

ASSOCIATION FOR
WOMEN IN MATHEMATICS

Newsletter

VOLUME 42, NO. 6 • NOVEMBER–DECEMBER 2012

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.

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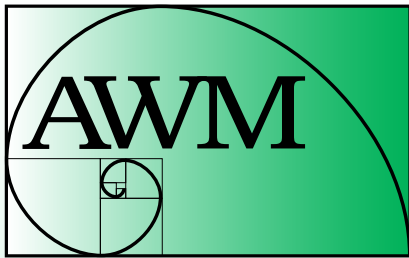
PRESIDENT'S REPORT

AWM Research Prizes. The recent announcements of new AWM research prizes are the exciting conclusion of many months of internal conversations about our own organizational goals, as well as the evidently fruitful discussions with the founders of two of these prizes. In September, AWM announced a mission to create four new research prizes in four broadly defined areas of mathematics. We are grateful to the friends and family of Cora Sadosky for inspiring these discussions when they expressed a desire to honor Cora's legacy in her research and her leadership and activism in the mathematical community. Georgia Benkart, chair of AWM's Awards and Prizes Committee, and Ruth Charney, AWM President-Elect, helped to shape AWM's new prize agenda.

Our internal discussions on the importance of prizes for advancing careers of women were influenced by the results of a recent study by the Association for Women in Science (AWIS). This study, funded by an NSF ADVANCE grant, documented that the percentage of prizes given to women in science has not been consistent with their representation. Unfortunately, the field of mathematics is no exception. AWM recognizes that awards and prizes have a high impact on careers, from job offers to promotions. Therefore, we were delighted to be able to announce simultaneously that donations had been received to fund two of the four prizes. The AWM-Microsoft Research Prize in Algebra and Number Theory was made possible by a generous donation from Microsoft Research, from the external funding of Kristin Lauter's cryptography research group at MSR. The AWM-Sadosky Research Prize in Analysis was made possible through the generous contributions of Cora Sadosky's family and friends, especially Daniel and Cora Sol Goldstein, and Judy and Paul Green. These biennial prizes are funded for a minimum of twenty years via a single lump sum donation. AWM actively seeks single donations to fund the remaining two prizes for a period of at least twenty years. Potential donors or sponsors should direct inquiries to the AWM managing office. See the article on the prizes in this issue for further information.

Yale Study in PNAS. In September, we learned of a Yale study corroborating the existence of gender bias among faculty at research-intensive institutions. The randomized double-blind study asked science faculty to evaluate student applications for a laboratory manager position. The applications were randomly assigned a male or female name. The "male" applicants were consistently rated as more highly qualified than the "female" applicants. The results of this study are in line with others that have taken place in the past twenty years; however, in what may be a new contribution to the impact of culture on bias, the Yale study

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**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.

Opinions expressed in *AWM Newsletter* articles are those of the authors and do not necessarily reflect opinions of the editors or policies of the Association for Women in Mathematics. Authors sign consent to publish forms.

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EXECUTIVE COMMITTEE

President

Jill Pipher
Department of Mathematics
Brown University
151 Thayer St.
Providence, RI 02912
jpipher@math.brown.edu

President-Elect Ruth Charney

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Bettye Anne Case
case@math.fsu.edu

Newsletter Editor

Anne Leggett, leggett@member.ams.org

Associate Editor

Sarah Greenwald
greenwaldsj@appstate.edu

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President's Report *continued from page 1*

demonstrated that the gender of the faculty participants did not affect the responses. Disheartening as this may be, it is an important reminder that most of us are not immune to the impact of our culture on bias and stereotypes. The article is available at: <http://www.pnas.org/content/early/2012/09/14/1211286109.full.pdf>.

AWM Liaisons. The Liaison program was launched in August, and within weeks nearly eighty liaisons in as many US colleges and universities signed up to help facilitate communication between their institutions and AWM. Ruth Haas, Smith College, had brought this idea to my attention during her term on the Executive Committee. It was subsequently reinvented and activated by Magnhild Lien, CSUN and Executive Director of AWM, whose experience on the MAA Board of Governors gave her first-hand knowledge of a liaison program. Liaisons will share the association's calls for nominations, opportunities for support, and announcements of activities with their institutions and also provide feedback to us about member concerns and suggestions. We are looking forward to the dialogue.

AWM at the Joint Mathematics Meetings (JMM). We look ahead to the various activities, events and business planned for the upcoming JMM: the Noether Lecture, the AWM workshop and poster session, and the AWM business meeting and the reception following the Gibbs Lecture. Behind the scenes, the AWM Executive Committee has its usual annual in-person meeting on the first day of JMM. Find our booth at the exhibit area, where both staff and AWM volunteers meet and greet old and new members. This year in San Diego, AWM will inaugurate some important changes in both the workshop and poster session. From now on, our workshops will have a focused research theme, varying from year to year. We've also nearly doubled the number of research talks in 2013: sixteen women, most at an early stage of their careers, will give short talks in a field related to algebra and number theory at the workshop sessions on Saturday. On Friday evening, the poster session and associated open reception feature twenty graduate students presenting their work in any area of mathematics. This reception and poster session were redesigned for greater visibility and easier networking. We thank the AMS for their approval of our special request for appropriate space to host the event in its new format at this and future Joint Meetings. The National Security Agency (NSA) sponsored the AWM workshop in 2012 and is also the primary sponsor of the 2013 AWM workshop in San Diego. Dr. Floyd B. (Ben) Cole, III, Director of NSA Mathematical Sciences Grants and Sabbaticals Program, attended the last two AWM JMM workshops and has been a strong supporter of AWM's goals to increase the participation and recognition of women in mathematical sciences. Finally, the AWM Reception following the Gibbs Lecture will honor all of the Alice T. Schafer award winners: first prize, runner up, and honorable mentions. Other announcements of interest to the community, and some general fun, are planned. Please join us!

Jill Pipher
Providence, RI
October 3, 2012



Jill Pipher

Letter to the Editor

This email is written in response to the article titled “AWM Statement on Engage to Excel” in the July–August 2012 issue of this newsletter. First of all I would like to say it’s a well written piece. I certainly find the subitem and the rationale for Action 3-1 of the PCAST report objectionable.

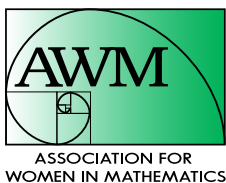
I have a PhD in Mathematical Sciences. I could call myself a biomathematician as I work in dynamical systems and apply it to problems in biology. I work at the Stowers Institute of Medical Research, Kansas City, which specializes in biological sciences, and my work requires the need to interface with biologists all day long.

The rationale for Recommendation 3 seems to target the mathematics community as a whole in not being able to teach the courses according to the skills required. I do not necessarily agree with that statement as during the course of my PhD work at NJIT (New Jersey Institute of Technology) I took many math courses and also a few statistics courses taught by both applied and pure mathematics professors. By and large, I think most of my professors did a fantastic job of not only helping me think about the math topics in an abstract way but also gave us many applications to go along with it. This has helped me in a huge way not only to think of mathematics as a pure theoretical subject but also to be able to use it as a tool to solve real world problems! That is the power of mathematics, and I think these days there’s a growing need in other disciplines to interact with mathematicians to explain their findings/results in a more analytical and quantitative manner. I think the main point of the PCAST recommendation should be to address the “outlook” of any mathematician who teaches rather than generalizing the community as a whole. If any mathematician has the right approach in teaching a topic by not simply emphasizing the theoretical aspects but also giving students a flavor for where they can be used in (real world) applications, I’m sure that would stoke the student’s imagination. This would also help them retain the concepts for a long time and possibly think of these concepts as powerful tools and envision applying them to any career that they choose.

In short, instead of recommending the removal of the entire mathematical community in teaching the college level courses, the policy body of PCAST should have more focus and emphasis on how these courses are taught by any faculty in mathematics with the right approach on the “quality” of teaching.

Thank you,

Lakshmi Chandrasekaran



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[www.awm-math.org!](http://www.awm-math.org)**

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Membership runs from Oct. 1 to Sept. 30

Individual: \$65 **Family:** \$30

Contributing: \$150

New member, affiliate and reciprocal members, retired, part-time: \$30

Student, unemployed: \$20

Outreach: \$10

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Category 2: \$325

Category 3: \$200

Category 4: \$175

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

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α **Circle:** \$5000+

β **Circle:** \$2500–4999

γ **Circle:** \$1000–2499

See the AWM website for details.

Subscriptions and Back Orders—All 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 \$65/year (\$75 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 \$116 for a basic four-line ad. Additional lines are \$14 each. See the AWM website for *Newsletter* display ad rates.

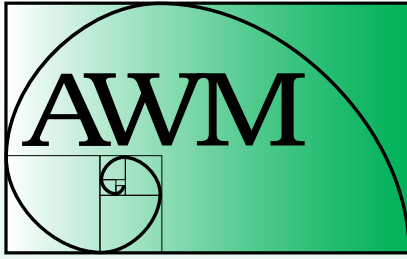
Newsletter Deadlines

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 queries and all *Newsletter* material except ads and material for media and book review columns to Anne Leggett, leggett@member.ams.org. Send all book review material to Marge Bayer, bayer@math.ku.edu. Send all media column material to Sarah Greenwald, greenwaldsj@appstate.edu, and Alice Silverberg, asilverb@math.uci.edu. Send everything else, including ads and address changes, to AWM, fax: 703-359-7562, e-mail: awm@awm-math.org.



ASSOCIATION FOR
WOMEN IN MATHEMATICS

AWM ONLINE

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

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

AWM DEADLINES

AWM-SIAM Kovalevsky Lecture:
November 1, 2012

Ruth I. Michler Memorial Prize:
November 1, 2012

AWM Workshop at SIAM:
November 1, 2012

AWM Essay Contest:
January 31, 2013

AWM Mentoring Travel Grants:
February 1, 2013

AWM Travel Grants:
February 1 and May 1, 2013

AWM-Sadosky Research Prize:
February 13, 2013

AWM-Microsoft Research Prize:
February 13, 2013

AWM Louise Hay Award: April 30, 2013

AWM M. Gweneth Humphreys Award:
April 30, 2013

AWM OFFICE

Magnhild Lien, Executive Director
mlien@awm-math.org

Jennifer Lewis, Managing Director
jennifer@awm-math.org

Matthew Hundley, Membership Director
matthew@awm-math.org

11240 Waples Mill Road, Suite 200
Fairfax, VA 22030
phone: 703-934-0163
fax: 703-359-7562
awm@awm-math.org

AWM Research Prizes

AWM has begun a new prize initiative to highlight outstanding research by women in the early stages of their careers in mathematics. By establishing these prizes AWM reaffirms its commitment to increasing the number of women who are nominated for and awarded prizes in mathematics. The four new research prizes will be funded through gifts from individuals or organizations. AWM is excited to announce that it has already received funding for the establishment of two of these prizes, the AWM-Sadosky Research Prize in Analysis and the AWM-Microsoft Research Prize in Algebra and Number Theory. Information on funding further prizes can be obtained from the AWM managing office. For contact information see <http://www.awm-math.org>.

The structure for the new research prizes will be as follows.

- The awards will be given to women within 10 years of receiving their PhD and generally pre-tenure. The main criterion for the award will be the overall impact of the nominee's work. There will be a call for nominations, and the award winner will be chosen by a selection committee.
- The prizes will be organized by field under four generally defined areas: algebra/number theory, analysis, geometry/topology, and applied mathematics. These topics will be interpreted broadly so that women in all areas of mathematics will be eligible for a prize. Research in fields such as combinatorics or logic, for example, will be grouped under one of these headings.
- Two of the four prizes will be awarded each year, with each topic appearing in alternate years.
- Prize winners will receive a plaque and an honorarium. The prizes will be awarded at a major research meeting, and the winners will be featured in the *AWM Newsletter*.

Calls for Nominations

The Executive Committee of AWM has established the **AWM-Sadosky Research Prize in Analysis** to highlight exceptional research in analysis by a woman early in her career. The prize will be awarded every other year, with the first prize to be presented at the AWM Reception at the Joint Mathematics Meetings in Baltimore, MD in January 2014. The recipient will receive a cash prize and an honorary plaque and will be featured in an article in the *AWM Newsletter*.

The prize is named for Cora Sadosky (1940–2010), a former president of AWM, and is made possible by generous contributions from Cora's husband Daniel J.



Cora Sadosky

Goldstein, daughter Cora Sol Goldstein, and friends Judy and Paul S. Green. Sadosky was president of AWM from 1993 to 1995 and a long-time faculty member at Howard University. Born in Argentina in 1940, she received her doctoral degree in mathematics from the University of Chicago in 1965 and wrote over fifty papers in harmonic analysis and operator theory. A strong advocate for women in mathematics and active in promoting the greater participation of African-Americans in mathematics, Sadosky served as a member of the Human Rights Advisory Committee of the Mathematical Sciences Research Institute. Daniel and Cora Sol Goldstein and Judy Green say: "Cora loved mathematics and hated discrimination. She saw mathematics as an object of supreme beauty and empowerment and was passionately committed to ensure that everyone in society would have total access to mathematics. Cora believed firmly in equality and freedom and, while she often spoke specifically of 'the right of

women to mathematics,' she fought with intelligence and perseverance to increase the opportunities and possibilities in mathematics for all people. This is why we think it is appropriate to institute the AWM Research Prize in Analysis named for Cora Sadosky."

When reviewing nominations for this award, the field will be broadly interpreted to include all areas of analysis. Candidates should be women within 10 years of receiving their PhD or having not yet received tenure. For full consideration, nominations should be submitted by **February 15, 2013**.

The Executive Committee of AWM has established the **AWM-Microsoft Research Prize in Algebra and Number Theory** to highlight exceptional research in some area of algebra by a woman early in her career. The prize will be

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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**.

awarded every other year, with the first prize to be presented at the AWM Reception at the Joint Mathematics Meetings in Baltimore, MD in January 2014. The recipient will receive a cash prize and an honorary plaque and will be featured in an article in the *AWM Newsletter*.

The prize is made possible by a generous contribution from Microsoft Research. Kristin Lauter, a Principal Researcher who heads the Cryptography Research Group at Microsoft Research, funded the prize in Algebra and Number Theory from the external funding budget for the group because of the importance of these research areas to cryptography and the importance of accelerating the advancement of women in these areas. Dr. Lauter says, "The high-tech industry has started to funnel significant resources to promote the advancement of women in science, recognizing that achieving gender parity in science is a national priority and is crucial for the future success of the industry.

Microsoft Research has devoted considerable resources to this cause and is committed to continuing to promote the advancement of women in science to the highest levels of research. The AWM Research Prizes are an exciting way to recognize the work of young female researchers in mathematics, focus attention on their contributions, and encourage the next generation of research leaders. This type of recognition can be important to ensuring future success in their careers, both in being awarded tenure and in securing grants to support ongoing research. It is also important to help create positive role models for younger women considering a research career in mathematics."

When reviewing nominations for this award, the field will be broadly interpreted to include number theory, cryptography, combinatorics and other applications, as well as more traditional areas of algebra. Candidates should be women within 10 years of receiving their PhD or having not yet received tenure. For full consideration, nominations should be submitted by **February 15, 2013**.

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.

Deadline. There is one award period per year. Applications are due **February 1, 2013**.



Maryam Mirzakhani



Inez Fung



Lauren Williams

AWM Launches New Symposium Series

Last year AWM celebrated its fortieth anniversary. The anniversary celebration culminated with the conference “40 Years and Counting: AWM’s Celebration of Women in Mathematics” on September 17–18, 2011. The conference was held at the Institute for Computational and Experimental Research in Mathematics (ICERM) at Brown University. Drawing upon the success of this conference, AWM will be launching a new series of Biennial Research Symposia.

AWM Research Symposium 2013 will be held at Santa Clara University, March 16–17, 2013. The symposium, the initial event in the series, will showcase the research of women in the mathematical professions. It will feature three plenary talks, special sessions on a broad range of topics in pure and applied mathematics, poster sessions for graduate students, and a panel discussion of the “imposter syndrome.”

The topics for the special sessions will include Algebraic Combinatorics, Climate Modeling, Geometric Group Theory, Model Theory (in honor of Carol Wood), Mathematics of Medicine, Random Matrix Theory, Combinatorial

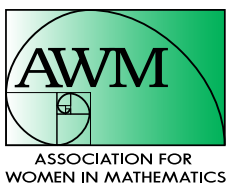
Optimization, Partial Differential Equations, and others.

The conference is being organized by Helene Barcelo, Mathematical Sciences Research Institute (MSRI); Estelle Basor, American Institute of Mathematics (AIM); Georgia Benkart, University of Wisconsin-Madison; AWM President-Elect Ruth Charney, Brandeis University; Frank Farris, Santa Clara University and AWM President Jill Pipher, Brown University and ICERM.

The Plenary Speakers will be Inez Fung, University of California Berkeley; Maryam Mirzakhani, Stanford University; and Lauren Williams, University of California, Berkeley.

The symposium sponsors are AWM, American Institute of Mathematics (AIM), Mathematical Sciences Research Institute (MSRI), Institute for Computational and Experimental Research in Mathematics (ICERM) and Santa Clara University Mathematics Department.

For further information about the symposium visit <http://www.msri.org/web/msri/scientific/workshops/show/-/event/Wm9752>.



Don't forget to renew your membership at **www.awm-math.org**!



Raman Parimala

Raman Parimala Named 2013 Noether Lecturer

AWM is pleased to announce that Raman Parimala will deliver the Noether Lecture at the 2013 Joint Mathematics Meetings. Dr. Parimala is the Arts and Sciences Distinguished Professor of Mathematics at Emory University and has been selected as the 2013 Noether Lecturer for her fundamental work in algebra and algebraic geometry with significant contributions to the study of quadratic forms, hermitian forms, linear algebraic groups and Galois cohomology.

Parimala received her PhD from the University of Mumbai (1976). She was a professor at the Tata Institute of Fundamental Research in Mumbai for many years before moving in 2005 to Emory University in Atlanta, Georgia. She has also held visiting positions at the Swiss

Federal Institute of Technology (ETH) in Zürich, the University of Lausanne, University of California-Berkeley, University of Chicago, Ohio State University, and the University of Paris at Orsay.

In the seventies, Parimala's examples of nontrivial quadratic spaces over an affine plane came as a surprise to experts, in contrast to the affirmative solution of Serre's question on triviality of algebraic vector bundles over an affine space by Quillen and Suslin. Parimala is perhaps best known for proving Serre's Conjecture II for classical groups jointly with Eva Bayer-Fluckiger. This well-known conjecture on the Galois cohomology of linear algebraic groups was formulated in the early 1960s. The problem is of continued interest and has yet to be solved for many exceptional groups. Another of her significant contributions to the theory of quadratic forms, jointly with V. Suresh, can be found in a 2010 paper, where she proved that the u -invariant of a function field of a non-dyadic p -adic curve is exactly 8, settling a conjecture made nearly 30 years earlier.

Parimala has won many awards in recognition of her accomplishments. She gave a plenary address at the 2010 International Congress of Mathematicians (ICM) in Hyderabad and a sectional address at the 1994 ICM in Zurich. By 1992 she was a Fellow of the Indian Academy of Sciences, the Indian National Science Academy and the National Academy of Sciences India.

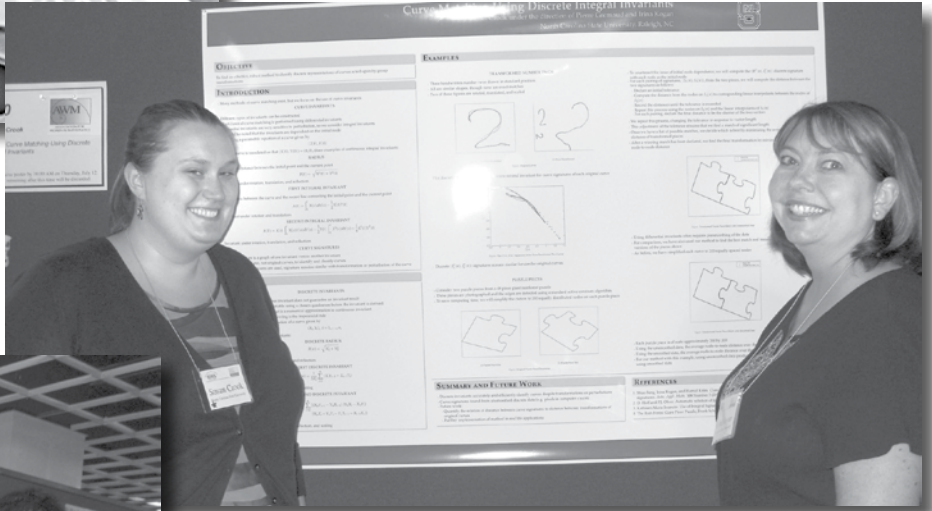
In 2005, she was awarded the prize in mathematics by the Academy of Sciences for the Developing World, making her the first woman to receive that honor. Parimala has also received the Srinavasa Ramanujan Medal of the Indian National Science Academy in 2006, an honorary doctorate from the University of Lausanne in 1999, and the Bhatnagar prize in 1987.

The 2013 Joint Mathematics Meetings will be held January 9–12 in San Diego, CA. 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 Audrey Terras, Fan Chung Graham, Carolyn Gordon, Susan Montgomery and Barbara Keyfitz.

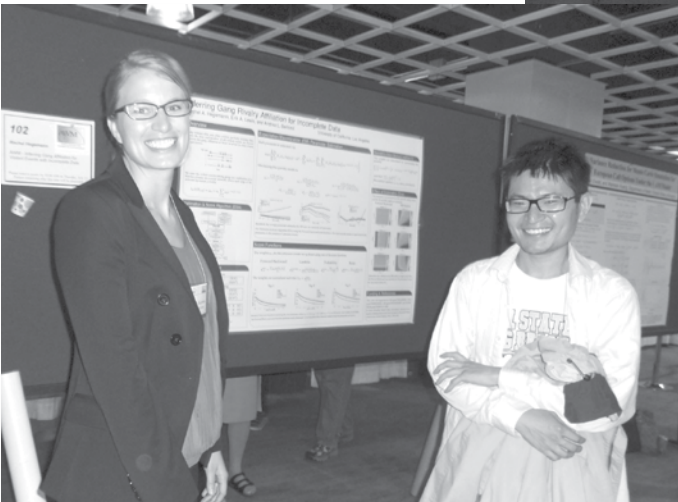
AWM at SIAM 2012



*AWM Networking Reception:
Karen Rios-Soto and Angela Shiflet*



Poster Session: Susan Crook and Michele Joyner



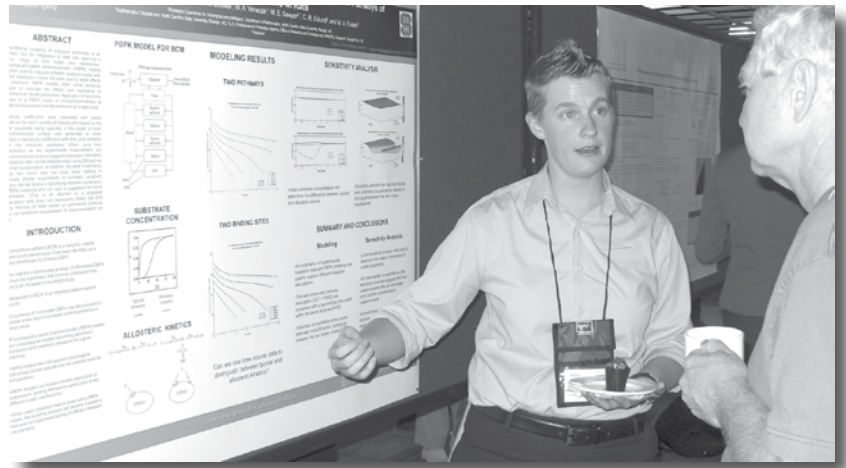
*Poster Session: Rachel Hegemann
and Alex Chen*



*AWM Booth: Barbara Keyfitz and
Cammey Cole Manning*



Ruth Davidson, North Carolina State University



Megan Sawyer explaining her poster



Malena Ines Espanol, Jennie D'Ambrose, and Brittany Erickson



Omayra Ortega and Rachel Ward



Haley Yaple explaining her poster

AWM at SIAM 2012

Parenthood on the Tenure Track

Jacqueline Jensen-Vallin, Slippery Rock University

Many women have to decide not only if they want to have a family, but also when to try to have that family. Some choose to wait until after tenure, others to have their children born during the summer months, when their arrival will not disrupt the academic year. Even with these concessions, having children while trying to earn tenure (or after) is a difficult path for many in academia. While these issues affect both men and women, women have the additional concerns of how much time to take off after the birth of a child, how (or whether) to breastfeed or pump when they return to work, and how to continue to be an active part of their department while feeling sleep-deprived and exhausted. At MathFest 2012 in Madison, WI, the AWM sponsored a panel about balancing parenthood and one's professional career. The panelists, Stephanie Edwards of Hope College, Deanna Haunsperger of Carleton College, and Melanie Matchett Wood of the University of Wisconsin – Madison, discussed these issues and more.

Each of these women had different solutions to the question of how to balance their time with their family

and their career. Stephanie Edwards, mother of four, has earned tenure twice (at the University of Dayton and at Hope College) and joked with the audience that she had three babies before tenure and two after. Stephanie said that she is in a supportive department and she was able to return to summer work about two weeks after the birth of one of her children—she even brought the baby in a sling to the REU she was running and continued working with her students! In her first tenured position, Stephanie worked in the same department as her husband, which meant that they could pass the children back and forth between offices when needed. This meant that if they had complementary teaching schedules, they could keep the newborn with them at the office when necessary.

Stephanie and her husband are not currently in the same department, which adds a layer of complication on snow days or when a child is sick, but Stephanie has a network of supportive colleagues and students who can help watch children on days when someone is ill or the elementary schools are closed. The dynamic of the department will vary greatly from university to university, and people hoping to have their children on campus will have to examine the climate at their own institution.

Melanie Matchett Wood has one child, who was born while she and her husband were post-doctoral students at

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Moderator Jacqueline Jensen-Vallin and panelists Stephanie Edwards, Melanie Matchett Wood, and Deanna Haunsperger

Parenthood on the Tenure Track *from page 5*

Stanford. Their solution to the complications of parenthood while seeking tenure? Both have half-time positions at the University of Wisconsin – Madison, and each of them has a half-time tenure clock. They find that this choice allows them to be home with their daughter, while still allowing them to pursue their careers.

Melanie and her husband made the difficult decision to have their first child while they were postdoctoral fellows, even though there were few role models for this. There were several complications of this—one being that searching for jobs with a newborn is a very challenging situation, as all of our panelists noted. Also, parental leave policies for postdoctoral fellows are different than for

faculty, because of the funding agencies. Therefore, it is a good idea to find out from the agency that funds your postdoctoral fellowship what the leave policies are, and to be aware that they may not match those for faculty at the institution at which you work.

Deanna Haunsperger had her oldest child (now 19) while she was in a temporary position and interviewing for permanent positions. This presented its own set of challenges, including figuring out how to take part in campus interviews while also caring for a newborn. She and her husband found a position at Carleton College, where they shared a tenure-track line for several years, and then both were able to find full-time positions at Carleton.

Deanna said that she and her husband managed to share tasks successfully—from being co-editors of *Math*

CALL FOR NOMINATIONS

2014 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 PhD 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; and 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 the Humphreys Award shall be submitted online. See the AWM website at www.awm-math.org for nomination instructions. Nominations must be received by **April 30, 2013** 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.

Horizons to managing to balance family and professional life when each of them was department chair. Deanna and her husband found great support in each other, having negotiated between themselves who would be more responsible for family when one of them took on additional professional responsibilities.

The panelists answered a number of questions from the audience and their advice included:

- Be sure to know what the family medical leave policy is at your institution.
- Ask whether the tenure clock will be extended if you take a leave and what the repercussions are of this extension.
- Know your department and talk to many people. Some of the repercussions of taking leave or taking an extension of the tenure clock are subtle and can only be determined by talking to your colleagues.
- Try to balance tasks with your significant other. This will not always mean having an even split of tasks, just that both of you are happy with the division of labor.
- There are no universally correct choices. Whether or not to take leave, return to work, stop the tenure clock, and so on, are all individual choices, so make the ones that are best for you and your family.
- Each family must do what is best for their family. This sometimes includes redefining what a successful career is. Each of the panelists chooses to embrace her life as a parent and has decided to be happy with whatever situation she has created for herself and her family.

Many families have made these decisions before and have valuable experience—look for colleagues who have met these challenges of family on the tenure track. Talk to them and ask many questions. Everyone will have different experiences and different perspectives. This will help you make informed decisions. Look for articles related to these challenges in future AWM newsletters.



Jill Pipher and Magnhild Lien at the AWM table, MathFest



Jill Pipher and Falconer Lecturer Karen King at MathFest

Career Options Conference

Cheri Shakiban, Associate Director, IMA

The Institute for Mathematics and Its Applications (IMA), Minneapolis, MN has been cooperating with the AWM for over a decade with the goals of increasing the participation of women in the IMA programs and of assisting young women mathematicians in their career development.

On March 3–5, 2013, the IMA will be hosting another conference on career options for women in the mathematical sciences. Around eighty women graduate students and postdocs are expected to participate. Several established women researchers will give lectures on their own research or will participate in panel discussions to advise the junior women on how to succeed in developing a research program. The conference will address many gender issues and will discuss topics such as interviewing, negotiation skills, and grant writing. There will also be some talks by successful women mathematicians working in industry and government labs, who will give participants glimpses of the possibilities for careers and collaborations outside the familiar academic track. The keynote speaker for this

conference will be AWM president, Jill Pipher.

Many of the participants of the previous conferences have commented that participating in “women only” conferences and interacting with accomplished women mathematicians and talking about their careers has been very encouraging to them. One of the greatest benefits of this conference to the graduate students and those at the start of their careers is learning that there are many opportunities available to them, not just in academia, but also in industry. Getting to know women who work in industry and are very successful and happy with their choices is encouraging for many of the young participants, some of whom ultimately might choose to seek jobs in industry.

Participants are encouraged to present a poster on their research, which will be featured at the Lightning Poster Presentation Sessions. The workshop is co-organized by the IMA and AWM. The organizers are Georgia Benkart, University of Wisconsin–Madison; Erica Klampfl, Ford Corporation; Irina Mitrea, Temple University; Evelyn Sander, George Mason University; and Cheri Shakiban, University of St. Thomas and IMA.

The deadline to apply for funding is **January 31, 2013**. More information regarding the conference can be obtained at <http://www.ima.umn.edu/2008-2009/SW3.3-5.13/>.

CALL FOR NOMINATIONS

2014 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 the Hay Award shall be submitted online. See the AWM website at www.awm-math.org for nomination instructions. Nominations must be received by **April 30, 2013** 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.

A Gender Equity Study of K–12 Classrooms Raises Questions for Collegiate Mathematics

Jackie Dewar, Loyola Marymount University, Los Angeles, CA

I open this column with information about a course on women and mathematics. This course prompted my gender equity study in K–12 classrooms that ultimately raised questions about teaching collegiate mathematics.

The publication of Teri Perl's book, *Math Equals*, in 1978 inspired me to develop a general education mathematics course titled Mathematics: Contributions by Women. For nearly two decades the course, cross-listed with women's studies, was offered every few years. It had no mathematical prerequisite beyond that required for admission to the university (perhaps three years of high school math at that time). In the 1990s the university changed its general education requirement for mathematics to emphasize quantitative literacy and began to require a specific math course to meet the requirement: Quantitative Skills in the Modern World. That prompted me to redesign the course to appeal to a new audience: future teachers. The course became an elective for math majors who would be teaching at the secondary level and for future elementary teachers who were concentrating in mathematics. In this new version of the course, the mathematical material was reworked to be accessible to students with at least a collegiate course in precalculus, while simultaneously being novel in either content or approach for junior or senior mathematics majors. Gender issues in mathematics achievement and participation from kindergarten through doctoral programs and on into math-related careers are now examined in greater depth. New readings and a poster presentation assignment explore how the experiences of contemporary women mathematicians, particularly those of color, intersect with the experiences of the nine women mathematicians from the 4th to the 20th century (Hypatia to Noether) in Perl's

book. Three rounds of funding from the Tensor MAA Women and Mathematics grant program have enabled me to team teach the course with three junior colleagues in 2008, 2010 and 2012. For more information on the course, see <http://myweb.lmu.edu/jdewar/wam>. A poster on the outcomes of the grant will be presented in the Mathematical Outreach Programs session organized by Betsy Yanik at the 2013 Joint Mathematics Meetings, Thursday, January 10, 9–11 a.m. in Exhibit Hall B2.

In 2004, because of SoTL¹ work I was doing on students' conceptions of mathematics, I added an end-of-term portfolio assignment to the course that included a short reflection essay. The reflection prompt I gave focused on the nature of mathematics, which was the topic of my SoTL investigation. The data I gathered that year suggested the course had shifted students' views of mathematics from being the study of numbers and applications to the real world toward a more expert view of mathematics as being, at its heart, all about seeking patterns and making generalizations to be proven with logical arguments (Dewar, 2008). Despite the specific mathematical focus of the prompt, the future teachers also wrote of their intentions to encourage all their students equally in the study of math once they were in their own classrooms. Their unasked-for pledges to strive for gender equity invited further inquiry into the course's influence on future teachers' views of gender equity and whether and how those might be carried out in their own classrooms in the future.

My sabbatical this past year gave me the opportunity to undertake that investigation. I was able to identify four former students, all of them women, from the 2008 offering of the course who were teaching in Los Angeles area schools. They agreed to let me observe in their classrooms and to interview them. I investigated several research questions, but the ones pertinent to this article were:

- How does resolve for an equitable classroom on the part of future teachers get carried forward into their classroom

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¹ Scholarship of Teaching and Learning

practice? As teachers, what are their current views and actions toward gender equity?

- What courses, learning experiences or pre-professional opportunities fostered these views or actions?
- What factors support and hinder them in achieving gender equity in their classrooms?

In this column I want to focus on the teachers' responses to what factors influenced their striving for an equitable classroom. The full set of findings from the study is reported in the Electronic Proceedings of the SIGMAA on RUME XV Conference (Dewar & Vig, 2012), which should be online at http://pzacad.pitzer.edu/~sbrown/RUME/RUME_XV_Volume_1.pdf by the time this column appears.

Not surprisingly, all four identified the Women and Mathematics course as an influence. After all, it was their instructor from that course who had come to their classroom to discuss gender equity. Still, each one cited very specific ways in which the course had made an impact. It had provided them with access to women role models in mathematics, role models for themselves and role models to pass on to their students. Two of them said the statistical data and discussions about the facts versus the myths of gender differences in mathematics performance and participation in math-related careers had raised their awareness of equity issues. The course also provided knowledge and materials they could use in their teaching, and two of the four were actively using these materials.

Certainly, many future teachers pass through my department and my university without ever taking a course on "women and mathematics." No doubt the same is true at all universities. How are those future teachers of mathematics going to view and practice equitable instruction in their classrooms? Will the issue even cross their minds? Should it? This observation compelled me to take a close look at what other influences they cited.

Two of them mentioned the math methods course offered by the School of Education, which all four had taken

at the same time. My classroom observations confirmed the influence of that course. I could see that they had adopted a number of the instructional strategies introduced to them by their math methods teacher. One of the instructors noted two other courses as influential: a special education course in the credential program and a coaching/mentoring course in a master's program. Another mentioned her experience in a summer research experience for undergraduates program. That same individual named an upper division mathematics course that she felt had provided a model for equitable instruction. In fact, she emphasized how significant it was for her to be made to feel welcomed and encouraged to participate in that course.

Needless to say, this sabbatical project prompted some unexpected questions about my course and my teaching in other courses: How can equitable practice be highlighted and made more explicit in the women and mathematics course? Is my teaching in all of my courses presenting a model for equitable discourse? Am I perceived as welcoming and encouraging the participation of all students? I readily admit that it is a nontrivial task for me to confront these questions. Similarly, the study generated challenging questions for colleagues (in all disciplines, not just mathematics), departments, schools of education, and universities. It will be no easy task to call attention to these questions. I present them here for the readers of the *AWM Newsletter* to ponder:

- Is gender equity or diversity addressed in our mathematics or teacher preparation curricula, or coordinated in any way between mathematics and education departments? Should it be? If so, how? By whom?
- How is "Student Voice" experienced in our own mathematics classrooms and in classrooms across our departments? Are math faculty encouraging participation, promoting confidence, and achieving engagement by all students?
- Are role models available for *all* students in our collegiate mathematics departments? If they are not among our faculty, can they be found in posters in our hallways and common spaces, in our invited colloquia speakers, in

our career panels, or in other programs our department sponsors?

- Are gender and diversity concerns in STEM fields discussed in our departments or on our campuses? Do these discussions address both theory and practice? Do they engender change or action?
- What is the value (and cost) of having collegiate math faculty visit the K–12 classrooms of former students and converse with them about their practice? Who might benefit? Could those observations and conversations lead faculty to reflect on how to improve teacher preparation programs or encourage them to consider the environment in their own classrooms?

I would welcome your thoughts on this subject, either sent directly to me via email (jdewar@lmu.edu), or shared with the readership of the *AWM Newsletter* by means of a letter to the editor on this topic.

References

- Dewar, J. (2008). What is mathematics: Student and faculty views. *Electronic Proceedings for the Eleventh Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Conference on Research in Undergraduate Mathematics Education*, San Diego, CA. Retrieved from <http://mathed.asu.edu/crume2008/Proceedings/Proceedings.html>.
- Dewar, J. & R. Vig. (2012). Future teachers' intentions for gender equity: How are these carried forward into their classroom practice? *Electronic Proceedings for the Fifteenth Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education Conference on Research in Undergraduate Mathematics Education*, Portland, OR. Retrieved from http://pzacad.pitzer.edu/~sbrown/RUME/RUME_XV_Volume_1.pdf.

BOOK REVIEW

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

Gender Codes: Why Women Are Leaving Computing, edited by Thomas J. Misa, IEEE Computer Society Press and John Wiley & Sons, ISBN-13: 978-0470597194

Reviewer: Gwen Spencer, Neukom Postdoctoral Fellow, Dartmouth College

The statistics in this book are stunning. To start: in 1984, an astronomical 37% of computer science majors were women (the rate has now dropped to around 15% and shows signs of further decline). Though I consider myself informed on gender issues in STEM, this mid-80s enrollment (and employment) boom in CS was one of many surprises I encountered while reading *Gender Codes*.

The volume brings together 14 contributors who span a wide academic range; engineers, historians of science,

anthropologists, and media-studies experts investigate the under-documented history of women in computing. What happened to bring so many women into computer science, they ask, and what could now be driving the decline in enrollments and industrial employment? The answers will be of interest not just to computer scientists.

First, it is easy to make the case that computers (and the internet) will only continue to grow in influence and impact; studying women's experiences in computing reflects crucially on the future roles of women in business, government, and scientific research. Beyond this, *Gender Codes* explores computer science as a fascinating test case of a more general question: when a new discipline emerges, how does society decide who is a good fit for this occupation? More confusing yet: how does this conversation take place when the nature of the work, and what skills it will involve, is largely unclear?

Investigating the role of gender in computer science opens the larger questions of how disciplines are gendered and of how a discipline's gender identity can evolve.

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BOOK REVIEW *continued from page 17*

Chapter 3 offers a wonderful and shocking example: before the 1900s, nearly all secretarial work in the United States was done by men. Then, as women's employment became more acceptable (and women were often available at a lower wage), a rapid cascade swept through secretarial work, until the occupation was almost entirely female. The image of secretarial work as women's work deeply implanted itself in the American psyche so that within two generations it seemed like the natural order of things, as opposed to the recent invention that it was.

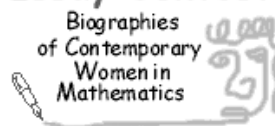
In typing a new occupation there are also questions about class-status and educational preparation. For example, try to imagine that you've never encountered a computer before: is computing blue-collar work, or skilled work, or should it require a bachelor's degree? Some of the earliest punch-card computers actually required the oiling of gears and were very loud. For these reasons, in Germany punch-card machine operation was associated with other mechanical and heavy factory work (clearly men's province then); a German punch-card supervisor was astounded to find that in the United States, punch-card operation was largely a female enterprise.

Early office computers also bore some resemblance to previous business machines (typewriters, adding machines, etc). In the British Civil Service, computing was initially understood as low-level work to be done by the poorly compensated "machine grade" (this grade was so female-dominated it was nicknamed the "women's grade"). As the tremendous implications of computing for management

became more obvious, the Civil Service struggled to recruit (completely untrained) men from the "executive grade" rather than face promoting the machine-grade female employees (who, by this time, were essentially experts on computing). The eventual exclusion of women from higher-level computing positions in the Civil Service seems to have had little to do with perceptions of technical competence: the general society had decided women lacked management skills and were unlikely to work more than a few years before marriage (making them poor candidates for costly training programs). It was while confusion about the importance of business computing existed that women found space not only to participate widely, but often to become technical experts.

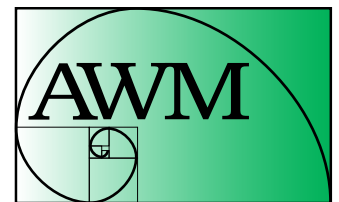
An analogous observation might be made about the earliest scientific computing efforts, where women quietly became the world's first computer programmers. In the early 1940s, when the U.S. Army built its first electronic general-purpose computer (known as ENIAC) to calculate ballistics, engineering the hardware was considered the hard part, and the configuration of the machine to perform computational tasks (automating the work of human computers, who were largely females) was imagined simply as a low-level afterthought. Even historical greats like John von Neumann fundamentally underestimated both the intellectual depth and the far-reaching implications of programming. It was the six women programmers of ENIAC who discovered and dealt with the complexities of the task, including navigating implementation under severe hardware limitations (for example, very small working memory). Several members of

Essay Contest



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 2013 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. Heather Lewis (the contest organizer) at hlweis5@naz.edu or see the contest web page: www.awm-math.org/biographies/contest.html. The deadline for electronic receipt of entries is **January 31, 2013**. (To volunteer as an interview subject, contact Heather Lewis at the email address given.)



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the ENIAC team went on to long and distinguished careers in computation, as did other programming pioneers introduced to the task as young women during the war (most famously Rear Admiral Grace Hopper, who created the world's first compiler).

Just as the tremendous demand for manufacturing workers during WWII acted as a vehicle to bring women into new roles, the "software crisis" of the late 1960s was characterized by an appetite for programmers that overwhelmed many barriers. In the absence of widespread academic training programs in computer science, programming trainees were largely selected by aptitude tests. The computing unit of the British Civil Service administered this type of test to some 700,000 people, and large companies like IBM used similar tests to identify trainees for in-house training programs. New York City's computing bureau administered aptitude tests to inmates at Sing-Sing, recruiting for full-time positions upon release. As demand for programmers surged, women across a spectrum of educational and class backgrounds found that performing well on a programming aptitude test was a fast track to professional and well-compensated positions (completely bypassing the low-prestige data-entry work largely dominated by women).

In accounts from this period, women describe the incredible openness they perceived in computing (compared with other technical, academic, and industrial professions). Chapter 10 focuses on oral histories. Accompanying the advantages of interesting engineering questions and opportunities to work collaboratively with smart colleagues, women often felt that they had discovered an oasis of meritocracy: in computing, so long as your code worked, no one seemed to care who you were. In both a technical and social sense, computing presented an exciting frontier (though the text notes that the wage gap, once qualifications were accounted for, was still around 10%). One of the women interviewed says that she still considers computing to be the absolute best career for women; the contrast to the popular contemporary story about women leaving technical fields due to subtly hostile climate could not be more extreme.

So, what happened in the mid-eighties? While other STEM fields continued to slowly but steadily increase their percentage of undergrad women, a precipitous decline began

in computer science. Strangely, at the PhD and professor levels, computer science continued to resemble other fields (that is, gradual increases). How could undergrad enrollments be crashing when women professionals were enjoying their work in computing and increasingly breaking into the upper levels of the practice?

Gender Codes places the balance of the blame on the gradual purification and solidification of the public identity of computer science: a result both of internal efforts to professionalize the discipline and external efforts of the media. Feminine labor has always been devalued; early professional associations, seeking to gain respect, and hence high compensation for their work, carefully excluded the branches of computing that were dominated by women. Then, once the culture skewed strongly male, it became self-replicating.

In the mid-eighties the image of the male geek (or, more positively, computer wizard) began to take hold in the international media. Two fascinating chapters examine articles in the Norwegian press and decades of advertising images in a major computing magazine in Greece. In thousands of advertisements, women act as assistants performing the routine tasks (like printing and taking dictation), whereas men are the managers, giving orders by phone while surveying important technical reports (and absolutely never typing). Newspaper stories become obsessed with two characters: the male computer whiz and the female Luddite who is in terrible danger of being left behind in the new information age. The vast majority of men who are not computer experts are ignored, and female computer experts are made basically invisible. Several strong narratives emerge: the mysterious priesthood of computer geniuses, the dot.com boy's club, and always, women trailing hopelessly behind. Though the academic language in these chapters was initially a bit specialized for me, I ultimately found them very useful. For example, I've been reading tech stories differently: the coverage of Mark Zuckerberg wearing a hoody to negotiate the Facebook IPO now appears in a greater context, as a construction and mythologizing of a particular type of tech giant.

Gender Codes touches briefly on some successful efforts by academic institutions to increase female enrollment in undergrad computer science. At Carnegie Mellon, CS

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prerequisites were removed, and intro CS classes were restructured to focus on applications. Starting intro classes from zero knowledge removes the illusion that fellow (male) students who arrive with some recreational coding abilities are naturally gifted and impossible to compete with. I followed this with great interest as my own alma mater, Harvey Mudd College, has started to adopt some similar practices and has begun to take incoming female students to the annual Grace Hopper Celebration of Women in Computing (after a few years the percentage of female CS majors there has almost doubled). Adapting the curriculum at Mudd always raises concerns, and these are voiced loudly in *Gender Codes*: does this rewriting of the course dilute the technical content, or render it misleadingly attractive by appealing to stereotypes about women's interests (for example, in social interaction)? A classical positive stereotype intended to make the case for women's wider participation in computer science (and tech entrepreneurship) is the idea of women as inherently user-oriented designers. Hinging the importance of equal access, and attempts at remediation, on the idea that there really is some inherent gender difference seems dangerous; I appreciated that *Gender Codes* seemed fairly savvy about acknowledging these sore spots in common cases for women's inclusion. Contrary to a concern expressed in the book however, I don't fear the diffuse branching into applications. Certainly when we regard the entrepreneurial internet giants, the huge contributions aren't primarily technical: the innovation is in dramatically reimagining how a society will interact with computers (and what tools will make this possible). Teaching computer science as a method in science and commerce is hardly a misleading ploy; rather, to do otherwise risks disguising from all students the incredible and transformative reach of computing.

What of this supposedly mammoth problem of harmful cultural stereotypes? While *Gender Codes* attaches great importance to this issue, it offers no satisfying explanation of why this should have such profound effect in CS, while young women are apparently able to shrug off popular derogatory messages about their mathematical ability (women now make up 45% of undergrad math majors). Here, bolstered

by the demographic data presented in Chapter 2, I offer a theory: can it be coincidence that the undergraduate majors with the lowest female enrollment are exactly the subjects that are not taught in standard high school curricula (namely, engineering and computer science)? As a matter of standard course, girls take math, and by doing math, find that they like math and are good at it. Given the opportunity to gather direct evidence, girls are less intimidated by larger societal discourses about their abilities and intellectual tastes. Without normalized exposure to programming and engineering, girls have nothing to place on the scale against the stereotypes they are presented. Though untested, this hypothesis may help us to understand why the solidification of the image of computer experts as male in the late-eighties and early 90s bit so deeply into women's enrollment. The gradual rise of women in the computer science professoriate is a wonderful phenomenon in its own right, but if we hope that the presence of these women will have an inspirational/role-model effect on undergrad female enrollment, we need to make sure women haven't effectively opted out of computer science by the time they arrive at college.

Chapter 13 concludes that there is cause to think that the public image of practitioners of computing is diversifying (both for women and men) and that there is room for more archetypes of computer experts. Reaching young women with new images of computer science as a discipline and computer scientists themselves seems essential in correcting the decline in undergrad enrollments.

While not every chapter of *Gender Codes* is an addictive read, as a whole it makes a major contribution beyond chronicling interesting historical facts. First, the editorial choice to approach the topic from so many angles (demographic data, history of governmental institutions, media-document analysis, oral histories) provides an incredibly rich view. In the classical anthropological sense, *Gender Codes* makes the current male-centric gendering of computer science appear strange, showing that this association is intricately constructed and hardly some natural phenomenon. By exposing a history of gender in computing that is fantastically more broad and complex than most modern readers could predict, *Gender Codes* invites its audience to imagine a future for computing that is also substantially more diverse and all-inviting than the immediate present may suggest.

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.

Women Mathematicians on the Web, Part IV: The Virtual Reference Shelf

Margaret A.M. Murray, margaret-a-murray@uiowa.edu

Installments I, II, and III of this series appeared in the May–June, July–August, and September–October 2012 issues of this newsletter.

In the third installment of this series, I turned my attention to what I call *the virtual reference shelf*: the Web sources that have rapidly become canonical for those seeking to learn more about the history of mathematics. I began with a critical appraisal of Wikipedia, calling particular attention to its liabilities as a reference for the history of women in mathematics. In this fourth and final installment, I consider four older sources on the virtual reference shelf. Each source has been in wide use since the 1990s, and—perhaps not surprisingly—each one is frequently cited as a reference in Wikipedia articles.

* * *

The oldest of these sources is the **MacTutor History of Mathematics Archive** (<http://www-history.mcs.st-and.ac.uk/>), created and developed by two mathematics professors (now retired) at the University of St. Andrews, Scotland: John J. O'Connor and Edmund F. Robertson. The MacTutor Archive predates the Web by about five years.¹ Robertson writes that, in 1988,

the University of St. Andrews set up a microlab of Macintosh computers for the School of Mathematics and [O'Connor and] I began to develop teaching material which we called Mathematical MacTutor—the “Mac”

because it was developed on Macintosh computers.... It was designed to teach mathematics and as part of our system we had biographies of mathematicians and histories of mathematical topics. Before we went to Heidelberg [in November 1994 for the finals of the European Academic Software Awards] we put our historical material on the Web—which was just starting to be widely used—and showed it as part of our submission to the judges.... MacTutor was the winning entry in the “mathematics” category but we were told that it had been judged the best software overall.

With the rapid growth of the Web, the historical portion of the Mathematical MacTutor garnered wide attention, eventually eclipsing other aspects of the larger program. Robertson writes that he is the author of nearly all the 2000+ biographies and historical essays on the site, while O'Connor is largely responsible for “Web implementation” of the project—although the initials of both men (“JOC/EFR”) appear next to the copyright on every biography I've yet seen.²

From the perspective of the history of women in mathematics, MacTutor has two major sections of interest. The first is the Index of Female Mathematicians (<http://www-history.mcs.st-and.ac.uk/Indexes/Women.html>), which provides an alphabetical list of links to the 125 MacTutor biographies of female mathematicians.³ The second is the Davis Archive (<http://www-history.mcs.st-and.ac.uk/Davis/index.html>), a dataset compiled by historian of mathematics A.E.L. Davis, “which lists the names of all women honours graduates” in mathematics from 21 colleges and universities in the United Kingdom—approximately 2500 women in all—for the period 1878–1940. The Davis Archive includes year-by-year statistics on the number of male and female graduates from each institution, and biographical data on each woman for which it is available. There is slight, but significant, overlap between the two sections; for example, Mary Cartwright, Florence Nightingale David, Philippa Fawcett, and Charlotte Angas Scott appear in both the MacTutor biographies and the Davis archive.⁴

While I haven't examined every biography in the Index of Female Mathematicians, the oldest biographies I've seen there—including those of Sophie Germain, Sofia Kovalevskaya, and Rósza Péter—have December 1996

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copyright dates. The Kovalevskaya biography is a good example of the MacTutor biographical style. It begins with a brief summary of her family origins, followed by a general outline of her mathematical education; in Kovalevskaya's case, this consists of a litany of obstacles overcome. Brief mention is made of her personal life—in particular, her marriage, which made it possible for her to leave Russia in pursuit of higher education—and the specific subjects of her mathematical research, though little is said about her extra-mathematical political and artistic pursuits. The biography is interspersed with brief quotations from Kovalevskaya and one of her contemporaries. A list of 14 references—including books and articles in both English and German—provides a wide-ranging guide to further reading. The Kovalevskaya page concludes with links to “Mathematicians Born in the Same Country,” “Additional Material in MacTutor,” “Honors Awarded to Sofia Kovalevskaya,” cross-references to other MacTutor articles, and links to other websites about Kovalevskaya.

The MacTutor biographies vary widely in their length, level of detail, and balance between personal and professional information. The 1999 biography of Grace Hopper, listed at 1729 words long, focuses primarily upon her military and industrial career—but also includes a link to some singularly unflattering personal reminiscences of Hopper by Jean Bartik, one of the first programmers of the ENIAC computer at the University of Pennsylvania.⁵ The 2008 biography of Edith Luchins weighs in at 2151 words, close to half of which consist of extracts from published reviews of her first two mathematical papers, brief abstracts of two of her other mathematical papers, and an extended quotation from her 1979 *Monthly* article on mathematics and gender.⁶ But since the articles have been written over a period of 15+ years, I would be surprised if the articles *didn't* show significant variations in style and emphasis.

The MacTutor biographies of Evelyn Granville and Marjorie Lee Browne—long believed to have been the first two African-American women to earn PhDs in mathematics—date back to 2001. Both biographies cite Patricia Kenschaft's 1981 paper on African-American women in mathematics, and the Granville biography cites my book,

but neither biography has been corrected to reflect the rediscovery of Euphemia Lofton Haynes.⁷ Of course, it is well-nigh impossible for such a large database maintained by just two people to undergo continuous revision in response to shifting developments in historical research. Certainly neither Pat Kenschaft nor I have been asked to continually revise our conventionally published books and articles! But it bears repeating that if we choose to obtain our historical information by one-stop shopping at a *single* source—on the Internet or elsewhere—we are by default choosing to accept the perspective, the idiosyncrasies, and the errors of that source. Fortunately, in the case of the MacTutor archive, the errors seem to be few.

* * *

Although the MacTutor project dates back to the 1980s, the MacTutor Index of Female Mathematicians appeared at roughly the same time as another well-known source on the virtual reference shelf, **Biographies of Women Mathematicians at Agnes Scott College** (<http://www.agnesscott.edu/lriddle/women/women.htm>), begun by Professor Larry Riddle in 1995.⁸ By my count, there are currently just under 200 biographies on the Agnes Scott site. The first biographies to appear at the Agnes Scott site were written by Riddle's own students—members of the Agnes Scott graduating classes of 1995 through 1998—and have as their subjects some of the first female mathematicians known to history, including Hypatia, du Châtelet, Herschel, Germain, Somerville, and Kovalevskaya. Not surprisingly, these first biographies make use of well-known print references for the history of women in mathematics, such as Lynn Osen's 1974 *Women in Mathematics*, Grinstein and Campbell's 1987 *Women of Mathematics*, and Morrow and Perl's 1998 *Notable Women in Mathematics*, all of which are still in print.⁹

Over time, however, an increasing number of the Agnes Scott biographies have been reprinted from other sources, written by guest authors from other colleges and universities, or written by Riddle himself. Some of the entries are, in fact, brief autobiographies. Not surprisingly, then, the articles vary widely in length and style, as well as in the number

and quality of the references used. Riddle himself has clearly revisited many of the articles, revising them to correct errors and provide updated information; for example, the articles on Marjorie Lee Browne, Evelyn Granville, and Euphemia Lofton Haynes clearly establish the chronology of their PhDs.

At some point in their evolution, the MacTutor and Agnes Scott projects began making explicit reference to one another. While this doubtless began as a professional courtesy, it has had the effect of creating a certain circularity between the two sites. Moreover, the MacTutor and Agnes Scott projects draw on a large pool of shared source material. In particular, both sites frequently use Grinstein and Campbell as a reference, and each site features biographies of most, if not all, of the 43 mathematicians featured in *Women of Mathematics*. The net result is a certain amount of redundancy—and a mild sense of déjà vu—when passing back and forth between the MacTutor and Agnes Scott projects.

* * *

For anyone seeking specifics about the history of Africans and African-Americans in research mathematics, the **Mathematicians of the African Diaspora** (MAD) site (<http://www.math.buffalo.edu/mad/index.html>), a project begun in 1997 by Professor Scott W. Williams of the University of Buffalo, is an indispensable volume on the virtual reference shelf. The site features profiles of 256 Black men and women who either earned a PhD in mathematics or had a “career in original mathematics research.”¹⁰ While some of these profiles consist of little more than a name together with the PhD year and institution, others are much more detailed. For example, the profile of Elbert Frank Cox, the first African-American man to earn a PhD in mathematics (Cornell, 1925), runs to about 600 words and lists 6 references, while the profiles of Evelyn Granville and Euphemia Lofton Haynes each run to about 1200 words long and cite 5 references.¹¹

Williams seems to use somewhat broader criteria for inclusion of women in his profiles than he does for men. For example, at the *Black Women in Mathematics* page (<http://www.math.buffalo.edu/mad/PEEPS/womenpeeps.html>) Williams lists over 125 women who have earned PhDs in “the mathematical sciences,” including related disciplines such as

computer science, engineering, physics, and statistics. For nearly all of these women he provides a link to a brief profile. With notable exceptions—the Euphemia Lofton Haynes profile comes immediately to mind—the profiles themselves don’t offer the level of detail found in the MacTutor or Agnes Scott collections. In particular, there are some links that need to be updated, and several profiles have not been updated to reflect recent deaths.¹²

But Williams’ objective in the MAD site is, first and foremost, to provide visibility for a group of mathematicians that has been largely neglected by historians. While MacTutor and the Agnes Scott site include biographies of but a handful of Black mathematicians, male or female, the MAD project assembles, in one place, a basic chronology of Black contributions to mathematics and the seeds of a comprehensive list of names and references, forming the basis for a rich field of future research.¹³

* * *

The fourth major source on the virtual reference shelf, **The Mathematics Genealogy Project** (MGP) site (<http://genealogy.math.ndsu.nodak.edu/index.php>), was begun by Professor Harry Coonce at North Dakota State University in 1996, and began as an effort to create a complete database of PhDs in mathematics, including the name, PhD institution, PhD adviser, and year of degree for each recipient. Every biography of a PhD mathematician in the MacTutor and Agnes Scott projects contains a link to the relevant MGP page, and each MGP page contains a link to the MacTutor biography, if it exists.¹⁴

Among PhD mathematicians, the MGP is, without question, one of the most wildly popular and widely cited sources on the Web, largely because mathematicians are as curious about their intellectual lineage as they are about their biological lineage. And, over the years, MGP data has become increasingly reliable. In the early days of the project, Coonce relied on *Dissertation Abstracts* for data on American PhDs; later, he consulted similar databases from other countries. The MGP has also relied on data submitted by colleges and universities, together with a host of other print and online

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resources, and—significantly—the contributions of individual users.¹⁵

The MGP is a magnificent historical research tool; it has brought pleasure and illumination to thousands of mathematicians, and it has inspired similar projects in other fields. Like the MacTutor, Agnes Scott, and MAD projects, the MGP is essentially the brainchild of a single individual. But—unlike the others—MGP has enjoyed an extraordinary degree of financial, moral, and institutional support.

Thus it is with some regret that I mention my central concern about this database, which currently contains over 160,000 records: it is simply impossible for a user to know the source of the information found on any individual record! I'll give an example from my own experience with the MGP to illustrate the point. Several years ago I searched the MGP for my own doctoral adviser, Ronald R. Coifman; at the time, the MGP listed his PhD institution as the University of Chicago and his adviser as Guido Weiss. Now, Coifman began his US career at Chicago, and Weiss was his longtime collaborator, but Coifman himself had told me that he'd earned his PhD at Geneva in 1965 under Jovan Karamata. So I submitted that information to the MGP, and within a couple of days Coifman's entry was revised in light of my submission. I'm entirely confident that the information I submitted was correct—but that "information" was, in fact, only well-informed hearsay.¹⁶

When it comes to women in mathematics, the information on MGP is often incomplete and sometimes, frankly, weird. In mid-September 2012, the entry for Dorothy Bernstein read that she received two PhDs—one from Wisconsin in 1930, and another from Brown in 1939! The title of her dissertation (*The Double Laplace Integral*) and her adviser (J.D. Tamarkin) are correct, but the subject matter of her dissertation ("Order, lattices, ordered algebraic structures") is certainly not. Moreover, she is listed as having no known PhD students. But Dorothy Bernstein was the first woman elected President of the MAA, and as such was a very prominent member of the American mathematical community. Moreover, information about her life and work is available in print and online from

a whole host of sources—most notably, Green and LaDuke, who state clearly that Dorothy Bernstein had three doctoral students at the University of Rochester: Geraldine Coon (1950), John Perry (1960), and David M. Burton (1961).¹⁷

Allyn Jackson has written that "[a]lthough mistakes inevitably creep in [to the MGP], so many people use the database that many errors are eventually found and corrected."¹⁸ Perhaps—but the same assumption lies at the heart of Wikipedia, too. If there's one change I could make to the MGP—if only to the records of 20th century doctorates—it would be the inclusion of references for the information on each page. Otherwise, the serious historian of mathematics is faced with the challenge of having to verify the MGP's data by tracking down another source.¹⁹

* * *

Taken together, these four sources on the virtual reference shelf—MacTutor, Agnes Scott, MAD, and MGP—constitute an excellent set of resources for the history of women in mathematics, each with its own idiosyncratic strengths and limitations. I use and enjoy them, but with a healthy skepticism and an open and questioning mind. I hope you will do the same.

Notes

1. I am indebted to Edmund Robertson for providing, in a recent e-mail conversation, details on the early history of the MacTutor Archive. The World Wide Web Consortium (<http://www.w3.org>) has several pages dedicated to the early development of the World Wide Web (see <http://www.w3.org/History.html> and associated links). While Tim Berners-Lee developed the first Web browser in 1990, the Web was not widely used until the 1993 release of the Mosaic browser; I clearly recall using Mosaic—using my first, newly acquired Mac—for the first time later that year.
2. The Mathematical MacTutor was originally designed using Apple's HyperCard—a program that organizes information into "stacks" of virtual "cards." See Apple Computer U.K., "St. Andrews MacTutor," *FactFile 10: Mathematical and Computational Sciences*, February 1997, accessed at http://johnarudkin.net/page11/files/FactFile_10.pdf. The HyperCard origins of MacTutor are still plainly evident in its Web incarnation. For more

- on HyperCard and its relationship to the subsequent development of the Web, see Leander Kahney, "HyperCard: What Could Have Been," *Wired*, August 14, 2002, online at <http://www.wired.com/gadgets/mac/commentary/cultofmac/2002/08/54370>.
3. This is the number of biographies available as of July 2012—and at the time of this writing, in September 2012.
 4. The Davis archive was compiled during the years 1992–1996, with funding from the Open University, with which Davis was then affiliated; in addition to its publication on the MacTutor site, the archive is housed at UK Data Archive of the Economic and Social Data Service (ESDS) of the University of Essex (see http://www.esds.ac.uk/doc/3654%5Cmrdoc%5CUKDA%5CUKDA_Study_3654_Information.htm). Davis is now affiliated with Imperial College London and the Australian National University in Canberra (see <http://www3.imperial.ac.uk/historyofscience/chostmpeople/davis>). The Davis Archive was added to the MacTutor site in 2004, and is discussed further in note 19 below.
 5. The word count for a given mathematician's biography is given on the alphabetical index page for that biography; for example, the Hopper word count may be found on the page of *Names Beginning with H* (<http://www.history.mcs.st-and.ac.uk/Indexes/H.html>). For comparison, Bartik's own biography—added to MacTutor in 2012—is listed at 2275 words long.
 6. As seems to be the case throughout MacTutor, the quoted articles are not included in the references, though the text of the biography usually says enough about the paper in question that it can be easily tracked down. The *Monthly* article in question is Edith H. Luchins, "Sex Differences in Mathematics: How *Not* to Deal With Them," *American Mathematical Monthly* 86 (1979): 161–168.
 7. See Patricia Clark Kenschaft, "Black Women in Mathematics in the United States," *American Mathematical Monthly* 88 (1981): 592–604; and Margaret A.M. Murray, *Women Becoming Mathematicians: Creating a Professional Identity in Post-World War II America* (Cambridge: MIT Press 2000). See also the second installment in this series, Margaret A.M. Murray, "Women in Mathematics on the Web, Part II: Finding the First," *AWM Newsletter* 42 (July–August 2012) 2: 12–15.
 8. Larry Riddle lists the starting date of 1995 on his CV; see <http://ecademy.agnesscott.edu/~lriddle/riddle-vita.pdf>. In the early days, the website was located on the Scott Local Area Network—*scottlan*—and I heard many mathematicians assert that the Agnes Scott site, like MacTutor, was based in Scotland.
 9. Lynn Osen, *Women in Mathematics* (Cambridge: MIT Press 1974); Louise S. Grinstein and Paul J. Campbell (Eds.), *Women of Mathematics: A Biobibliographic Sourcebook* (Westport: Greenwood Press 1986); and Charlene Morrow and Teri Perl (Eds.), *Notable Women in Mathematics: A Biographical Dictionary* (Westport: Greenwood Press 1998). Grinstein and Campbell is also a frequently cited reference in the MacTutor biographies.
 10. These criteria are laid out at <http://www.math.buffalo.edu/mad/PEEPS/madprofiles.html>.
 11. One of the references for the Granville article is the autobiographical essay reprinted at the Agnes Scott site. The Agnes Scott project, in turn, cites the MAD site in its biographies of Marjorie Lee Browne, Gloria Hewitt, and Euphemia Lofton Haynes.
 12. For example, as of this writing the MAD site has yet to take note of the deaths of David Blackwell (1919–2010) or J. Ernest Wilkins, Jr. (1923–2011). The MAD page devoted to recent deaths (<http://www.math.buffalo.edu/mad/deaths.html>) leaves off at about 2007.
 13. For more on the aims of the MAD site, see Carolyn Mooney, "A Web Site Tells Black Math Scholars 'Who We Are,'" *Chronicle of Higher Education* 53 (2006) 6: B14, available at <http://chronicle.com/article/A-Web-Site-Tells-Black-Math/11372/>. The *Sources and References to Modern Mathematicians* page (http://www.math.buffalo.edu/mad/madrefs_modern.html) and the *Sources and References to Ancient Mathematicians* page (http://www.math.buffalo.edu/mad/Ancient-Africa/madrefs_ancient.html) provide the germ of a comprehensive bibliography of print sources. The *Research Mathematicians* page (<http://www.math.buffalo.edu/mad/ResearchMathematicians.html>) attempts to enumerate the publications of Black research mathematicians.
 14. Profiles on the MAD site reference MGP, too, but not so consistently. For more information, see Allyn Jackson, "A labor of love: The Mathematics Genealogy Project," *Notices of the AMS* 54 (September 2007) 8: 1002–1003, available at <http://www.ams.org/notices/200708/tx070801002p.pdf>; and *The Mathematics Genealogy Project Mission Statement*, <http://genealogy.math.ndsu.nodak.edu/mission.php>. As the project has evolved,

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it has come to include research mathematicians of earlier centuries—before the modern PhD existed—creating links between those mathematicians, their teachers, and their students, with the goal of “trac[ing] the intellectual history of the mathematical sciences” (Jackson, p. 2003).

15. See the MGP *Acknowledgments* page (<http://www.genealogy.math.ndsu.nodak.edu/acknowledgments.php>) for what is surely a partial list of contributors.
16. Coifman himself addresses the Weiss-Karamata confusion in Ronald R. Coifman and Robert S. Strichartz, “The School of Antoni Zygmund,” in R.A. Askey, H.M. Edwards, and U.C. Merzbach (Eds.), *A Century of Mathematics in America, Part III* (Providence: American Mathematical Society 1989). To this day, I don’t know the title of Coifman’s dissertation—and the MGP still does not provide it.

17. See Judy Green and Jeanne LaDuke, *Pioneering Women in American Mathematics: The Pre-1940 PhDs* (Providence: American Mathematical Society, 2008); the list of Bernstein’s students may be found in her online entry at <http://www.ams.org/publications/authors/books/postpub/hmath-34>. Bernstein earned a BA and an MA from the Wisconsin in 1934 and a PhD from Brown in 1939. The late John Perry, a good friend and colleague at Virginia Tech, was the first mathematician I’d ever met whose PhD adviser was a woman.
18. Jackson 2007, p. 1003 (see note 14).
19. The problem of sources is not unique to the MGP: the Davis Archive (as it appears on MacTutor) gives no indication of how Davis obtained the data, although methodological information is available from the UK Data Archive site (see note 4). The data on PhD institution, PhD adviser, and year of degree are also not clearly sourced on the MAD site. But neither the Davis Archive nor the MAD site are as widely cited as the MGP.

Work-Life Integration

AWIS, March 2012

Attracting workers into science and technology fields could be hampered by work-life integration issues according to a new international survey. Drawing data from 4,225 publishing scientists and researchers worldwide, the Association for Women in Science (AWIS) finds that lack of flexibility in the workplace, dissatisfaction with career development opportunities and low salaries are driving both men and women to reconsider their profession.

More than half (54%) of all scientists and researchers said that work demands conflict with their personal lives at least 2–3 times per week. Only a third of researchers agreed they work for family friendly institutions. Only half of the women (52%) reported that they are happy with their work-life integration, compared with 61% of men working in research across all fields.

One third of researchers say that ensuring good work-life integration has negatively impacted their careers, and

women (37%) were more likely than men (30%) to say this was the case. For those researchers with dependent children, 36% reported career problems. Nearly 40% of women respondents have delayed having children because of their careers, while 27% of males indicated the same situation. A number of women mentioned waiting until they had a permanent position to get pregnant or noted that they could not afford to start a family on their wages.

“These findings confirm that work-life conflict is not gender-specific in the scientific community,” said Janet Bandows Koster, AWIS executive director & CEO. “The real issue is that the academic workplace is still modeled on an ideal that no longer exists nor complements the realities of today’s global workforce.”

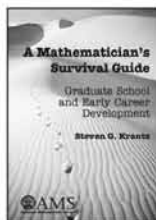
“If researchers who want a fulfilling home and worklife are being driven out of the industry through archaic working practices, it’s time to address the system itself. Let’s stop pointing the finger at women by putting a baby band aid on the problem and solve the real issues,” said Bandows Koster.

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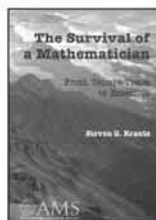
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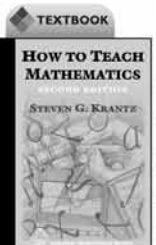
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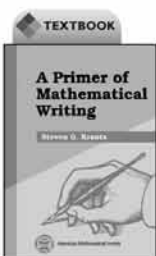
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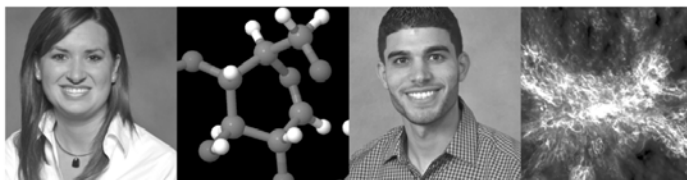
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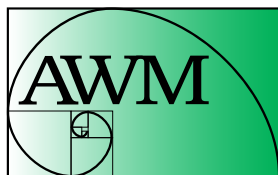
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First consideration will be given to candidates in areas of Topology/Geometry and Algebra. Candidates in other areas in which the department already has some presence will be considered. These appointments are part of the Binghamton NY-SUNY 2020 Project on Smart Energy Research and Development.

Additionally we anticipate funding for at least one postdoc position in areas of interest to the department.

Please submit applications via mathjobs.org. Applications received before November 2, 2012 are guaranteed full consideration. Binghamton University is an equal opportunity/affirmative action employer.

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Association for Symbolic Logic ASL Travel Awards

Student Travel Awards: The 2013 ASL North American Annual Meeting and other ASL or ASL-Sponsored Meetings. The ASL will make available modest travel awards to graduate students in logic so that they may attend the 2013 ASL North American Annual Meeting in Waterloo, Ontario, Canada (the announcement for travel award applications for the 2013 European Summer Meeting will be made shortly. 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 is supported by a grant from the US National Science Foundation; NSF funds for meetings outside of North America 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 2013 ASL North American Annual Meeting, applications and recommendations should be received before the deadline of **March 4, 2013**, by the Program Chair: Ilijas Farah, Dept. of Math. & Statistics, York University, 4700 Keele Street Toronto, Ontario, Canada M3J 1P3; Fax: 416-736-5757; email: ilijasf@gmail.com. Applications by email are preferred.

For ASL student member travel grants to other ASL or ASL-sponsored meetings (other than the 2013 North American Annual Meeting and the 2013 European Summer Meeting), 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.org>.

AGNES SCOTT COLLEGE—Agnes Scott College, a highly selective, independent national liberal arts college for women located in metropolitan Atlanta, invites applications for a tenure-track position in mathematics beginning Fall 2013. All fields of mathematics and statistics will be considered. The teaching load is five semester courses per year, class sizes are small, and the college is committed to providing its faculty with a supportive academic environment that includes a balance of teaching, research, and service. For details, please see our forthcoming ad at <http://eims.ams.org>, and visit the department at <http://math.agnesscott.edu/>. Agnes Scott College enrolls a socially and economically diverse student body, and has a strong commitment to diversity. The college urges members of underrepresented groups to apply. EOE.

BOSTON UNIVERSITY—Department of Mathematics and Statistics Tenure Track Position – Statistics The Department of Mathematics and Statistics at Boston University invites applications at the tenure-track Assistant Professor level in Statistics. Ph.D. required, salary commensurate with experience. The position will begin in July 2013, subject to final budgetary approval. Strong commitment to research and teaching is essential. Please send a cover letter, CV, research statement, teaching statement, and at least four letters of recommendation, one of which addresses teaching, to Statistics Search, Department of Mathematics and Statistics, Boston University, 111 Cummington St., Boston, MA 02215. Alternatively, submit all materials to mathjobs.org. Application Deadline **January 2, 2013**. Boston University is an Affirmative Action, Equal Opportunity Employer.

CALIFORNIA INSTITUTE OF TECHNOLOGY —Harry Bateman Research Instructorships in Mathematics – **Description:** Appointments are for two years. The academic year runs from approximately October 1 to June 1. Instructors are expected to teach one course per term for the full academic year and to devote the rest of their time to research. During the summer months there are no duties except research. **Eligibility:** Open to persons who have recently received their doctorates in mathematics. Deadline: **January 1, 2013**. Application information: Please apply online at mathjobs.org. To avoid duplication of paperwork, your application may also be considered for an Olga Taussky and John Todd Instructorship. Caltech is an Affirmative Action/Equal Opportunity Employer. Women, Minorities, Veterans and Disabled Persons are encouraged to apply.

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CALIFORNIA INSTITUTE OF TECHNOLOGY—Scott Russell Johnson Senior Postdoctoral Scholar in Mathematics—**Description:** There are three terms in the Caltech academic year. The fellow is expected to teach one course in two terms each year, and is expected to be in residence even during terms when not teaching. The initial appointment is for three years with an additional three-year terminal extension expected. **Eligibility:** Offered to a candidate within six years of having received the Ph.D. who shows strong research promise in one of the areas in which Caltech's mathematics faculty is currently active. **Deadline: January 1, 2013.** Application information: Please apply online at mathjobs.org. To avoid duplication of paperwork, your application will also be considered for an Olga Taussky and John Todd Instructorship and a Harry Bateman Research Instructorship. Caltech is an Affirmative Action/Equal Opportunity Employer. Women, Minorities, Veterans and Disabled Persons are encouraged to apply.

CALIFORNIA INSTITUTE OF TECHNOLOGY—Olga Taussky and John Todd Instructorships in Mathematics—**Description:** Appointments are for three years. There are three terms in the Caltech academic year, and instructors are expected to teach one course in all but two terms of the total appointment. These two terms will be devoted to research. During the summer months there are no duties except research. **Eligibility:** Offered to persons within three years of having received the Ph.D. who show strong research promise in one of the areas in which Caltech's mathematics faculty is currently active. **Deadline: January 1, 2013.** Application information: Please apply online at mathjobs.org. To avoid duplication of paperwork, your application will also be considered for a Harry Bateman Research Instructorship. Caltech is an Affirmative Action/Equal Opportunity Employer. Women, Minorities, Veterans and Disabled Persons are encouraged to apply.

CALIFORNIA INSTITUTE OF TECHNOLOGY—The Division of Physics, Mathematics, and Astronomy at the California Institute of Technology invites applications for a possible tenure-track position in Mathematics at the assistant professor level. We are particularly interested in the following research areas: Algebraic Geometry/Number Theory, Analysis/Dynamics, Combinatorics, Finite and Algebraic Groups, Geometry/Topology, Logic/Set Theory, and Mathematical Physics, but other fields may be considered. The term of the initial appointment is normally four years for a tenure-track assistant professor (with a possible extension to as much as seven years). Appointment is contingent upon completion of the Ph.D. Exceptional candidates may also be considered at the associate or full professor level. We are seeking highly qualified applicants who are committed to a career in research and teaching. **Applicants should apply online at mathjobs.org.** Caltech is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

CLARKSON UNIVERSITY—Clarkson University Department of Mathematics (www.clarkson.edu/math) invites applications for a tenure-track Assistant Professor position in applied mathematics starting in August 2013. We are especially interested in candidates with expertise in computational areas of applied mathematics, including statistics or dynamical systems, but all areas of applied mathematics will be considered. Responsibilities will include teaching undergraduate and graduate level mathematics courses, and directing graduate students. Minimum requirements are a Ph.D. in 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. Applications including vita and three reference letters should be submitted to <https://clarkson.peopleadmin.com/>. Completed applications will be reviewed starting immediately. Women and minorities are urged to apply. Clarkson University is an AA/EOE Employer. (Pos. #312)

DARTMOUTH COLLEGE—The Department of Mathematics anticipates a tenure-track opening with initial appointment as an Assistant Professor in the 2013-2014 academic year. The successful applicant will have a research profile with a concentration in computational or applied mathematics. Applicants should apply online at www.mathjobs.org – Position ID: APACM #3874. Applications received by **December 15, 2012** will receive first consideration. For more information about this position, please visit our website: <http://www.math.dartmouth.edu/activities/recruiting/>. Dartmouth is committed to diversity and encourages applications from women and minorities.

DARTMOUTH COLLEGE—The Department of Mathematics anticipates a senior opening with initial appointment in the 2013-2014 academic year. The successful applicant will have a research profile with a concentration in computational or applied mathematics, will be appointed at the level of Full Professor and is expected to have an overall record of achievement and leadership consonant with such an appointment. Applicants should apply online at www.mathjobs.org – Position ID: PACM #3873. Applications received by **December 15, 2012** will receive first consideration. For more information about this position, please visit our website: <http://www.math.dartmouth.edu/activities/recruiting/>. Dartmouth is committed to diversity and encourages applications from women and minorities.

DARTMOUTH COLLEGE—The Department of Mathematics anticipates a tenure-track opening with initial appointment in the 2013-2014 academic year, for a mathematician working in either topology or number theory. The appointment is for candidates at any rank. Applicants should apply online at www.mathjobs.org – Position ID: TTPTNT #3875. Applications received by **December 15, 2012** will receive first consideration. For more information about this position, please visit our website: <http://www.math.dartmouth.edu/activities/recruiting/>. Dartmouth is committed to diversity and encourages applications from women and minorities.

EMORY UNIVERSITY—The Department of Mathematics and Computer Science at Emory University invites applications for a position as Lecturer in Mathematics, to begin Fall 2013. Initial appointment is for a period of three years with renewals and promotions possible within the lecture-track as detailed in the Emory College of Arts and Sciences Guidelines for Appointment of Lecture-Track Faculty. <http://college.emory.edu/home/administration/policy/lecturer.html> Responsibilities include: 1. teaching five semester courses per year; 2. supporting administration of the undergraduate program to include: advising undergraduates; coordinating the 100-level courses taught by graduate students; and, the development of graduate students as teachers; 3. participating in the life of the college through committees and other forms of academic service. Candidates must have a Ph.D. in mathematics or a related field, demonstrated excellence in teaching, skills for interacting effectively with students, and the potential to administer our undergraduate programs. Application materials, including curriculum vitae, a statement of career goals and teaching philosophy, evidence of teaching excellence, and a minimum of three reference letters should be submitted through <http://www.mathjobs.org>. Review of applications will begin on **December 10, 2012**. For information about the department see <http://www.mathcs.emory.edu>. Electronic inquiries about the position should be addressed to mlsearch2013@mathcs.emory.edu. Emory University is an Affirmative Action/Equal Opportunity Employer. The department greatly encourages applications from women and members of underrepresented minority groups.

GEORGIA TECH—The School of Mathematics at Georgia Tech is accepting applications for faculty positions at all ranks and in all areas of Pure and Applied Mathematics and Statistics. Applications by highly qualified candidates, and especially those from groups underrepresented in the mathematical sciences, are particularly encouraged. See www.math.gatech.edu/resources/employment for more details and application instructions.

INSTITUTE FOR DEFENSE ANALYSES—The Institute for Defense Analyses Center for Communications Research - Princeton (IDA/CCR-P) is looking for individuals in mathematics, computer science, electrical engineering, and related fields to join in exciting research that enhances our nation's security along with our sponsor, the National Security Agency. Individuals that thrive here enjoy solving difficult problems with a wide range of tools, from mathematics, statistics, computational science, and engineering.

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Rather than recruiting specific specialties, we are looking for smart PhDs who are willing to learn whatever it takes to solve our ever evolving research problems. Some problems require very deep and sophisticated mathematics, others the latest computational and other technologies, and many problems require both. Ours is a superior professional working environment emphasizing cooperative effort. We are located in Princeton, NJ and benefit from the exciting intellectual environment of our immediate area, as well as the benefits of being close to both New York and Philadelphia. U.S. citizenship and a Department of Defense TS//SI clearance (with polygraph) are required. IDA/CCR-P will sponsor this clearance for those selected. The Institute for Defense Analyses is proud to be an equal opportunity employer. Interested individuals should contact Dr. David J. Saltman (Director) at saltman@idaccr.org with a C.V. and a list of references.

JOHNS HOPKINS UNIVERSITY—J. J. SYLVESTER ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS—Subject to availability of resources and administrative approval, the Department of Mathematics invites applications for non-tenure-track two-year Assistant Professor positions beginning July 1, 2013. The J.J. Sylvester Assistant Professorship is a position offered to recent Ph.D.'s with outstanding research potential. Candidates in all areas of pure mathematics are encouraged to apply. The teaching load is three courses per academic year. **To submit your application, go to www.mathjobs.org/jobs/jhu.** Submit the AMS cover sheet, your curriculum vitae, and research and teaching statements, and ensure that at least four letters of recommendation, one of which addresses teaching, are submitted by the reference writers. If you are unable to apply online, you may send application materials to: Appointments Committee, Department of Mathematics, Johns Hopkins University, 404 Krieger Hall, Baltimore, MD 21218. If you have questions concerning this position, please write to cpoole@jhu.edu. Preference will be given to applications received by **December 1, 2012**. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minorities and women candidates are encouraged to apply.

JOHNS HOPKINS UNIVERSITY—TENURE-TRACK ASSISTANT PROFESSOR, DEPARTMENT OF MATHEMATICS—The Department of Mathematics invites applications for two positions at the tenure-track Assistant Professor level beginning July 1, 2013. A Ph.D. degree or its equivalent and demonstrated promise in research and commitment to teaching are required. Candidates in all areas of pure mathematics are encouraged to apply. **To submit your application, go to www.mathjobs.org/jobs/jhu.** Submit the AMS cover sheet, your curriculum vitae, list of publications, and research and teaching statements, and ensure that at least four letters of recommendation, one of which addresses teaching, are submitted by the reference writers. If you are unable to apply online or do not wish to do so, you may send application materials to: Appointments Committee, Department of Mathematics, Johns Hopkins University, 404 Krieger Hall, Baltimore, MD 21218. If you have questions concerning this position, please write to cpoole@jhu.edu. Preference will be given to applications received by October 15, 2012. The Johns Hopkins University is an Affirmative Action/Equal Opportunity Employer. Minorities and women candidates are encouraged to apply.

KANSAS STATE UNIVERSITY—Department of Mathematics—Applications are invited for a tenure-track Assistant Professor position to commence August 4, 2013, with salary commensurate with qualifications. A Ph.D. in mathematics is required and preference will be given to candidates with some postdoctoral experience. The department seeks candidates whose research interests are in mathematics and its applications. The successful candidate should have strong research credentials as well as strong accomplishment or promise in teaching, should demonstrate a strong commitment to mentoring students, and should value working with colleagues and students from diverse backgrounds. Applicants must submit the following: a letter of application, curriculum vita, outline of teaching philosophy, a statement of research objectives, and four letters of reference, at least one of which addresses the applicant's teaching ability and potential. All application materials must be submitted electronically via <http://www.mathjobs.org>. Screening begins **November 1, 2012**, and continues until the position is closed. Kansas State University is an equal opportunity employer and actively seeks diversity among its employees and encourages applications from women and minorities. A background check is required.

KANSAS STATE UNIVERSITY—Department of Mathematics—Applications are invited for Visiting Assistant Professorships commencing August 4, 2013. These will be term appointments with the possibility of re-appointments depending on performance, funding, and need of services. A Ph.D. in mathematics or a Ph.D. dissertation completed by 12.20.13 is required. The Department seeks candidates whose research interests mesh well with current faculty. The Department has research groups in algebra, analysis, differential equations, geometry/topology, and number theory. Successful candidates are expected to participate in the Department's programs during summer programs. The successful candidate should have strong research credentials as well as strong accomplishments or promise in teaching, and should value working with colleagues and students from diverse backgrounds. Applicants must submit the following: A letter of application, curriculum vita, outline of teaching philosophy, a statement of research objectives, and four letters of reference, at least one of which addresses the applicant's teaching ability or potential. All application materials must be submitted electronically via <http://www.mathjobs.org>. Screening of applications begins **November 1, 2012**, and continues until positions are closed. Kansas State University is an equal opportunity employer and actively seeks diversity among its employees and encourages applications from women and minorities. A background check is required.

KANSAS STATE UNIVERSITY—Visiting Assistant Professor—Subject to budgetary approval, applications are invited for a visiting assistant professorship commencing August 4, 2013. These will be term appointments with the possibility of two subsequent appointments depending on performance, funding, and need of services. Incumbent will be a Fellow of the Center for Quantitative Education and will participate in research projects addressing effective teaching in a technological environment, with particular emphasis on Calculus and Mathematics for Elementary School Teachers. The incumbent will teach in the undergraduate program and will also have time to pursue independent research in the department in either mathematics or mathematics education along with these duties. Applicants must have a commitment to excellence in teaching. A Ph.D. in mathematics or a Ph.D. dissertation completed by 12.20.13 is required. Preference will be given to applications with background in mathematics and/or teaching with technology, as well as applicants whose research interests mesh well with current department faculty. Letter of application, current vita, minimum three letters of reference, at least one of which addresses the applicant's teaching ability, and a statement of teaching philosophy must be submitted online through mathjobs.org. Screening of applications begins **November 1, 2012**, and continues until the position is closed. The candidate must value working with colleagues and students with diverse backgrounds. Kansas State University is an equal opportunity employer and actively seeks diversity among its employees and encourages applications from women and minorities. A background check is required. For additional information about this search, please email inquiry to bennett@math.ksu.edu and reference the Q-Center position.

LOYOLA MARYMOUNT UNIVERSITY—The Mathematics Department of Loyola Marymount University will have two tenure-track openings at the assistant professor level for the academic year 2013-2014. Responsibilities include teaching, advising, maintaining an active program of scholarship, and engaging in university service. Applicants are expected to have completed a Ph.D. or comparable terminal degree in mathematics, statistics, mathematics education, or a related field by Fall 2013. The department is hiring in the areas of (i) mathematics education, statistics education, or K-12 teacher preparation, and (ii) computational mathematics or numerical analysis. The University and the Mathematics Department have a strong commitment to cultural and ethnic diversity within the faculty and student body. Applicants who have experience or interest in this area are asked to highlight it in their application. The Mathematics Department, housed within Loyola Marymount University's College of Science and Engineering, is a community

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of 17 full-time faculty members and approximately 45 mathematics majors, 25 minors, and a few Master of Arts in Teaching students. The department offers Bachelor of Science degrees in pure mathematics, applied mathematics and a Bachelor of Arts designed for students who wish to pursue a career in mathematics education. A degree in bio-mathematics is currently part of an individualized studies program. Faculty in the department work in many areas of mathematics 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 about the LMU Mathematics Department is available online at <http://cse.lmu.edu/departments/math.htm>. Salary and other benefits are competitive and commensurate with background and experience. Housing assistance and domestic partner benefits are available. Loyola Marymount, founded in 1911, is a comprehensive university in the mainstream of American Catholic higher education. Located on the west side of Los Angeles overlooking the Pacific, LMU is one of the nation's 28 Jesuit colleges and universities and five Marymount institutions. It serves 5400 undergraduates and over 2500 graduate students in the Colleges/Schools of Liberal Arts, Science and Engineering, Business Administration, Communication and Fine Arts, Film and Television, Education, and Law. Loyola Marymount 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, 2012**. Applicants who will be attending the 2013 Joint Mathematics Meetings in January should indicate this in their letter of interest. Apply online at www.mathjobs.org/jobs. Please address questions to Suzanne Larson, Chair at slarson@lmu.edu or (310) 338-5111.

MACALESTER COLLEGE—Tenure stream, open rank—Candidates should have a Ph.D. in mathematics or applied mathematics and research interests in which computation plays a significant role. Examples of desired areas include (but are not limited to) computational applied mathematics, computational statistics, data visualization, computational topology, and computational geometry. Full ad at: [mathjobs.org](http://www.mathjobs.org) & <http://www.macalester.edu/provost/positions/> Contact: Karen Saxe (saxe@macalester.edu) & Chad Topaz (ctopaz@macalester.edu).

MASSACHUSETTS INSTITUTE OF TECHNOLOGY—DEPARTMENT OF MATHEMATICS—The Mathematics Department at MIT is seeking to fill positions in **Pure and Applied Mathematics**, and **Statistics** at the level of Instructor, Assistant Professor or higher beginning September 2013. The Department also seeks candidates for the Schramm Postdoctoral Fellowship. Appointments are based primarily on exceptional research qualifications. Appointees will be expected to fulfill teaching duties and to pursue their own research program. PhD required by employment start date. For more information and to apply, please visit www.mathjobs.org. To receive full consideration, submit applications by **December 1, 2012**. MIT is an Equal Opportunity, Affirmative Action Employer.

NEW MEXICO STATE UNIVERSITY—Tenure-track Assistant Professors—The Department of Mathematical Sciences (www.math.nmsu.edu/) invites applications for tenure-track positions, one in the area of Applied Analysis (<http://www.nmsu.edu/~personel/postings/faculty/13112857.html>) and a second to support our Professional Master's Program in Financial Mathematics with research in a related area (<http://www.nmsu.edu/~personel/postings/faculty/13142357.html>), beginning Fall, 2013. Qualifications include a Ph.D. in Mathematics or a related area, demonstrated excellence in teaching, and outstanding research potential. Applicants must include a cover letter specifying which position is being sought, an AMS cover sheet, a curriculum vitae including a list of publications, and at least three letters of recommendation, one of which should support the applicant's effectiveness as a teacher. Please submit all application materials online at <http://www.mathjobs.org>. Email enquiries should be addressed to mathsearch@math.nmsu.edu. NMSU is an equal opportunity/affirmative action employer and encourages applications from women and minorities. (Reqs #2012001599, #2012001600).

POMONA COLLEGE—Tenure-track position in Applied Mathematics at the Assistant Professor level. Submit applications to MathJobs.org or Search Committee, Mathematics Department, 610 N. College Ave., Claremont, CA 91711. Application includes: letter, curriculum vitae, graduate transcripts, at least three letters of recommendation (at least one evaluating teaching), a description, for the non-specialist, of research accomplishments and plans, and a statement of teaching philosophy. We will fully consider applications completed by **December 1, 2012**. Pomona College is an equal opportunity employer and is particularly interested in candidates who have experience working with students from diverse backgrounds and a demonstrated commitment to improving access to and success in higher education for underrepresented groups

TEXAS TECH UNIVERSITY—The Department of Mathematics and Statistics at Texas Tech University (M&S) invites applications for three tenure-track assistant professor positions beginning fall 2013. A Ph.D. degree at the time of appointment is required. M&S has active research groups in both pure and applied mathematics (see <http://www.math.ttu.edu/FacultyStaff/research.shtml>). The department fosters a spirit of interdisciplinary collaboration across areas of mathematics as well as with engineering and the physical and biological sciences. M&S is seeking candidates who will be engaged in nationally visible scholarship, establish externally-funded research programs, interact with the existing research groups in the department, involve graduate students in their research, and show excellence in teaching at the undergraduate and graduate levels. It is anticipated that one of the positions will be in statistics, one in numerical analysis, and one in another area compatible with the department's existing research programs. Candidates with very strong records who will bring externally sponsored research to Texas Tech will be considered for associate or full professor ranks. Please apply for position numbers T96800 for Statistics, T96232 for Numerical Analysis, and T96376 for all other areas, at <http://jobs.texasstate.edu>. Include a completed AMS standard cover sheet and a vita. Three letters of reference plus any material in addition to that completed online should be sent to: Alex Wang, Hiring Committee Chair, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX 79409-1042. Review of applications will begin immediately. Texas Tech University is committed to diversity among its faculty. We strongly encourage applications from women, minorities, persons with disabilities, and veterans, and we consider the needs of dual career couples. Texas Tech University is an Affirmative Action/Equal Opportunity Employer.

UNIVERSITY OF CONNECTICUT—Stuart and Joan Sidney Professorship of Mathematics. The Department of Mathematics at the University of Connecticut seeks a distinguished senior mathematician to hold the Stuart and Joan Sidney Professorship of Mathematics to start in Fall 2013. This is a tenured position at the Professor level. Highly qualified candidates in all mathematical disciplines are encouraged to apply. Minimum Qualifications: A Ph.D. in Mathematics or a related area and an exceptional record of published research in high-quality mathematical journals. Preferred Qualifications: An internationally recognized research program with international stature, a commitment to effective teaching at the undergraduate and graduate levels, a strong record of mentoring Ph.D. students, and demonstrated ability to attract external funding. Review of applications will begin on **December 1, 2012**, and continue until the position is filled. Questions or requests for further information should be sent to the Hiring Committee at sjshiring@math.uconn.edu. Apply online at <http://www.mathjobs.org/jobs>. The University of Connecticut is an Equal Opportunity and Affirmative Action Employer. We enthusiastically encourage applications from underrepresented groups, including minorities, women, and people with disabilities.

UNIVERSITY OF CONNECTICUT—Department of Mathematics—Avery Point Regional Campus—Assistant Professor—The Department of Mathematics at the University of Connecticut seeks to hire a tenure track Assistant Professor at the Avery Point regional campus. Located on the shore of Long Island Sound, UConn Avery Point serves

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as the University's campus by the sea. The campus hosts the extensive research and graduate/undergraduate teaching programs of its outstanding marine science department. The successful candidate will be expected to teach mathematics courses at all levels and to develop a vigorous externally-funded research program, preferably while working in collaboration with appropriate marine science and mathematics colleagues at the Avery Point and Storrs campuses. **Minimum Qualifications** include: A Ph.D. or an equivalent foreign degree, in mathematics or a closely related area, completed by August 22, 2013; demonstrated evidence of excellent teaching; outstanding research experience and potential in the numerical solution of partial differential equations and optimization or data assimilation problems. **Preferred Qualifications** include: Candidates with interests in the areas of mathematical modeling in meteorology, oceanography, fluid dynamics, and marine ecology will be preferred. The review of applications will begin **December 1, 2012** and continue until the position is filled. Questions or requests for further information should be sent to the Hiring Committee at averypointhiring@math.uconn.edu. Apply online at <http://www.mathjobs.org/jobs>. The University of Connecticut is an Equal Opportunity and Affirmative Action Employer. We enthusiastically encourage applications from underrepresented groups, including minorities, women, and people with disabilities.

UNIVERSITY OF CONNECTICUT—Department of Mathematics—Assistant Professor, Tenure Track—The department has several positions, starting in the Fall 2013 with priority on logic, analysis, stochastic processes preferably with financial mathematics, numerical solutions of PDE's and optimization. See <http://www.mathjobs.org/jobs> to retrieve information and to apply online. For questions or requests regarding additional information please email the Hiring Committee at mathhiring@uconn.edu.

UNIVERSITY OF CONNECTICUT—Department of Mathematics—Professor, Tenured—The department invites a distinguished senior mathematician to apply for the Stuart and Joan Sidney Professorship of Mathematics, starting in the Fall 2013. All mathematical disciplines are encouraged to apply. See <http://www.mathjobs.org/jobs> to retrieve information and to apply online. For questions or requests to additional information please email the Hiring Committee of the Department of Mathematics at sjshiring@math.uconn.edu.

UNIVERSITY OF NEBRASKA-LINCOLN—Department of Mathematics—The UNL Department of Mathematics invites applications for the following positions: 1) One open rank (Assistant, Associate, or Full Professor) tenure-track position with emphasis in **Mathematics Education**. 2) One tenure-track Assistant Professor position in **Scientific Computing/Computational Mathematics**. Both positions begin August 2013. Review of applications will begin November 30, 2012 and continue until a suitable candidate is found. For more information about these positions and information on how to apply for them please go to: <http://www.math.unl.edu/department/jobs/>. The University of Nebraska has an active National Science Foundation ADVANCE gender equity program, and is committed to a pluralistic campus community through affirmative action, equal opportunity, work-life balance, and dual careers.

UNIVERSITY OF OREGON—Visiting Assistant Professor (non-tenure related)—The University of Oregon department of mathematics seeks applicants for a post-doctoral Visiting Assistant Professor. This is a full-time three-year position and is not tenure-related. Minimum qualifications for this postdoctoral position are a PhD in mathematics, statistics, or closely related field, strong evidence of research potential in an area of active interest in the department, and evidence of teaching ability. Please see <http://hr.uoregon.edu/jobs/> for a full position announcement. Applicants should provide a standard AMS cover page, CV, research statement, and three letters of recommendation and apply online at mathjobs.org. First consideration will be given to applications received by **January 31, 2013**. The position will remain open until filled. Candidates should have the ability to work effectively with a diverse community. The University of Oregon is an EO/AA/ADA institution committed to cultural diversity.

UNIVERSITY OF OREGON—The University of Oregon department of mathematics seeks applicants for full-time tenure-related positions at the rank of Assistant Professor, in any area of pure or applied mathematics. Minimum qualifications are a PhD in mathematics or closely related field. An outstanding research record, and active participation and excellence in teaching at the undergraduate and graduate levels will be the most important criteria for selection. Please see <http://hr.uoregon.edu/jobs/> for a full position announcement. Applicants should provide a standard AMS cover page, CV, research statement, three letters of recommendation, and apply online at mathjobs.org. Deadline for applications: **December 15, 2012**. Candidates should have the ability to work effectively with a diverse community. The University of Oregon is an EO/AA/ADA institution committed to cultural diversity.

UNIVERSITY OF OREGON—The University of Oregon Department of Mathematics seeks applicants for a full-time instructor of mathematics. Minimum qualifications are a Masters degree in mathematics or closely related field, evidence of outstanding teaching ability at the undergraduate level, ability to administer a WebWork installation and to function as departmental webmaster. For a full position description, please see <http://hr.uoregon.edu/jobs/>. Applicants will please provide a cover letter, CV, a description of relevant experience, and three letters of recommendation to be submitted electronically at MathJobs.org. First consideration will be given to applications received by **February 20, 2013**. Candidates should have the ability to work effectively with a diverse community. The University of Oregon is an EO/AA/ADA institution committed to cultural diversity.

UNIVERSITY OF OREGON—The University of Oregon Department of Mathematics seeks applicants for a full-time mathematics instructor. Minimum qualifications are a Masters degree in mathematics or closely related field and evidence of outstanding teaching ability at the undergraduate level. Experience teaching mathematics for elementary education majors and general education mathematics is desirable. For a full position description, please see <http://hr.uoregon.edu/jobs/>. Applicants will please provide a cover letter, CV, a description of relevant experience, and three letters of recommendation to be submitted electronically at MathJobs.org. First consideration will be given to applications received by **February 20, 2013**. Candidates should have the ability to work effectively with a diverse community. The University of Oregon is an EO/AA/ADA institution committed to cultural diversity.

UNIVERSITY OF PENNSYLVANIA—School of Arts and Sciences—The School of Arts and Sciences at the University of Pennsylvania invites applications for a tenure-track assistant professor appointment in evolution, broadly interpreted. We are interested in exceptional scientists and mathematicians who have well-developed research programs employing mathematical or computational techniques to study the evolution of dynamical processes far from equilibrium in the context of any of the following: biology, chemistry, or materials from the molecular to the systems scale, language, geology, psychology, or the environment. The successful candidate's primary appointment will be in a single department in the natural sciences: Biology, Chemistry, Earth and Environmental Science, Linguistics, Mathematics, Physics and Astronomy, or Psychology. Secondary appointments in other departments can be arranged, as appropriate. This appointment will be the first in a cluster of appointments across the natural sciences in various aspects of evolution; the successful candidate should therefore have a strong interest in building such a program and in interacting with researchers from other disciplines whose research lies within the overarching theme of evolution. The successful candidate will teach courses in his or her home department and will participate in the development of curriculum pertinent to the theme of the cluster. Applications should be submitted on-line at <https://facultysearches.provost.upenn.edu/applicants/Central?quickFind=51089> and include a curriculum vitae, a research statement that includes the candidate's perspective on how she or he fits into one of the core

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departments, links to no more than three journal publications, and the contact information for three individuals who will be contacted by the University with instructions on how to submit a letter of recommendation. Review of applications will begin 16 November 2012 and will continue until the position is filled. The University of Pennsylvania is an affirmative action/equal opportunity employer and is strongly committed to establishing a diverse faculty: <http://www.upenn.edu/almanac/volumes/v58/n02/diversityplan.html>

UNIVERSITY OF PENNSYLVANIA—Nontenure-Track Junior Positions—Lecturer—At least one position will be available beginning July 1, 2013. Candidates should have a strong research program and will participate in the Department's undergraduate and graduate teaching mission. 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 affirmative action/equal opportunity employer and is strongly committed to establishing a diverse faculty: <http://www.upenn.edu/almanac/volumes/v58/n02/diversityplan.html>.

UNIVERSITY OF TEXAS AT SAN ANTONIO—Assistant Professor—The University of Texas at San Antonio (UTSA) invites applications for one tenure track position at the rank of Assistant Professor in Mathematics starting in Fall 2013. The successful candidate will be expected to have Ph.D. degree in Mathematics by the time of appointment, strong research record, and demonstrated evidence of excellent teaching ability. Information on the Mathematics program, the full version of this job announcement, and details on what to include in an application can be viewed at <http://math.utsa.edu>. This position is pending budget approval. Applicants who are selected for interviews must be able to show proof that they will be eligible and qualified to work in the United States by time of hire. UTSA is an Affirmative Action/Equal Employment Opportunity Employer.

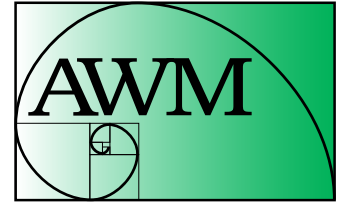
UNIVERSITY OF VIRGINIA—The Department of Mathematics at the University of Virginia, Charlottesville, VA, invites applications for two full time positions, either tenure-track or tenured open rank, to begin in the Fall semester of 2013. Applicants must present evidence of outstanding accomplishments and promise in both research and teaching. Candidates whose research interests complement the strengths of the department's current faculty are encouraged to apply, with priority given to applicants in algebra and algebraic geometry for one position and analysis for the other. Applicants are required to have a Ph.D. by the time of appointment. Information about the department may be found at <http://artsandsciences.virginia.edu/mathematics/index.html>. Review of applications will begin on **November 15, 2012**; however, the positions will remain open until filled. To apply, please submit the following required documents electronically through www.MathJobs.org: A cover letter, an AMS Standard Cover Sheet, a curriculum vitae, a publication list, a description of research, and a statement about teaching interests and experience. The applicant must also have at least four letters of recommendation submitted, of which one must support the applicant's effectiveness as a teacher. In addition, all candidates are required to complete a Candidate Profile through the University of Virginia's employment system, which is Jobs@UVA (<https://jobs.virginia.edu>). Search for posting number 0610625 and follow the directions for applying to this posting to submit CV with a publication list, statement of research interest, and statement of teaching philosophy. Questions regarding the application process for Jobs@UVA should be directed to: zk4g@virginia.edu For additional information about the position contact: mathematics-hiring@Virginia.EDU The University will perform background checks on all new faculty hires prior to making a final offer of employment. The University of Virginia is an equal opportunity/affirmative action employer. Women, minorities, veterans and persons with disabilities are encouraged to apply.

UNIVERSITY OF VIRGINIA—The Department of Mathematics at the University of Virginia invites applications for a Whyburn Instructorship in commutative algebra beginning August 25, 2013. This position carries a three-year appointment. Preference will be given to candidates who have received their Ph.D. within the last three years. Candidates must have a Ph.D. by the time of appointment, an outstanding research record, and demonstrated teaching success. Information about the department may be found at <http://artsandsciences.virginia.edu/mathematics/index.html>. Review of applications will begin on **November 15, 2012**; however, the position will remain open until filled. To apply, submit the following required documents electronically through <http://www.MathJobs.org>: A cover letter, an AMS Standard Cover Sheet, a curriculum vitae, a publication list, a description of research, and a statement about teaching interests and experience. The applicant must also have four letters of recommendation submitted, of which one must support the applicant's effectiveness as a teacher. In addition, all candidates are required to complete a Candidate Profile through the University of Virginia's employment system, which is Jobs@UVA (<https://jobs.virginia.edu>). Search for posting number 0610670 and follow the directions for applying to this posting to submit CV with a publication list, statement of research interest, and statement of teaching philosophy. Questions regarding the application process for Jobs@UVA should be directed to: zk4g@virginia.edu. For additional information about the position contact: huneke@Virginia.EDU. The University will perform background checks on all new faculty hires prior to making a final offer of employment. The University of Virginia is an equal opportunity/affirmative action employer. Women, minorities, veterans and persons with disabilities are encouraged to apply.

WASHINGTON UNIVERSITY IN ST. LOUIS—Department: Mathematics—Employer Type: Academic—Type of Position: Tenure-Track Faculty—Subject Area: Mathematics—Geographic Location: Missouri—Application Deadline: None—Contact Person: David Wright Chair - Address: Department of Mathematics, Washington University, One Brookings Drive, Campus Box 1146, St. Louis, MO. 63130 -E-mail Address: wright@math.wustl.edu. The Mathematics Department of Washington University in St. Louis, MO, is announcing three openings for tenure track Assistant Professors in pure mathematics, to begin August 2013. Responsibilities include teaching three one semester courses per year, maintaining a strong research program, publishing the results of the research, and customary student advising and departmental and university service. Mathematicians in all areas will be considered. We expect to fill two of the positions with candidates in the field of Analysis; the other position can be filled by a mathematician in any area. A Ph.D. in mathematics is required. Applicants should provide their CV, publication list, research and teaching statements, and arrange for four letters of recommendation to be submitted. At least one of the letters should report on the applicant's teaching abilities. Applicants are encouraged to submit this material using the AMS mathjobs website (www.mathjobs.org/jobs), the position ID is WashingtonUniv-AP [#3863]; however it may be sent directly to the Chair, Department of Mathematics. The department will begin reviewing applications on **November 1, 2012**, and continue until the positions are filled. Washington University is an affirmative action/equal opportunity employer and specifically invites and encourages women and minorities to apply. Employment eligibility verification required on hire. For more information about the position or the department, visit wumath.wustl.edu.

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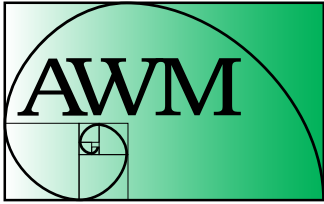
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Volume 42, Number 6, November–December 2012

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