, minorities and individuals with disabilities are encouraged.

BOSTON UNIVERSITY – Multiple Positions —The Department of Mathematics and Statistics invites applications for the following two positions: Tenure-track Assistant Professor level in Number Theory, especially in the field of Automorphic Representation Theory. Ph.D. required. The position will begin in September 2011, subject to administrative approval. Strong commitment to research and teaching is essential. Please submit the AMS Application Cover Sheet, CV, research statement, teaching statement, and at least three letters of recommendation, one of which addresses teaching, to http://www.mathjobs.org/jobs. Alternatively, send all material to NT Search, Department of Mathematics and Statistics, Boston University, 111 Cummington St., Boston, MA 02215; two-year Post-Doctoral position in Statistics and Probability, starting September 2011, pending budgetary approval. Strong commitment to research and teaching is essential. Submit the AMS cover sheet, CV, research statement, teaching statement and at least three letters of recommendation, one of which addresses teaching, to http://www.mathjobs.org/jobs. Alternatively, send all material to Statistics and Probability Postdoctoral Search Committee, Department of Mathematics and Statistics, Boston University, 111 Cummington St., Boston, MA 02215. Application Deadlines are January 3, 2011. Boston University is an affirmative Action/Equal Opportunity Employer.

BROWN UNIVERSITY — Associate Professor with tenure —The Mathematics Department at Brown University invites applications for one position at the level of Associate Professor with tenure to begin July 1, 2011 [Exceptionally qualified senior candidates may be considered for appointment as Full Professor]. 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 submit a letter of application and a curriculum vitae to: http://www.mathjobs.org. Applicants for Full Professor should include the names of five references that would be contacted at the appropriate time by the Search Committee. Applicants for Associate Professor should have five letters of reference sent at the time of application. Applications received by November 5, 2010 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 — J. D. Tamarkin Assistant Professorship — One three-year non-tenured non-renewable appointment, beginning July 1, 2011. 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, applicants must submit a curriculum vitæ, an AMS Standard Cover Sheet and three letters of recommendation by December 1, 2010. Please submit all application materials on line at http://www.mathjobs.org. Email inquiries should be addressed to juniorsearch@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

BROWN UNIVERSITY — Simons Postdoctoral Fellowship — One three-year non-tenured non-renewable appointment, beginning July 1, 2011. The teaching load is three one-semester courses during the term of the fellowship, and will consist of courses of more than routine interest. Candidates must have received their Ph.D. in the academic year immediately preceding the start of the appointment. Applicants should have strong research potential. Field of research should be consonant with the current research interests of the department. For full consideration, applicants must submit a curriculum vitæ, an AMS Standard Cover Sheet, and three letters of recommendation by December 1, 2010. Please submit all application materials on line at http://www.mathjobs.org. Email inquiries can be addressed to simons.fellowship@math.brown.edu. Brown University is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

CLARKSON UNIVERSITY — Tenure-track position — The Department of Mathematics (www.clarkson.edu/math) invites applications for a tenure-track position as Assistant or Associate Professor in statistics starting in August 2011. Responsibilities will include teaching undergraduate and graduate level mathematics courses, and directing graduate students. Minimum requirements are a Ph.D. in statistics/mathematics by the date of appointment, demonstrated excellence in both research potential and teaching ability, and fluency in English. In addition, the candidate should be able to interact with other faculty in the department and the university. Electronic applications may be sent to www.clarkson.edu. Completed applications will be reviewed starting immediately. Women and minorities are urged to apply. Clarkson University is an AA/EOE Employer. (Pos. # 192).

DARTMOUTH COLLEGE — John Wesley Young Research Instructorships — 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 $4,833, 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: JWY #2240. You can also access the application through a link at http://www.math.dartmouth.edu/activities/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, 2011 considered first. Dartmouth College is committed to diversity and strongly encourages applications from women and minorities. There are 2 positions available to fill.

INSTITUTE FOR PURE AND APPLIED MATHEMATICS, UCLA — Associate Director — The Institute for Pure and Applied Mathematics (IPAM) at UCLA is seeking an Associate Director (AD), to begin a two-year appointment on July 1, 2011. The AD is expected to be an active and established research mathematician or scientist in a related field, with experience in conference organization. The primary responsibility of the AD will be running programs in coordination with the organizing committees. For a detailed job description and application instructions, go to www.ipam.ucla.edu/jobopenings/assocdirector.aspx. Applications will receive fullest consideration if received by February 1, 2011. UCLA is an equal opportunity/affirmative action employer.

ADVERTISEMENTS

JOHN HOPKINS UNIVERSITY — Non-Tenure-Track J,J. Sylvester Assistant Professor — Subject to availability of resources and administrative approval, the Department of Mathematics solicits applications for non-tenure-track Assistant Professor positions beginning Fall 2011. 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. Application should include a vita, at least four letters of recommendation of which one specifically comments on teaching, and a description of current and planned research. Write to cpoole@jhu.edu for questions concerning these positions. Applications received by **November 15, 2010** will be given priority. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minorities and women candidates are encouraged to apply.

LOYOLA MARYMOUNT UNIVERSITY — Tenure-track openings at the assistant professor level — The Mathematics Department of Loyola Marymount University will have one or two tenure-track openings at the assistant professor level for the academic year 2011-2012. Responsibilities include teaching, advising, maintaining an active program of scholarship, and engaging in university service. Applicants are expected to have completed a Ph.D. in mathematics, statistics, mathematics education, or a related field by Fall 2011. Individuals in any area of mathematics may apply; the department is especially interested in applicants in the areas of mathematics education or K-12 teacher preparation, applied mathematics, and probability/statistics. Exceptional candidates with experience in one of these fields may be considered for a position at the Associate or Full Professor level. We have a strong commitment to cultural/ethnic diversity and applicants who have experience/interest in this area are asked to highlight it in their application. The Mathematics Department, housed within the College of Science and Engineering, has 18 full-time faculty members, approximately 45 mathematics majors, 25 minors, and a few MAT students. A degree in bio-mathematics is being developed. Faculty from many areas of mathematics work in an atmosphere of mutual respect and collegiality. The normal teaching load is 3 courses each semester (9 hours/week) with the possibility of a reduced teaching load in the first two years. Additional information is available at http://cse.lmu.edu/departments/math.htm. Benefits include housing assistance and domestic partner health coverage. Loyola Marymount, a comprehensive university in the mainstream of American Catholic higher education, seeks professionally outstanding applicants who value its mission and share its commitment to academic excellence, the education of the whole person, and the building of a just society. LMU is an equal opportunity institution actively working to promote an intercultural learning community. Women and minorities are encouraged to apply. (Visit www.lmu.edu for more information.) A complete application consists of a letter of interest, curriculum vitae, statement on teaching philosophy, a description of the applicant's current scholarship program, and three letters of recommendation at least one of which addresses the applicant's teaching. We will begin screening applications on **December 1, 2010**. Applicants who will be attending the 2011 Joint Mathematics Meetings in January should indicate this in their letter of interest. Apply online at www.mathjobs.org/jobs. Please address questions to Curtis Bennett, Chair at cbennett@lmu.edu or (310) 338-5112.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY DEPARTMENT OF MATHEMATICS — Positions for Faculty and Instructors — The Mathematics Department at MIT is seeking to fill positions in Pure and Applied Mathematics and Statistics, at the level of Simons Postdoctoral Fellow, Instructor, Assistant Professor and higher, beginning September 2011. Appointments are based primarily on exceptional research qualifications. Appointees will be expected to fulfill teaching duties and to pursue their own research program. PhD is required by the employment start date. For more information, and to apply, please visit www.mathjobs.org. To receive full consideration, please submit applications by ***December 1, 2010***. Recommendations should be submitted through mathjobs.org but may also be sent as PDF attachments to hiring@math.mit.edu, or as paper copies mailed to: Mathematics Search 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.

MCGILL UNIVERSITY — Tenure-track positions in Mathematics — The Department of Mathematics and Statistics of McGill University invites applications for two tenure-track positions in Mathematics. While appointments are expected to be made at the Assistant Professor level, more senior applicants would be considered. The appointments are to be in two priority areas: (1) Discrete mathematics, especially combinatorics or graph theory; (2) Infinite group theory. Candidates must have a doctoral degree at the date of appointment and a strong background in mathematics. They are expected to have demonstrated the capacity for independent research of excellent quality. Selection criteria include research accomplishments, as well as potential contributions to the Department's educational programs at the graduate and undergraduate levels. Applications should be made through MathJobs.Org (Position ID: McGill-DMIGT) and must include a curriculum vitae, a list of publications, a research outline, a teaching statement which includes an account of teaching experience, and at least four references (with one addressing the teaching record). Candidates are also encouraged to provide web links for up to three selected reprints or preprints, or to upload them to MathJobs.Org. Candidates must ensure that letters of reference are submitted (preferably through MathJobs.org, though in exceptional circumstances they may be mailed to Mathematics Search Committee, Dept. of Mathematics and Statistics, McGill University, 805 Sherbrooke St. W. Montreal, QC H3A 2K6, Canada). To ensure full consideration, complete applications including letters of reference should be received by **January 10, 2011**, but later applications may be considered. McGill University is committed to equity in employment and diversity. It welcomes applications from indigenous peoples, visible minorities, ethnic minorities, persons with disabilities, women, persons of minority sexual orientations and gender identities and others who may contribute to further diversification. All qualified applicants are encouraged to apply; however, in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

MICHIGAN STATE UNIVERSITY — Tenure track position — The Department of Statistics and Probability at Michigan State University invites applications for one tenure track position at the rank of Assistant Professor to start August 16, 2011. In addition to having a Ph.D. with a concentration in statistics and/or probability and strong research and teaching potential, candidates should have research interest in functional data analysis, the analysis of high dimensional data, and/or stochastic analysis. The department is strongly committed to building research strength in applied and interdisciplinary areas. Please supply curriculum vitae, summary of scholarly interests, and evidence of teaching experience, as well has having three letters of recommendation sent directly to: Search Committee, Department of Statistics and Probability, A415 Wells Hall, Michigan State University, East Lansing, MI 48824-1027. Electronic applications may be sent via email to sparks@stt.msu.edu. The selection process will begin **December 15, 2010** and continue until the position is filled. MSU is an Affirmative Action/Equal Opportunity Institution. Persons with disabilities have the right to request and receive reasonable accommodations. Minorities and women are strongly encouraged to apply. For additional information about the Department of Statistics and Probability at MSU please visit www.stt.msu.edu.

PURDUE UNIVERSITY — The Mathematics Department at Purdue University invites applications for possible appointments in mathematics at the level of assistant, associate, or full professor for August 2011. 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 in the areas of geometry and analysis, including algebraic topology, algebraic geometry and

connections to commutative algebra, symplectic/differential geometry, probability, partial differential equations and connections to applied mathematics, will be considered. Duties: Conduct research in mathematics. Teach undergraduate and/or graduate mathematics courses and supervise graduate students. Senior hires will also mentor junior faculty and participate in the governance of the department, the College of Science, and the University by serving on faculty committees. 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 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 15, 2010**. Purdue University is an Equal Opportunity/Equal Access/Affirmative Action Employer fully committed to achieving a diverse workforce. For more information about our department, see www.math.purdue.edu/.

TEXAS A&M UNIVERSITY — Postdoctoral positions — The Department of Mathematics anticipates up to six openings for postdoctoral positions at the level of Visiting Assistant Professor, subject to budgetary approval. Our Visiting Assistant Professor positions are three-year appointments 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. We also anticipate up to six short-term (semester or year-long) visiting positions at various ranks, depending on budget. A complete dossier should be received by **December 15, 2010**. Early applications are encouraged since the department will start the review process in October, 2010. Applicants should send the completed "AMS Application Cover Sheet," a vita, a summary statement of research and teaching experience, and arrange to have letters of recommendation sent to: Faculty Hiring, Department of Mathematics, Texas A&M University, 3368 TAMU, 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.

TUFTS UNIVERSITY — Tenure-Track Assistant Professorship, Scientific Computing — Applications are invited for a tenure-track Assistant Professorship to begin September 1, 2011. Applicants must show promise of outstanding research in the area of Scientific Computing and evidence of strength in teaching a broad range of courses in mathematics, including upper-level undergraduate and graduate courses in applied mathematics. The teaching load will be two courses per semester. Preference will be given to candidates who show potential for interaction with existing applied mathematics research efforts in the department, including computational partial differential equations, computational neuroscience, numerical linear algebra, and inverse problems. Applications should include a cover letter, curriculum vitae, a research statement and a teaching statement. All of these documents should be submitted electronically through http://www.mathjobs.org. In addition, applicants should arrange for three letters of recommendation to be submitted electronically on their behalf through http://www.mathjobs.org. If a recommender cannot submit online, we will accept signed PDF attachments sent to misha.kilmer@tufts.edu or paper letters mailed to SC Search Committee Chair, Department of Mathematics, Bromfield-Pearson Hall, Tufts University, Medford, MA 02155. Review of applications will begin on **Nov. 22, 2010** and will continue until the position is filled. Tufts University is an Affirmative Action/Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

TUFTS UNIVERSITY — Non-Tenure-Track Assistant Professorship, Algebraic Geometry — Applications are invited for a non-tenure-track Assistant Professorship to begin September 1, 2011 with an initial appointment for one year renewable for two more. Applicants must show promise of outstanding research in the area of algebraic geometry and related fields. Preference will be given to candidates whose interests bridge those of Tufts faculty including classical algebraic geometry, algebraic groups and equivariant cohomology. Applicants must also show evidence of excellent teaching. The teaching load will be two courses per semester. Applications should include a cover letter, curriculum vitae, a research statement and a teaching statement. All of these documents should be submitted electronically through http://www.mathjobs.org. In addition, applicants should arrange for three letters of recommendation to be submitted electronically on their behalf through http://www.mathjobs.org. If a recommender cannot submit online, we will also accept signed PDF attachments sent to montserrat.teixidoribigas@tufts.edu or paper letters mailed to AG Search Committee Chair, Department of Mathematics, 503 Boston Avenue, Tufts University, Medford, MA 02155. Review of applications will begin on **January 2, 2011** and will continue until the position is filled. Tufts University is an Affirmative Action / Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

TUFTS UNIVERSITY — Norbert Wiener Assistant Professorship Integral Geometry and Harmonic Analysis — Applications are invited for a Norbert Wiener Assistant Professorship. This is a non-tenure track appointment starting on September 1, 2011, for one year and renewable to a maximum of three years. Applicants must show promise of outstanding research in the area of Integral Geometry and Harmonic Analysis. Possible specialties include, but are not limited to, Radon transforms, harmonic analysis on Lie groups and homogeneous spaces, representation theory, microlocal analysis, and aspects of geometric analysis, convexity theory, algebraic analysis, and Lie theory related to integral geometry and harmonic analysis. Ph.D. required by the appointment date. Preference will be given to candidates whose interests bridge those of Tufts faculty. Applicants must also show evidence of excellent teaching. The teaching load will be two courses per semester. Applications should include a cover letter, curriculum vitae, a research statement and a teaching statement. All of these documents should be submitted electronically through http://www.mathjobs.org. In addition, applicants should arrange for three letters of recommendation to be submitted electronically on their behalf through http://www.mathjobs.org. If a recommender cannot submit online, we will also accept signed PDF attachments sent to IGHAHiring@elist.tufts.edu or aper letters mailed to IGHA Search Committee Chair, Department of Mathematics, 503 Boston Avenue, Tufts University, Medford, MA 02155. Review of applications will begin on **December 1, 2010** and will continue until the position is filled. Tufts University is an Affirmative Action / Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

TUFTS UNIVERSITY — Tenure-Track Assistant Professorship, Dynamical Systems and Geometry — Applications are invited for a tenure-track Assistant Professorship to begin September 1, 2011. Applicants must show promise of outstanding research in the area of Dynamical Systems and Geometry, that is, the study of dynamical aspects of geometric problems or applications of dynamical systems to geometry. Possible specialties include, but are not limited to, actions of the mapping-class group, Teichmüller flows, geodesic flows in nonpositive curvature, dynamics or rigidity of group actions, dynamics on the boundary at infinity. Preference will be given to candidates whose interests bridge those of Tufts faculty in Geometric Group Theory, Topology, and Dynamical Systems. Ph.D. required. Applicants must also show evidence of excellent teaching. The teaching load will be two courses per semester. Applications should include a cover letter, curriculum vitae, a research statement and a teaching statement. All of these documents should be submitted electronically through http://www.mathjobs.org. In addition, applicants should arrange for three letters of recommendation to be submitted electronically on their behalf through http://www.mathjobs.org. If a recommender cannot submit online, we will also accept signed PDF attachments sent to DGHiring@elist.tufts.edu or paper letters mailed to DG Search Committee Chair, Department of Mathematics,

503 Boston Avenue, Tufts University, Medford, MA 02155. Review of applications will begin on December 1, 2010 and will continue until the position is filled. Tufts University is an Affirmative Action / Equal Opportunity employer. We are committed to increasing the diversity of our faculty. Members of underrepresented groups are strongly encouraged to apply.

UNIVERSITY OF ALABAMA AT BIRMINGHAM — Tenure-track assistant professor position — The Department of Mathematics at the University of Alabama at Birmingham (UAB) is soliciting applications for a tenure-track assistant professor position beginning August 15, 2011. Applicants whose research is compatible with the department's strengths in differential equations, differential geometry, dynamical systems, mathematical physics, and topology, including computational aspects of these areas, are encouraged to apply. Those with expertise in geometric or harmonic analysis, inverse problems, or probability are of particular interest in this search. For additional information about the department please visit http://www.math.uab.edu. Applicants should have demonstrated the potential to excel in one of the research areas mentioned and in teaching at all levels of instruction. They should also be committed to professional service including departmental service. Post-doc experience is preferred. Applications should include a curriculum vita with a publication list, a statement of future research plans, a statement on teaching experience and philosophy, and minimally three letters of reference with at least one letter addressing teaching experience and ability. We prefer applications and all other materials be submitted electronically at http://www.mathjobs.org, although applicants may submit an application including an AMS cover sheet to: Math Faculty Search, Department of Mathematics, The University of Alabama at Birmingham, Birmingham, AL 35294-1170. The department and university are committed to building a culturally diverse workforce and strongly encourage applications from women and individuals from underrepresented groups. UAB has an active NSF-supported ADVANCE program and a Spouse Relocation Program to assist in the needs of dual career couples. UAB is an Affirmative Action/Equal Employment Opportunity employer.

UNIVERSITY OF PENNSYLVANIA — Nontenure-Track Junior Positions — Lecturer — At least one position will be available beginning July 1, 2011. Candidates should have strong research credentials and be recognized as potentially successful teachers of undergraduate and graduate students. Applications should be submitted online through www.mathjobs.org For further information, please contact personnel@math.upenn.edu or Personnel Committee, Department of Mathematics, University of Pennsylvania, Philadelphia, PA 19104-6395. The University of Pennsylvania is an equal opportunity, affirmative action employer. Women and minority candidates are encouraged to apply.

UNIVERSITY OF PENNSYLVANIA — Tenure-track Assistant Professorship in Mathematics — One tenure-track Assistant Professorship in Mathematics will be available for the academic year beginning July 1, 2011. Candidates must have outstanding research and show promise of being successful teachers of undergraduate and graduate students. Applications should be submitted online through www.mathjobs.org. For further information, please contact personnel@math.upenn.edu or Personnel Committee, Department of Mathematics, University of Pennsylvania, Philadelphia, PA 19104-6395. The University of Pennsylvania is an equal opportunity, affirmative action employer. Women and minority candidates are encouraged to apply.

UNIVERSITY OF SOUTHERN CALIFORNIA — The Department of Mathematics in the College of Letters, Arts, and Sciences of the University of Southern California seeks to fill the following positions. The start date for all positions is August 2011. Tenure-Track Assistant Professorship. Subject area: open, with a preference for candidates in geometry, topology, and related fields. Candidates should have demonstrated excellence in research and a strong commitment to graduate and undergraduate education. A Ph.D. is required. Assistant Professor Non-Tenure Track. Subject area: any field of mathematics of interest to senior members of the department. Candidates should demonstrate great promise in research and evidence of strong teaching. This is a three-year non-tenure-track appointment with a teaching load of three semester courses per year. A Ph.D. is required. To apply, please submit the following materials: letter of application and curriculum vitae, including your e-mail address, telephone and fax numbers, preferably with the standardized AMS Cover Sheet. Candidates should also arrange for at least three letters of recommendation to be sent, one of which addresses teaching skills. Applications through MathJobs at www.mathjobs.org are preferred. Otherwise, all materials should be mailed to: Search Committee, Department of Mathematics, College of Letters Arts and Sciences, University of Southern California, 3620 Vermont Avenue, KAP 108, Los Angeles, CA 90089-2532. Review of applications will begin **November 15, 2010** and will continue until the positions are filled. Additional information about the USC College Department of Mathematics can be found at our web site http://college.usc.edu/mathematics/home/ USC strongly values diversity and is committed to equal opportunity in employment. Women and men, and members of all racial and ethnic groups are encouraged to apply.

WAKE FOREST UNIVERSITY DEPARTMENT OF MATHEMATICS — Tenure track position in Statistics — Applications are invited for one tenure track position in Statistics at the assistant professor level beginning July 2011. In exceptional cases applications at a level higher than assistant professor may be considered. We seek highly qualified candidates who have a commitment to excellence in both teaching and research. A Ph.D. in Statistics or a closely related area is required. The department has 20 members and offers both a B.A. and a B.S. in Mathematics, with an optional concentration in Statistics, a B.S. in Interdisciplinary Mathematics, and a B.S. in each of Mathematical Business and Mathematical Economics. The department has a graduate program offering an M.A. in Mathematics. A complete application will include a letter of application, curriculum vitae, teaching statement, research statement, graduate transcripts and three letters of recommendation. The review of applications will begin on **December 1, 2010**, and will continue until the position is filled. Applicants are encouraged to post materials electronically at http://www.mathjobs.org. Hard copy can be sent to Stephen Robinson, Wake Forest University, Department of Mathematics, P.O. Box 7388, Winston-Salem, NC 27109. (sbr@wfu.edu<mailto:sbr@wfu.edu>, http://www.math.wfu.edu) AA/EO employer.

WILLIAMS COLLEGE — Tenure-Track Position in Statistics — The Williams College Department of Mathematics and Statistics invites applications for one tenure-track position in statistics, beginning fall 2011, at the rank of assistant professor (in an exceptional case, a more advanced appointment may be considered). We are seeking a highly qualified candidate who has demonstrated excellence in teaching and research, and who will have a Ph.D. by the time of appointment. This candidate will become the fourth tenure-track statistician in the department, joining a vibrant and active statistics group. Williams College is a private, residential, highly selective liberal arts college with an undergraduate enrollment of approximately 2,000 students. The teaching load is two courses per 12-week semester and a winter term course every other January. In addition to excellence in teaching, an active and successful research program is expected. To apply, please send a vita and have three letters of recommendation on teaching and research sent to the Hiring Committee, Department of Mathematics and Statistics, Williams College, 18 Hoxsey Street, Williamstown, MA 01267. Teaching and research statements are also welcome. Evaluations of applications will begin on or after **November 15** and will continue until the position is filled. For more information on the Department of Mathematics and Statistics, visit http://math.williams.edu/. Beyond meeting fully its legal obligations for non-discrimination, Williams College is committed to building a diverse and inclusive community where members from all backgrounds can live, learn, and thrive.

2010–2011 Individual Membership Form

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The AWM *Newsletter* is published six times a year and is a privilege of membership. If you have questions, contact AWM at awm@awm-math.net, (703)934-0163, or visit our website at: http://www.awm-math.org.

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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.

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Volume 40, Number 6, November–December 2010

ADDRESS CORRECTION FORM

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☐ 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)**.