AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

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President's Report

AWM Members:

I am pleased to announce that a new student chapter of AWM has been formed at Emory University.

Another piece of good news: Our proposal to the Office of Naval Research for support of AWM workshops for graduate students and recent Ph.D.'s has been renewed. These workshops are held at the Joint Mathematics Meetings and (usually) at the Society for Industrial and Applied Mathematics annual meetings.

This year, rather than holding its annual meeting, SIAM will meet in conjunction with the International Council for Industrial and Applied Mathematics in Zurich. The AWM workshops will be held at the SIAM Conference on Applications of Dynamical Systems in Snowbird, Utah. Lai-Sang Young will give the Kovalevsky lecture. (A parenthetical note: I overlapped with Lai-Sang in graduate school at Berkeley. This makes it particularly exciting for me that Lai-Sang and her work have been honored in this way.)

Ruth Michler, a Berkeley graduate of a later generation, had her life and very promising and active career in mathematics cut short by a tragic accident. A prize in her memory was made possible by the thoughtfulness and generosity of her parents. The Michler Prize will be awarded annually to a woman who was recently promoted to associate professor or an equivalent position in the mathematical sciences. The recipient will have a semester's leave at the Cornell University mathematics department without teaching duties. The prize is administered jointly by AWM and Cornell.

Barbara Keyfitz and Carolyn Gordon have been instrumental in coordinating the AWM side of the communication between Cornell University and AWM in connection with this prize. Barbara has noted the uniqueness of the Michler prize:

> The pent-up demand for such an opportunity is very clear, and we are already starting to suggest that other universities might want to take the lead from

IN THIS ISSUE

5 AWM Essay Contest
9 Michler Memorial Prize
11 Awards at the JMM
19 Education Column
22 Book Review

AWM
ASSOCIATION FOR WOMEN IN MATHEMATICS

The purpose of the Association for Women in Mathematics is

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

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

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

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Cornell and consider instituting such awards for mid-career women. This is a pioneering initiative, and there is no way that people will not notice—I think attention will continue to build, both nationally and internationally. (Someone asked me just the other day if European women could apply.)

The answer to the last question is yes—there is no restriction on nationality. (See the AWM Web site for other details.)

There were several excellent applications for the prize. Rebecca Goldin is the first recipient; see page 9 for further information. Congratulations, Professor Goldin! Thanks to the selection committee and to all those who helped the prize come into being.

At the American Association for the Advancement of Science meeting this year, Barbara Keyfitz drew my attention to the fact that the two mathematics sessions organized by women were organized by self-employed women (Stephanie Singer and me). Is this just a curious fact, or is it the beginning of a trend? Perhaps it occurred because of the multidisciplinary focus of this year's conference.

Singer's session "Are We a Democracy? Vote Counting in the United States" discussed a range of current problems related to vote counting. My session "How Should Elementary Mathematics Be Taught?" focused on mathematics as expressed in textbooks and curricula rather than on teaching methods.

After my session, I went to "Miscommunications, Misunderstandings, and Mistakes: Gender, Science, and the Press," a session which also included speakers from several disciplines. I managed to hear most of the first talk, "Getting Gender Reported," given by Abbe Herzig. (Her article in the November–December 2006 AWM *Newsletter* discusses topics related to her talk.) The second talk, given by Kathryn Kibler-Campbell (a sociolinguist), made the interesting point that a person may have contradictory beliefs; in particular, a person may hold contradictory beliefs about gender. For example, a person may have beliefs about female engineers that contradict his knowledge about a particular female engineer acquaintance.

In my mind, the category of contradictory beliefs about gender sits next to that of beliefs unsupported by available scientific evidence. (At least, that's where I believe they sit.) My current favorite in the latter category is "Women use 20,000 words per day, while men use 7,000." It was widely cited in 2006 (do a search in Google news archives to see some of the headlines). Its lack of evidence has been extensively discussed by linguists on the Web (see, for example, Language Log), but rarely surfaces in news media. One reason for this lack of evidence: Daily word use is difficult to study (think of the problems entailed in

recording and counting one person's word use for an entire day). However, there are studies of conversations, and these suggest that there is little gender difference in number of words used or that men talk slightly more than women.

Given the lack of accurate reporting on gender differences (or their absence) in daily word use, it seems rather discouraging to think about media reports on gender with respect to a more complicated subject—mathematics. At the National Council of Teachers of Mathematics conference in March, I began my talk on the situation of women and girls in mathematics with the "finding" about word use. The audience for my talk was far from being a random sample. Still, I was cheered to see a range of opinions about the presence of women in mathematics rather than the uniform one ("women are scarce, perhaps for inevitable biological reasons") that has been so often suggested by newspaper headlines such as "Is There a Math Gene?"

Such headlines occurred in connection with the Benbow and Stanley talent search finding of 1980 and surfaced again in connection with the Summers remarks of 2005. For details about the talent search findings, see the background statement for the AWM petition regarding the unsuitability of Dr. Benbow's presence on the National Mathematics Advisory Panel.

At the NCTM conference, Dr. Benbow spoke in a session about the Panel. She gave an overview of the impetus for the American Competitiveness Initiative (of which the Panel is a part), characterizing it as a convergence of various international and national reports: results from the Trends in International Mathematics and Science Study (TIMSS), the Programme for International Student Assessment (PISA), the National Assessment of Educational Progress (NAEP), and the National Academy of Sciences report *Rising Above the Gathering Storm* (which has the rather suggestive acronym RAGS). These paint a dismal picture of U.S. students' performance in mathematics. She described the members of the Math Panel as "experts in mathematics, mathematics education and … interested others" and announced new members: Douglas Clements (a mathematics education researcher who studies the learning of young children), Bert Fristedt (a mathematician), and Susan Embretson (a psychologist).

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Friend: $1000 — Benefactor: $2500
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See the AWM website for details.

Subscriptions and back orders
All members except family members receive a subscription to the newsletter as a privilege of membership. Libraries, women's studies centers, non-mathematics departments, etc., may purchase a subscription for $55/year ($65 foreign). Back orders are $10/issue plus shipping/handling ($5 minimum).

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

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AWM will accept advertisements for the *Newsletter* for positions available, programs in any of the mathematical sciences, professional activities and opportunities of interest to the AWM membership and other appropriate subjects. The Managing Director, in consultation with the President and the Newsletter Editor when necessary, will determine whether a proposed ad is acceptable under these guidelines. *All institutions and programs advertising in the* Newsletter *must be Affirmative Action/Equal Opportunity designated.* Institutional members receive discounts on ads; see the AWM website for details. For non-members, the rate is $100 for a basic four-line ad. Additional lines are $12 each. See the AWM website for *Newsletter* display ad rates.

Newsletter deadlines
Editorial: 24th of January, March, May, July, September, November
Ad: 1st of February, April, June, August, October, December

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

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

AWM DEADLINES

Sonia Kovalevsky High School Mathematics Days: August 4, 2007

AWM Workshop at JMM: August 31, 2007

Alice T. Schafer Prize: October 1, 2007

NSF-AWM Travel Grants: October 1, 2007 and February 1, 2008

AWM Noether Lecturer: October 15, 2007

AWM-SIAM Kovalevsky Prize Lecturer: November 1, 2007

AWM Essay Contest: Biographies of Contemporary Women in Mathematics: November 2, 2007

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Concern about the composition of the Math Panel may, however, be a moot point—at least as regards the consequences of its recommendations. The Math Panel has been billed as an analogue of the Reading Panel (which was composed of reading experts who made recommendations about reading instruction). Funding for the Math Panel recommendations has not yet been approved by Congress, and recent allegations of corruption in distribution of the funds for the Reading Panel recommendations may make funding those of the Math Panel more unlikely.

However, the AWM petition may have contributed to a more accurate and nuanced discussion of mathematics and gender by psychologists. A simple example: the change in talent search ratios (mentioned in the petition background) was mentioned three times in the introduction to W*hy Aren't More Women in Science?*, a new volume of essays published by the American Psychological Association. (In connection with discussion surrounding the petition, I contributed a reference for this change to one of the essay authors, but I do not know how the authors of the introduction came to be aware of it.) This finding was absent from the 2004 book *Gender Differences in Mathematics,* also composed of chapters from psychologists.

The APA volume also discusses more complex issues related to criticisms of the Benbow–Stanley work—e.g., "what does the SAT measure?" The latter is relevant to interpretations of the talent search findings and of SAT scores in general. It will be interesting to see if and how such discussions filter into reviews, into policy, and into society in general.

Cathy Kessel
Berkeley, CA
March 27, 2007

AWM Essay Contest

Congratulations to all the winners of the 2006 AWM Essay Contest: Biographies of Contemporary Women in Mathematics! And big thanks to Sandia National Labs for sponsoring the contest and to Victoria Howle, Sandia, who organized it. The contest is intended to increase awareness of women's ongoing contributions to the mathematical sciences by inviting students from sixth-graders through college seniors to write biographies of contemporary women mathematicians and statisticians in academic, industrial, and government careers.

The Grand Prize was shared by **Annie Davis**, Solomon Schechter Day School of Greater Boston, Newton, MA for "Margo Levine, Mathematician" and **Stephanie Higgins**, Bates College, Lewiston, ME for "Dr. Bonnie Shulman: A Different Kind of Story." Davis won First Place in Grades 6–8, while Higgins won First Place at the college level. Other winners were: Honorable Mention, College, **Miranda Fix**, Carleton College, Northfield, MN for "Lori Chibnik: Applying Statistics to Public Health"; First Place, Grades 9–12, **Margarite Bechis**, Mount Saint Joseph Academy, Flourtown, PA, for "Splendor of the Heavens: Dr. Knapp's Astronomical Odyssey"; and Honorable Mention, Grades 6–8, **Kristin Ronzi**, Hathaway Brown School, Shaker Heights, OH, for "Burrowing into Numbers: An Interview with Dr. Caroline Borrow."

Margo Levine, Mathematician

Annie Davis

Margo Levine never intended to be a mathematician. All through her childhood, she constantly told herself, "I will not go into math." This was simply because her father was a mathematician, and she never planned to imitate him. This is plain irony, for not only did Margo decide to become a mathematician, but also she is clearly following the exact imprints of her father's footsteps.

A descendant of a family from Eastern Europe, Margo grew up in Ames, Iowa. The college town at that time had a population of approximately fifty to sixty thousand, which included about twenty thousand undergraduates of Iowa State University. Her father was a mathematician, as well as a college professor. At the time, he researched theoretical proof-based work; however, he has since changed to mathematical biology.

Margo's father greatly encouraged his two children to pursue a career in the sciences. When Margo was in sixth grade, he tried to teach her the distributive property. Though math had always come so easily to her, Margo began to cry

Call for Nominations: Alice T. Schafer Mathematics Prize

The Executive Committee of the Association for Women in Mathematics calls for nominations for the Alice T. Schafer Mathematics Prize to be awarded to an undergraduate woman for excellence in mathematics. All members of the mathematical community are invited to submit nominations for the Prize. The nominee may be at any level in her undergraduate career, but must be an undergraduate as of October 1, 2007. She must either be a US citizen or have a school address in the US. The Prize will be awarded at the Joint Prize Session at the Joint Mathematics Meetings in San Diego, California, January 2008.

The letter of nomination should include, but is not limited to, an evaluation of the nominee on the following criteria: quality of performance in advanced mathematics courses and special programs, demonstration of real interest in mathematics, ability for independent work in mathematics, and performance in mathematical competitions at the local or national level, if any.

With letter of nomination, please include a copy of transcripts and indicate undergraduate level. Any additional supporting materials (e.g., reports from summer work using math, copies of talks given by members of student chapters, recommendation letters from professors, colleagues, etc.) should be enclosed with the nomination. Send *five* complete copies of nominations for this award to: The Alice T. Schafer Award Selection Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. Nominations must be received by **October 1, 2007**. If you have questions, phone 703-934-0163, e-mail awm@awm-math.org or visit www.awm-math.org. Nominations via e-mail or fax will not be accepted.

at her failure to understand this topic. This was another reason why, as a child, Margo rejected the idea of a career in the mathematical sciences, for she became discouraged with that lesson. However, now she would advise students not to become angered if they have one bad day in math, for other times will be more promising.

When learning at Ames High School, Margo set her mind on becoming a poet. However, she soon disposed of the idea, considering herself too sensitive to face the critics. Therefore, her next wish was to build bridges as an engineer. Indeed, she graduated college with a major in civil engineering. In her junior year, Margo re-examined her reasons for avoiding mathematics. Her math classes were more enjoyable, and she loved the subject. As a result, she received a minor in applied mathematics. Later on, she went to Northwestern University to receive a master's degree in math! Margo hopes to receive a Ph.D. in applied mathematics next June.

Since graduating from college, Margo has published several papers in mathematics journals and has attended many conferences. She is especially excited about having traveled to Haifa, Israel, in order to present a paper there. In addition, Margo also went to France for a mathematical workshop.

Her current research is trying to develop equations on how the minuscule structures, quantum dots, grow. (Quantum dots are on the order of nanometers.) Apart from her impressive research, Margo also teaches.

Her main goal is to teach math at the university level, or at least in a small college. This is different from her original goal, which was not only to be a professor, but to do groundbreaking research like the mathematician she admires, Gauss. How her research develops in the next two years will determine what she may do.

When I asked her whether she likes to teach one-on-one, or in a class, Margo replied, "I find it easier to teach one-on-one, because I'm able to get a sense of how the student learns, and that way I can adjust my method of teaching to suit that particular person." When she works on a problem, she prefers at first to work alone, and later to discuss the problem with one or two other people.

I also inquired whether girls ask questions more frequently than boys. Based on her experience, she believes that neither males nor females seem to ask more often than the other. Margo does notice, however, that students tend to feel more comfortable putting a question to a teacher of their own gender.

And what about Margo's future? Most of all, she wants to find a job! In addition, she hopes to write a paper with her father some day. Margo is extremely satisfied with her choice of career, and there is little chance of her changing her decision. Most people would consider math uncreative—not as imaginative as writing books or painting a masterpiece, that is. But Margo says that math is "absolutely creative!" It involves

Call for Nominations: The 2009 Noether Lecture

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

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

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

solving complicated problems and explaining why structures like the quantum dots she studies behave the way they do. Many people have not excelled as much as she has, so they have not yet gotten into the abstract part of mathematics. Creativity is yet another reason why Margo is pleased with the career that she has chosen.

When Margo informs people she is studying mathematics, they are extremely impressed, not only because she is a woman, but also because a common stereotype of mathematicians is that they have no social skills and are seemingly out of touch with everyone else. While in some rare cases, this could be true, any person who says this about Margo is truly mistaken. She is a very outgoing person who enjoys yoga, running, swimming, cooking, worrying, and reading fiction unrelated to math and science. In addition to these favorite pastimes, Margo loves to visit any kind of museum she can find.

Because I interviewed a professional mathematician, my mind has been greatly opened. Mathematics presents more substantial possibilities than it once did to me, and I am now protected from prejudices against women in math. After all, I've just finished writing about one, haven't I?

About the student:

I am a seventh grade student at Solomon Schechter Day School of Greater Boston. My interests have been in the areas of literature, writing, art, sports, animals, culture, and music. I have not been particularly interested in math until last year, when I had a lot of fun taking the placement test for pre-algebra. My future career might include veterinary medicine, writing, archaeology, or astronomy.

Dr. Bonnie Shulman: A Different Kind of Story

Stephanie Higgins

On her thirtieth birthday, on top of a mountain in northern Colorado, with a nine-year old daughter and an income that could barely supplement food stamps and welfare, Bonnie Shulman decided to go back to school. She thought briefly about studying English and had worked with some of the greatest poets and writers of her generation, yet despite her friend's insistence that she earn "credentials" to help sell her poetry, Shulman suspected a college English education could not compare to her remarkable real-life experiences. Her subsequent decision to return instead to the math she had loved in high school changed her life and the lives of countless women across the country.

As a teenager, Shulman did not take her senior year at Bronx High School of Science as seriously as in her previous years and let her GPA drop. She was successful, but lonely, as one of only two girls taking difficult math classes. She felt that math was inaccessible to women and that science was corrupted by the arms race, so she turned to poetry as an alternative and an escape. In the 1970s, Colorado was to impassioned poets what Hollywood is to aspiring stars today. Shulman and her newborn daughter left all their belongings in New York and hitchhiked cross-country to join Colorado's newly formed Naropa Institute, where Beat Generation poets Allen Ginsberg and Anne Waldman had just founded the Jack Kerouac School of Disembodied Poets. Living on welfare with another single mother, Shulman transcribed journals for Allen Ginsburg and ran poetry-based service visits to schools and prisons. Poor but elated with her new life, Shulman never went back to New York for any of her possessions.

However, as her daughter grew older and their standard of living declined, Shulman wanted a change. No one knew of her fondness for math but an old boyfriend—one night, in the teepee they called home for a year, she had walked past him struggling through his calculus homework and absently corrected it, revealing her mathematical talent. On her thirtieth birthday they climbed a mountain together and discussed her future at the top. It was there that they realized, as she puts it, that "science was the only thing that made sense for me to study." A few months later, in September 1981, Shulman enrolled as a freshman at the University of Colorado at Boulder. She took every undergraduate astronomy class, most of the physics courses and several math classes. As she continued to study, her interest in math sharpened and mathematical models became the focus of her scientific work. She earned an undergraduate degree in mathematics in 1985, funded by scholarships, a Pell Grant, loans, and her work as a tutor, waitress, typist and T.A.

When she could not find a babysitter, Shulman brought her daughter with her to classes. As their standard of living improved and her daughter grew happier and more secure, Shulman was reminded of her own childhood in New York. Her mother, also a single mom, changed careers when Shulman was thirteen, going from a low-paid secretary to a high school teacher. This move enriched both of their lives and sparked Shulman's interest in teaching. As an undergraduate Shulman found tutoring one of the most rewarding parts of her education, but teaching right after earning her undergraduate degree was never an option for her. From her freshman year Shulman knew that she would "go all the way" with science and math, and in 1991 she earned a Ph.D. in mathematical physics after studying mathematical models of solar coronal loops. Finally, at age forty, she felt ready to begin teaching math and science to the next generation of students.

Today, Dr. Shulman works at Bates College in Lewiston, Maine. She chose Bates for its 50–50 policy towards teaching and research; professors at Bates are expected to spend at least half of their time working directly with students, while also pursuing their own research. Dr. Shulman's work in applied mathematics takes many forms, and she teaches classes about all of them. Her interest in mathematical models in biology has led her to create a computer program that uses Leslie Matrices to model the "waggle-dances" that honeybees do when communicating new nest locations. She has developed math-biology modules based on some of her students' projects, including a project based on work by Mallon and Franks applying aspects of probability to ants' searches for nests of perfect area. She studies Karl Menger's work, which has been influential in game theory, his attempts to "mathematize" ethics, and the implications of them in human decision making. She also teaches calculus and advises undergraduate theses.

However, only half of Shulman's research is in applied mathematics. She is also committed to improving accessibility of math and science to women, sharpening teaching methods and examining the content of math itself for what she calls "the footprints of gender." She led the Women and Scientific Literacy project at Bates College and co-founded the Calculus Consortium, a nationwide group of math teachers and professors who work for stronger calculus programs at their universities. Many of Shulman's recent publications delve into the foundations of mathematics from a feminist perspective and suggest ways to improve math literacy and instruction for all students, particularly women.

I had not met Dr. Shulman before our interview, and our conversation left me in awe of her exceptional past, absorbing research, and provocative work. She is likable, charismatic, firm, and articulate; it is equally easy to see her as a mother, a woman with a black belt in Tae Kwon Do, a scientist, and an impassioned advocate for students of mathematics. After learning about her past and the work she has done, I am truly glad she returned to the field and is paving the way for new generations of mathematicians.

About the student:

My name is Stephanie Higgins—I study geology at Bates College in Maine. Although I take math every semester, I will not be able to minor in it because I am on the three-year plan, which saves money but restricts the number of accessory courses I can take. This means that I am technically a junior, although last year was my first year in college. I love math and nearly majored in it—I chose geology because I am excited by the opportunities to apply mathematical models to this relatively new field. I hope to obtain a Ph.D. and do research on climatology.

NSF-CBMS Conferences

The National Science Foundation has funded two NSF-CBMS Regional Research Conferences to be held during 2007. Each five-day conference features a distinguished lecturer who delivers ten lectures on a topic of important current research in one sharply focused area of the mathematical sciences. The lecturer subsequently prepares an expository monograph based upon these lectures.

The 2007 conferences are: "Numerical Methods for Nonlinear Elliptic Equations," Roland Glowinski, lecturer, May 21–25, University of Iowa, http://www.math.uiowa.edu/events/CBMS2007/ and "Finite Morse Index Solutions and Related Topics," E. N. Dancer, lecturer, December 16–20, University of Texas at San Antonio, http://math.utsa.edu/~ahmad/cbms/.

Goldin Wins First Michler Memorial Prize

The Association for Women in Mathematics and Cornell University are pleased to announce that Rebecca Goldin, George Mason University, will receive the first annual Ruth I. Michler Memorial Prize. The Michler Prize is unique—it grants a mid-career woman in academe a residential fellowship in the Cornell University mathematics department without teaching obligations. This pioneering venture was established through a very generous donation from the Michler family and the efforts of many people at AWM and Cornell. The high quality of proposals submitted this first year attests to the need for such opportunities.

Rebecca Goldin

Rebecca Goldin was selected to receive the Michler Prize because of her past achievements and future promise. After earning a bachelor's degree in mathematics with honors from Harvard University, Goldin spent a year in France at the École Normale Supérieure collaborating with Bernard Teissier on toric varieties. She then returned to Cambridge to pursue her doctorate at the Massachusetts Institute of Technology, where she investigated the cohomology ring of weight varieties under the direction of Victor Guillemin. A two and a half year NSF Postdoctoral Fellowship at the University of Maryland was followed by a tenure track appointment to the mathematics department at George Mason University. In 2004, Goldin assumed the role of Director of Research for Statistical Assessment Services, a nonprofit organization affiliated with George Mason University, in addition to her responsibilities as a professor in mathematics. In 2006, she was tenured and promoted to Associate Professor.

Goldin's research investigates sympletic geometry—a field that arose from the study of geometric structures underlying classical and quantum physics, but has become of great importance in modern differential geometry. She is a leader in work centered on Hamiltonian group actions and the study of topology and geometry of symplectic quotients. Her work has been called "influential," "elegant," "precise," and has been funded by two separate NSF research grants.

At Cornell, Goldin plans to collaborate with Tara Holm, Reyer Sjamaar, and Ed Swartz on questions involving equivariant cohomology, generalized Schubert Calculus, orbifold cohomology, K-theory, and even the relationship between the geometry of hypertoric varieties and oriented matroids. The Cornell mathematics department is planning a dedication in the fall of 2007 when Goldin will be in residence. Ruth Michler's parents hope to attend.

Ruth Michler's parents, Gerhard and Waltraud Michler of Essen, Germany, established the memorial prize with the Association for Women in Mathematics because Ruth was deeply committed to its mission of supporting women mathematicians. Cornell University was chosen as the host institution because of its distinctive research atmosphere and because Ithaca was Ruth's birthplace. At the time of her death, Ruth was in Boston as an NSF visiting scholar at Northeastern University. A recently promoted associate professor of mathematics at the University of North Texas, she was killed on November 1, 2000 at the age of 33 in a tragic accident, cutting short the career of an excellent mathematician.

Young Named Kovalevsky Lecturer

The Association for Women in Mathematics and the Society for Industrial and Applied Mathematics (SIAM) have selected Lai-Sang Young to deliver the prestigious Sonia Kovalevsky Lecture at the 2007 SIAM Conference on Applications of Dynamical Systems. Young is the Henry & Lucy Moses Professor of Science at New York University's Courant Institute of Mathematical Sciences. The Kovalevsky Lecture recognizes her fundamental contributions in the field of ergodic theory and dynamical systems. Her pioneering research has had a significant impact in the investigation of dynamical complexity, strange attractors and probabilistic laws of chaotic systems. Her interests include theory, applications and deep connections to mathematical physics and probability. She is an inspiration to the entire mathematics community, especially to the women's mathematics community.

Lai-Sang Young

Young was born in Hong Kong and emigrated to the United States to pursue higher education in mathematics at the University of Wisconsin, Madison (BA, 1973) and the University of California, Berkeley (MS, 1976; Ph.D., 1978). Prior to joining the faculty of Courant she held faculty positions at Northwestern University, Michigan State University, the University of Arizona, and the University of California, Los Angeles with visiting appointments to the University of Warwick, the Mathematical Sciences Research Institute, Universität Bielefeld, the Institute for Advanced Study, and the Institut des Hautes Études Scientifiques, among others. Chaotic dynamical systems are her specialty; the main themes of her research interests are measurements of dynamical complexity, strange attractors, cumulative effects of small random perturbations on long term behavior of dynamical systems, and probabilistic laws for chaotic systems. Young is the author or co-author of over 50 scholarly publications as well as numerous expository articles.

Young's work has been supported by the National Science Foundation since 1979 and has garnered wide respect and acclaim. In 1985, she was awarded an Alfred P. Sloan Foundation Fellowship, an award reserved for individuals who demonstrate "the most outstanding promise of making fundamental contributions to new knowledge" within six years of earning a Ph.D. In 1993, she was awarded the Ruth Lyttle Satter Prize for sustained outstanding research contributions over a five-year period by a female mathematician. In 1997, she won a Guggenheim Foundation Fellowship, and in 2004 she was elected as a Fellow of the American Academy of Arts and Sciences. Young was the 2005 AWM Noether Lecturer at the Joint Mathematics Meetings in Atlanta, Georgia.

Barbara Keyfitz, Past President of AWM, remarks: "With the choice of Lai-Sang Young to give the Kovalevsky lecture within two years of her Noether lecture, two independent selection committees have recognized the importance of Young's work." Cathy Kessel, President of AWM, adds: "The award is especially appropriate—Young is a very distinguished mathematician and her research extends the field in which Kovalevsky did her most significant work."

The 2007 SIAM Conference on Applications of Dynamical Systems will be held May 28 through June 1, 2007 in Snowbird, UT. The lecture honors Sonia Kovalevsky (1850–1891), the most widely known Russian mathematician of the late 19th century. In 1874, Kovalevsky received her Doctor of Philosophy degree from the University of Göttingen. She was appointed lecturer at the University of Stockholm in 1883. Kovalevsky did her most important work in the theory of differential equations. Past Kovalevsky lecturers are Ingrid Daubechies (Princeton University), Joyce R. McLaughlin (Rensselaer Polytechnic Institute), Linda R. Petzold (University of California, Santa Barbara), and Irene Fonseca (Carnegie Mellon University).

Awards of Other Societies at the JMM

A number of women and long-time AWM member and friend, Lee Lorch, received awards at the Joint Prize Session at the Joint Mathematics Meetings in New Orleans in January. Congratulations to all! Last issue, we reported on AWM's prizes. Here, we reprint citations and responses for awards given by AMS, MAA and SIAM, in the order of presentation. See the prize booklet "January 2007 Prizes and Awards" online at www.ams.org/ams/prizebooklet-2007.pdf.

Haimo Awards

In 1991, the MAA instituted the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics in order to honor college or university teachers who have been widely recognized as extraordinarily successful and whose teaching effectiveness has been shown to have had influence beyond their own institutions.

Citation for Jennifer Quinn

Jennifer Quinn has a contagious enthusiasm that draws students to mathematics. The joy she takes in all things mathematical is reflected in her classes, her presentations, her publications, her videos and her on-line materials. Her class assignments often include nonstandard activities, such as creating time line entries for historic math events or acting out scenes from the book *Proofs and Refutations.* One student created a children's story about prime numbers and another produced a video documentary about students' perceptions of math. A student who had her for six classes says, "I hope to become a teacher after finishing my master's degree, and I would be thrilled if I were able to come anywhere close to being as great a teacher as she is."

Jenny developed a variety of courses at Occidental College. Working with members of the physics department and funded by an NSF grant, she helped develop a combined yearlong course in calculus and mechanics. She also developed a course on "Mathematics as a Liberal Art" which included computer discussions, writing assignments, and other means to draw technophobes into the course. Her upper-division course on graph theory had students collect and attempt open problems in the field. This led to a joint publication with one of the undergraduates in the course. One project that grew out of her History of Mathematics course was a mathematics game show called "The Number Years." It was a huge hit at the winter Joint Mathematics Meetings in 2000.

Jenny is invited to give talks on mathematics to wide and varied audiences, from middle school students to senior citizens. In addition to being the co-editor of *Math Horizons,* she has written a variety of expository and research articles. Her MAA book, *Proofs That Really Count: The Art of Combinatorial Proof,* co-authored with Arthur Benjamin, won the 2006 Beckenbach Book Prize.

Her excellence has been recognized in other ways as well. In 2001, she received the Southern California MAA Distinguished Teaching Award. In fall 2005, she was the recipient of the Sterling Prize from Occidental College, awarded to only one professor at the College per year, based on professional achievement, excellence in teaching and service to the College.

Jenny was also the on-camera talent for a series of videos that accompany the Tussy and Gustafson elementary and intermediate algebra texts published by Brooks/Cole. To quote from one of her producers, "She always seems to be sharing a wonderfully complex secret, taking what might seem repetitive and monotonous on the page and transforming it into something meaningful, even fascinating. She has an uncanny ability to connect with the people she works with and teaches. And that connection is somehow able to lift people to a higher level and show them a series of wonderful new things."

We are delighted to award Jennifer Quinn the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching of Mathematics.

Biographical Note

Jennifer Quinn earned her BA, MS, and Ph.D. from Williams College, the University of Illinois at Chicago, and the University of Wisconsin, respectively. For the past thirteen years she has been affiliated with Occidental College, rising to the rank of full professor and serving as department chair. Jenny is currently the executive director of the Association for Women in Mathematics and continues her work as co-editor of *Math Horizons.* She lives in Tacoma, Washington, where

she occasionally teaches at the University of Puget Sound and Pacific Lutheran University. Someday she hopes to return to a permanent academic position, but for now she remains open to all possibilities and is eager to continue on life's journey.

Response from Jennifer Quinn

What an incredible distinction! The impact of past and current Haimo winners is extremely impressive, and I am honored to be included in their celebrated circle.

As mathematicians, we ponder and appreciate the beauty of our chosen subject. For me, teaching is my opportunity to reveal that beauty to others. It is a privilege, and my students are a constant source of energy, inspiration, and action.

I have been fortunate in my life and career having had encouraging teachers, an amazing thesis advisor, supportive colleagues, harmonious co-authors, a loving family, and dynamic students. I'd like to thank each and every one of you. You know who you are.

Ruth Lyttle Satter Prize in Mathematics

The Satter Prize was established in 1990 using funds donated by Joan S. Birman in memory of her sister, Ruth Lyttle Satter, to honor Satter's commitment to research and to encourage women in science. The prize is awarded every two years to recognize an outstanding contribution to mathematics research by a woman in the previous five years.

Citation for Claire Voisin

The Ruth Lyttle Satter Prize is awarded to Claire Voisin of the Institut de Mathématiques de Jussieu for her deep

NSF-AWM Travel Grants for Women

The objective of the NSF-AWM Travel Grants program is to enable women researchers in mathematics or in mathematics education to attend research conferences in their fields, thereby providing a valuable opportunity to advance their research activities and their visibility in the research community. By having more women attend such meetings, we also increase the size of the pool from which speakers at subsequent meetings may be drawn and thus address the persistent problem of the absence of women speakers at some research conferences. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians appointed by the AWM.

Travel Grants. These grants provide full or partial support for travel and subsistence for a meeting or conference in the applicant's field of specialization. A maximum of $1500 for domestic travel and of $2000 for foreign travel will be applied. For foreign travel, U.S. air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

Eligibility. These travel funds are provided by the Division of Mathematical Sciences (DMS) and the Division of Research, Evaluation and Communication (REC) of the NSF. The conference or the applicant's research must be in an area supported by DMS. Applicants must be women holding a doctorate (or equivalent experience) and with a work address in the USA (or home address, in case of unemployed mathematicians). Anyone who has been awarded an AWM-NSF travel grant in the past two years is ineligible. Anyone receiving a significant amount of external governmental funding (more than $2,000 yearly) for travel is ineligible. Partial travel support from the applicant's institution or from a non-governmental agency does not, however, make the applicant ineligible.

Applications. An applicant should send *five* copies of 1) the AWM Travel Grant Form, where conference name, conference dates and location (city/state/country), and amount of support requested should be provided, 2) a cover letter, 3) a description of her current research and of how the proposed travel would benefit her research program, 4) her curriculum vitae, 5) a budget for the proposed travel, and 6) a list of all current and pending travel funding (governmental and non-governmental) and the amounts available for your proposed trip to: Travel Grant Selection Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. If you have questions, contact AWM by phone at 703-934-0163 or by e-mail at awm@awm-math.org. Applications via e-mail or fax will not be accepted. There are three award periods per year. The next two deadlines for receipt of applications are **October 1, 2007** and **February 1, 2008**.

contributions to algebraic geometry, and in particular for her recent solutions to two long-standing open problems. Voisin solved the Kodaira problem in her paper "On the homotopy types of compact Kähler and complex projective manifolds," *Invent. Math.* 157 (2004), no. 2, 329–343. There she shows that in every dimension greater than three, there exist compact Kähler manifolds not homotopy equivalent to any smooth projective variety. This problem has been open since the 1950s when Kodaira proved that every compact Kähler surface is diffeomorphic to (and hence homotopy equivalent to) some projective algebraic variety. Her idea is to start with the fact that certain endomorphisms can prevent a complex torus from being realized as a projective variety, and then to construct Kähler manifolds whose Albanese tori must carry such endomorphisms for homological reasons. In a completely different direction, Voisin also solves Green's Conjecture in her papers "Green's canonical syzygy conjecture for generic curves of odd genus," *Compos. Math.* 141 (2005), no. 5, 1163–1190 and "Green's generic syzygy conjecture for curves of even genus lying on a *K3* surface," *J. Eur. Math. Soc.* 4 (2002), no. 4, 363–404.

A century ago, Hilbert saw that syzygies (relations among relations) were important invariants of varieties in projective space, and in the early 1980s, Mark Green conjectured that the syzygies of a general curve canonically embedded in projective space should be as simple as possible. This conjecture attracted a huge amount of effort by algebraic geometers over twenty years before finally being settled by Voisin. Her idea is to work with curves on a suitable *K3* surface, where she executes deep calculations with vector bundles (at least in even genus) that lead to the required vanishing theorems.

Biographical Note

Claire Voisin defended her thesis in 1986 under the supervision of Arnaud Beauville, then entered the CNRS as chargée de recherche in 1986. She has since pursued her career in this institution, occasionally teaching graduate courses, but mainly doing research and advising students. Voisin has been awarded a few prizes, including the EMS Prize in 1992, the Servant Prize (1996) and the Sophie Germain Prize (2003) of the French Academy of Sciences, and the silver medal of the CNRS in 2006. She was invited to the Zurich ICM in 1994.

Response from Claire Voisin

I am deeply honored to have been chosen to receive the 2007 Ruth Lyttle Satter Prize. I feel of course very encouraged by this recognition of my work. I would like to thank the members of the prize committee for selecting me. I am also very grateful to my institution, the CNRS, which made it possible for me to do research in the best conditions.

MAA Certificate of Meritorious Service

Citation for Marilyn Repsher, Florida Section

The Florida Section of the Mathematical Association of America is pleased to recognize Marilyn L. Repsher from Jacksonville University as a 2007 recipient of the MAA Certificate of Meritorious Service.

Dr. Repsher has a long and distinguished history of service to the Florida Section and to the national mathematical community. She served the section as governor from 2001–2004, as president from 1990–1992, as vice-president for programs from 1987–1989 and as vice-president for four-year colleges from 1980–1982. She received the section's Distinguished Service Award in 1998.

Dr. Repsher received her Ph.D. from Columbia University and her master's degree from The Catholic University of America in Washington, DC. In 1978, Dr. Repsher was recognized as Jacksonville University's Professor of the Year. In 2001, she was recognized as Jacksonville University's Woman of the Year. In 1999, Dr. Repsher was named U.S. Professor of the Year (Master's Universities and Colleges division) by The Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education. Dr. Repsher is a Carnegie Scholar in the 2000 cohort of the Carnegie Academy for the Scholarship of Teaching and Learning.

For her exemplary performance, spanning a period of three decades, in service to her faculty colleagues throughout the state, the Florida Section is pleased that the MAA Certificate of Meritorious Service goes to Marilyn L. Repsher.

Response from Marilyn Repsher

There are many people in the Florida Section and around the country who have brought me to this point. I am proud to be a member of our outstanding Florida Section. The

meetings and activities of the section have reached mathematics faculty in public and private colleges, two- and four-year institutions, and secondary schools throughout the state. On the national level, MAA publications and meetings have enriched my work and energized my teaching and research. I am grateful too for the support and inspiration from my colleagues and students at Jacksonville University. Thank you for this honor.

Citation for Sister Jo Ann Fellin, Kansas Section

Sister Jo Ann Fellin, OSB, received her Ph.D. from the University of Illinois in 1970. She then became an assistant professor at Mount Saint Scholastica College in Atchison, Kansas, which merged the next year with Benedictine College. She spent the rest of her career at Benedictine, with sabbaticals at Illinois and Notre Dame, and received Benedictine's Distinguished Educator Award in 1998. She worked throughout her career to support young mathematicians, especially women. She has given many talks to school groups and teachers and worked with a variety of organizations, especially the MAA. She has made several presentations at sectional and national MAA meetings, served on numerous committees, hosted the Kansas section meeting twice, served a term as section governor, and is the only person in the last 50 years to serve two terms as section chairperson. She was the unanimous

Sonia Kovalevsky High School Mathematics Days

Through a grant (*pending final funding approval*) from Elizabeth City State University and the National Security Agency (NSA), the Association for Women in Mathematics expects to support Sonia Kovalevsky High School Mathematics Days at colleges and universities throughout the country. Sonia Kovalevsky Days have been organized by AWM and institutions around the country since 1985, when AWM sponsored a symposium on Sonia Kovalevsky. They consist of a program of workshops, talks, and problem-solving competitions for high school women students and their teachers, both women and men. The purposes are to encourage young women to continue their study of mathematics, to assist them with the sometimes difficult transition between high school and college mathematics, to assist the teachers of women mathematics students, and to encourage colleges and universities to develop more extensive cooperation with high schools in their area.

AWM anticipates awarding 12 to 20 grants ranging on average from $1500 to $2200 each ($3000 maximum) to universities and colleges; more grants may be awarded if additional funds become available. Historically Black Colleges and Universities are particularly encouraged to apply. Programs targeted toward inner city or rural high schools are especially welcome.

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

The decision on funding will be made in late August. The high school days are to be held in Fall 2007 and Spring 2008. If selected, the organizer(s) must submit a report of the event along with receipts (originals or copies) for reimbursement to AWM within 30 days of the event date or by May 15, 2008, whichever comes first. Reimbursements will be made in one disbursement; no funds can be disbursed prior to the event date. An additional selection cycle will be held February 4, 2008 for Spring 2008 only if funds remain after the August 2007 selection cycle.

Send *five* complete copies of the application materials to: Sonia Kovalevsky Days Selection Committee, Association for Women in Mathematics, 11240 Waples Mill Road, Suite 200, Fairfax, VA 22030. For further information: phone 703-934-0163, e-mail awm@awm-math.org, or visit www.awm-math.org. Applications must be received by **August 4, 2007**; applications via e-mail or fax will not be accepted.

choice for the Certificate of Meritorious Service from the Kansas Section.

Response from Sister Jo Ann Fellin

Gratitude fills my heart as I accept this Certificate of Meritorious Service from the Mathematical Association of America. I am grateful first to my Kansas Section colleagues not only for nominating me but more so for their friendship over the years. Teaching in a small undergraduate institution makes broad association with other mathematicians important and rewarding. I am grateful to the national organization for the wonderful opportunities it has provided me. Sharing with colleagues across the nation and participating in various minicourses has benefited me greatly as a person and in my teaching. I especially appreciate the many women I have met and worked with while coordinating the Kansas City Region of WAM (Women and Mathematics). Finally, I am grateful to Benedictine College for the support it provided me for professional development through attendance at MAA meetings. May the Mathematical Association of America continue its great work in promoting excellence in teaching and learning.

Citation for Donna Beers, Northeastern Section

Donna Beers has long been generous and gracious in offering her time, talents and infectious enthusiasm to the Mathematical Association of America through both the Northeastern Section and the national organization. She is well known and highly regarded by mathematicians and mathematics educators throughout the broader mathematics community. It is no surprise to many that the MAA would seize this opportunity to recognize and honor Donna through this MAA Certificate for Meritorious Service.

Her contributions to our association are numerous and varied. Donna served as section vice chairperson from 1992–1993, chairperson from 1993–1995, and past chairperson from 1995–1997. She served as section governor from 2000–2003. Throughout the period of her leadership the section continued to prosper by offering varied and interesting programs that were well received by the membership. Donna has often been an invited speaker at section meetings, from the 1970s to the present, where she offered her insights into a variety of mathematical and educational topics. In 2003 she gave the invited presentation for students at the MAA-AMS Joint Mathematics Meetings in Baltimore. In addition, she has given many contributed papers at both section and national meetings. Further, she has served on and chaired numerous NES/MAA committees, including several program committees for section meetings. She is a current or former member of the MAA editorial boards of the A*merican Mathematical Monthly, Mathematics Magazine,* the *Dolciani Mathematical Expositions,* and *Focus*/MAA Online. She served on the steering committee of the MAA PREP Workshop, *Leading the Academic Department: A Workshop for Chairs of a Mathematical Sciences Department.* At present, she serves on the MAA Investment Committee, the Chauvenet Prize Committee, and the editorial board of the Anneli Lax New Mathematical Library.

Donna is professor and past chair of the Department of Mathematics and Computer Science at Simmons College, where she has been since 1986. Her scholarly interests include preparation of teachers, undergraduate research, and abelian groups. She served as director of the Honors Program and created a very successful interdisciplinary Honors seminar on patterns. She also served as director and principal investigator of the Verizon Scholars Program, a mentoring and outreach program with TechBoston, a department of the Boston Public Schools, for high school women interested in Web design and programming. Donna initiated the Simmons College Student Chapter of the MAA. Members of the Simmons Chapter have delivered papers at the annual Hudson River Undergraduate Mathematics Conference as well as regional and national meetings of the MAA. She has just completed a term as Visiting Mathematician at the MAA.

For her hard work and continuing commitment to the advancement of mathematics, the MAA and the Northeastern Section are pleased to award Donna Beers this Certificate for Meritorious Service.

Response from Donna Beers

I am very honored to receive this award. I sincerely thank my colleagues in the Northeastern Section for their steadfast support, encouragement, and friendship. I deeply appreciate the Mathematical Association of America, whose programs, publications, and people have enriched my life

and contributed enormously to my growth and development as a professional. Thank you so much.

Citation for Janet Heine Barnett, Rocky Mountain Section

Janet Heine Barnett completed her Ph.D. in mathematics in 1990 at the University of Colorado, Boulder, and subsequently joined the Department of Mathematics at Colorado State University, Pueblo. She became a member of the Rocky Mountain Section of the MAA as a graduate student in 1988, and since then has been creative, diligent, and tireless in her work to fulfill the section's mission to "promote excellence in mathematics education, especially at the collegiate level." In her many years of service, Janet has been the heart of our section. She has been an excellent role model, getting people involved in section activities and ensuring that our section flourished and will continue to do so.

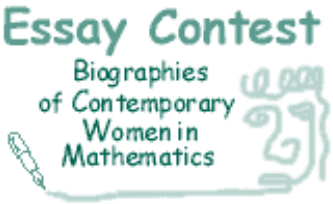
Janet served the section as chair for two years, secretary/treasurer for six years, liaison coordinator for eight years, CCTM representative for two years, newsletter editor for four years, book sales coordinator for seven years, and program chair for the 1995 meeting and our upcoming 2007 meeting. She also organized various sessions at our section meetings and at MathFest. Nationally, she was the Rocky Mountain governor for three years, was a member of the ad hoc Committee on Advising for two years and of the Committee on Department Liaisons Program for five years, and is currently a member of the Committee on Minicourses. It is with great pleasure and gratitude that the MAA awards Janet Heine Barnett the Certificate of Meritorious Service.

Response from Janet Heine Barnett

Early in my professional career, it was my good fortune to be welcomed into the MAA Rocky Mountain Section by the inspiring individuals who make our section such a vibrant organization. Since then, my time as a section member and officer has given me many wonderful opportunities for growth, laughter, friendship, and learning. I thank the section and its membership not only for these opportunities but for the honor of this Certificate of Meritorious Service and the faith in my abilities that it represents.

Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics

The Gung and Hu Award for Distinguished Service to Mathematics, first presented in 1990, is the endowed successor to the Association's Award for Distinguished Service to Mathematics, first presented in 1962. This award is intended to be the most prestigious award for service offered by the Association. It honors distinguished contributions to mathematics and mathematical education, in one particular



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

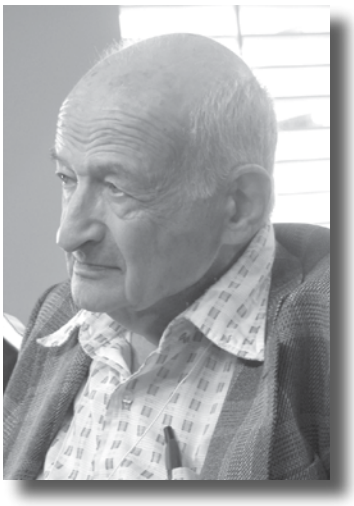
At least one winning entry will be chosen from each category. Winners will receive a prize, and their essays will be published online at the AWM Web site. Additionally, a grand prize winner will have his or her entry published in the AWM *Newsletter*. For more information, contact Dr. Victoria Howle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

aspect or many, and in a short period or over a career. The initial endowment was contributed by husband and wife Dr. Charles Y. Hu and Yueh-Gin Gung. It is worth noting that Dr. Hu and Yueh-Gin Gung were not mathematicians, but rather a professor of geography at the University of Maryland and a librarian at the University of Chicago, respectively. They contributed generously to our discipline because, as they wrote, "We always have high regard and great respect for the intellectual agility and high quality of mind of mathematicians and consider mathematics as the most vital field of study in the technological age we are living in."

Citation for Lee Lorch

Lee Lorch's mathematical research has been in the areas of analysis, differential equations, and special functions. His teaching positions have included the City College of New York, Pennsylvania State University, Fisk University, Philander Smith College, the University of Alberta, Howard University, Royal Institute of Technology (Stockholm) and Aarhus University. He was at York University from 1968 until retirement in 1985 and remains active in the mathematical community.

His scholarship has been recognized by election to Fellowship in the Royal Society of Canada; appointment to committees of the Research Council of Canada; election to the Councils of the American Mathematical Society, the Canadian Mathematical Society, and the Royal Society of Canada; and by many invitations to lecture.



Lee Lorch

Lee Lorch is a remarkable teacher of mathematics and an inspiration to his students. Among those he guided were Etta Falconer, Gloria Hewitt, Vivienne Malone Mayes, and Charles Costley. He has recruited into graduate work and mathematical careers many students who would not have otherwise considered such a path. [See V. Mayes, *American Mathematical Monthly,* 1976, pp. 708–711; and P. Kenschaft, *Change Is Possible,* American Mathematical Society, 2005.]

Call for Nominations: The 2008 Kovalevsky Prize Lecture

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

The mathematicians who have given the prize lecture in the past are: Linda R. Petzold, Joyce R. McLaughlin, Ingrid Daubechies, and Irene Fonseca. The 2007 lecture in May will be delivered by Lai-Sang Young.

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

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

During the early organization of the Association for Women in Mathematics, Lee gave sage advice about the value of inclusiveness in supporting effective advocacy. He is responsible for the appearance of the preposition "for" in place of the initially proposed "of" in the name of the AWM.

Throughout his career he has been a vocal advocate and energetic worker for human rights and educational opportunities. His interventions, especially in the 1950s, led to changes in the policies and practices of the AMS and the MAA that ensured that all mathematicians could participate in the official events of these organizations. While his actions have not solved all the problems he addressed, surely his energy has contributed to much progress.

As an example, we cite events surrounding a meeting in 1951 held in Nashville. Lee Lorch, the chair of the mathematics department at Fisk University, and three Black colleagues, Evelyn Boyd (now Granville), Walter Brown, and H. M. Holloway, came to the meeting and were able to attend the scientific sessions. However, the organizer for the closing banquet refused to honor the reservations of these four mathematicians. (Letters in *Science,* August 10, 1951, pp. 161–162, spell out the details.) Lorch and his colleagues wrote to the governing bodies of the AMS and MAA seeking bylaws against discrimination. Bylaws were not changed, but non-discriminatory policies were established and have been strictly observed since then.

For his life-long contributions to mathematics, his continued dedication to inclusiveness, equity, and human rights for mathematicians, and especially his profound influence on the lives of minority and women mathematicians who have benefited from his efforts, the MAA presents this Yueh-Gin Gung and Charles Y. Hu Award for Distinguished Service to Mathematics to Lee Lorch.

Biographical Note

Lee Lorch, FRSC, is professor emeritus at York University in Toronto. Born in New York, his undergraduate studies were at Cornell. He holds a Ph.D. from the University of Cincinnati, mentored by Otto Szasz.

While in the U.S. Army during the war and shortly before going overseas, he married Grace Lonergan, a Boston school teacher. She was dismissed for committing matrimony and became the first Boston teacher to contest that policy, but lost. A plaque commemorating her pioneering struggle and celebrating her subsequent civil rights activities now adorns the entrance to a Boston public school. Their participation in the struggle against housing discrimination cost Lorch two jobs in quick succession.

Moving south, their efforts to speed the end of segregation in public education, as mandated by the Supreme Court (1954), cost Lorch the last two posts he was able to obtain in the U.S. He was summoned before the House Committee on Un-American Activities and cited for "contempt" for refusing to say whether he had ever been a member of the Communist Party. He was acquitted. Grace Lorch was called before the Senate Subcommittee on Internal Security, where she also refused to answer political questions. Years later, Lorch received honorary degrees from two of the institutions that had dismissed him. In 1959 the couple moved to Canada. Both have received awards for their civil rights contributions.

Response from Lee Lorch

While this award honors me, it gives me even greater satisfaction that, by making it, the MAA emphasizes its support for equity.

There are all too many proofs that this fight is far from over. One surrounds us here: Katrina and post-Katrina New Orleans. Why was New Orleans left so vulnerable? Why was flood control, so urgently and obviously needed, set aside? Its low-lying areas, overwhelmingly African-American, seedbeds of world famous African-American music, are ruined, their residents scattered and disheartened, their communities in peril of dissolution.

Even the AMS homepage tells us only of Tulane—not of the several afflicted HBCUs. Perhaps no one in these institutions has submitted a report. Maybe they do not feel really part of the mathematical community. Why not? What is being done about it?

"The struggle continues." Happily, this award is a sign of which side the MAA is on.

Thank you. Thank you very much!

Education Column

Ginger Warfield, University of Washington

Back in my days at the wrong end of the red pencil, I observed that when I was told to compare and contrast two things I often wound up with a clearer picture of both of them individually than I had previously had of either. With this in mind, I recently decided to assign myself the task of comparing and contrasting New Math and Reform (or NCTM Standards-based) Math, along with the controversies and polemics engendered by each of them. I wouldn't say that all is now clear to me, but the process certainly generated some new perceptions.

Before I launch into the comparison, I had better explain my own place in each of the events, since that determines the perspective from which I view them. The explanation involves a little history, a considerable time having passed since the New Math was new. The point of origin of New Math was very straightforward: in 1957 the Russians put a satellite into orbit before we did. Sputnik, it was called, and its impact was dramatic. Spotlights were instantly focused on our scientific community, and it was noted that not enough mathematicians were coming out the upper end of the educational pipeline. The mathematical community snapped to attention and observed that the K–12 curriculum was A) mathematically incoherent and B) boring. A group of extremely dedicated and hard-working mathematicians set about to repair this lamentable state of affairs. The School Mathematics Study Group (SMSG), funded by the National Science Foundation and directed by Ed Begle, worked from 1958 to 1977 and produced a mathematically elegant series of texts.

All of this I watched happening from a very close vantage point on the sidelines. My father, E.J. McShane, was on the National Science Board from 1956 to 1968 and was president of the AMS in 1959–60. His support of SMSG was wholehearted and energetic. I was correspondingly quite excited and completely convinced by the whole project.

Returning to historical mode: New Math ran into serious difficulties, which I will discuss later, and the result was a massive swing back to basics. There the pendulum sat for a while, until the country's mathematical inadequacy once more came into the public consciousness. Reports like *A Nation at Risk* sounded a clarion call to Do Something. This time the mathematics education community—specifically, the National Council of Teachers of Mathematics—took up the challenge. They assembled a huge multitude of people to whom the mathematical education of the country's children was relevant, from teachers and school administrators to business leaders. They even reached across the chasm produced by the New Math difficulties to invite in some mathematicians. Several years of hard work later, the NCTM Standards appeared, advocating a very different set of emphases from the accustomed ones and a correspondingly different approach to teaching. With massive effort, a large part of the mathematical community set about changing the whole system over. This change is the locus of the infamous Math Wars.

Completing the perspective issue: During and after the New Math times I continued along the course I had set out for myself and completed a Ph.D. in mathematics. Shortly thereafter the family passion for teaching, which was second only to the family passion for mathematics, came into ascendancy in my life. Eventually this led to an interest in building bridges between mathematics and mathematics education, which in turn led to my having the opportunity to work closely with colleagues in the College of Education. With some concentration I can simultaneously see things from the mathematician's point of view and the mathematics educator's. And when the two diverge I shuttle madly back and forth to try to find the elements that could be used to promote communication.

What then are the similarities between New and Reform Math? By far the most visible is that both proposed sweeping changes and each was produced with massive effort by a community determined to meet a clearly perceived need. Another similarity is that each ran into difficulties of a scope that was far beyond the expectations of its creators. In the case of the New Math it took me years to develop any kind of clear picture, because I was too closely enclosed in the community that produced it. My father was badly hurt by its rejection, as were the others who worked so hard to produce it. To the end of his days my father felt that he had received an unfair slap in the face from the educational community. Coming into the educational community I was presented with an image of mathematicians as arrogant clods who came trampling in where they really didn't have any business to be.

Each perception had a grain of truth. The mathematicians' arrogance had much more to do with their love of mathematics than personal pride—they were not able to imagine that their beautiful field, if presented with a carefully thought out axiomatic structure, could fail to be clear and inspiring in the eyes of the learner. They also, I suspect, lacked a real perception that there was a difference between teaching, say, an inner city class with children from four different cultures and teaching the classes in which they saw their children and their friends' children learning. That wasn't because they were mathematicians—very few people had a handle on that problem at that point in history—but it was certainly damaging. On the other side of the chasm, people in the educational system were part of a culture we have built ourselves that regards mathematics as obscure and frightening and best left in the hands of the severely gifted. For the average teacher, the important thing was to protect children from it, which is a good way to guarantee they will fear it (generally expressed as hating it) as well. I should add that there were in fact many teachers who took to it like ducks to water and still light up at the mention of New Math. Unfortunately they were emphatically a minority.

The contrasts between the two movements are in general easier to spot. Underlying them are three major changes. One is that research into learning, which at the time of the New Math was an area in which there were a few outstanding people whose work was regarded as very interesting, but relevant to theory rather than practice. By the time of Reform Math it had become a respectable research field. Like any academic field, it has its share of silly articles, and unfortunately anybody can read them, unlike silly mathematical articles, which unduly damages some folks' reactions. What's important is that good, solid work has been going on since mid-century, and work on the NCTM Standards was based on it.

The other changes are of an even larger scope. We may cringe to admit it, but racial and gender inequities were so entrenched at Sputnik time that those working with the image of filling up the scientific pipeline unquestionably had a vision of lots of middle class white males emerging. By the late '80s that situation had at least been faced, and the task the NCTM set itself was not simply to improve the mathematics of the cream of the educational crop, but to see to it that all children in every walk of life have the opportunity to learn what they really need to know in mathematics.

That last sentence subtends the third major change. A century ago the job market held lots of possibilities for anyone who could competently carry out all the basic operations with whole numbers and positive fractions. Even negative numbers were a frill. Today those skills remain a part of basic literacy, but the fact is that any can be done by a dime store calculator. Correspondingly, just being able to do them is way short of enough. People need to be able to fit them into a whole framework—to see them as tools and be able to use those tools freely and comfortably. In terms of job skills, the business community has made it clear that what it needs is people who can solve problems, and who can communicate and cooperate with others. In terms of functioning in society, people need to be able to analyze a situation, reason correctly and recognize false reasoning. All of these things need to be taught to all children. That's a very different mandate from the one to which the SMSG was responding.

As the situation is more complex, so too are the challenges Reform Math has faced. For the New Math there was a single basic sticking point: the mathematicians who produced it were unaware either that the mathematics that was so crystal clear to them was obscure and frightening to the majority of teachers and administrators, or of how damaging that obscurity and fear were. Standards-based teaching, on the other hand, involves a shift in the viewpoint of what constitutes good teaching, along with many changes in mathematical emphasis. It involves seeing to it that students are intellectually engaged and producing their own ideas, while also making sure that those ideas are tied together in a way that forms a foundation for further learning, and that that learning converges to the essential elements of whatever level of mathematics they are learning. It involves really listening to students in a way that the classical mini-lecture-plus-worksheet tactics never did. It is hard! Fortunately when it goes as it should it is also extremely rewarding.

A change of that scope can't and shouldn't happen too swiftly. There was a field-testing phase, initially involving materials brought over from the Netherlands, where many elements of this kind of teaching have been in use for years. After that came a time of creating and testing and re-creating materials of our own, with the support of the NSF. Then finally began

the expansion phase, with a lot of assessment accompanying it. Assessment can't happen very swiftly either, since the point is what happens to children who are consistently taught in this way. A cheer went up across the country when in 2001 results of a multi-year study in Pittsburgh were released and the theoretical benefits began to have support from data: for children in the schools that made thorough use of Standards-based curricula the computational skills did not diminish and the problem-solving and reasoning abilities shot up—all as measured on standardized tests. Other places have since supplied similar data.

Meanwhile, however, an opposition developed. It was swift, effective and extremely politically savvy. After a brief period of stunned disarray, the supporters of Reform sprang to its defense, and the all-too-aptly named Math Wars were launched. I watched them for a number of years with slightly smug sympathy, because I knew my state was too reasonable to be susceptible to such tactics. I was wrong, of course, and am now somewhat battle-scarred and as of this writing still fighting like mad—but that's another story.

All of this brings me to one final contrast and similarity. The contrast is in the nature of the opposition. In the case of the New Math what happened was that the educational system said, "You've thrust at us something that we just don't want to deal with" and was duly supported in rejecting it. Opposition to Reform Math was, as I understand it, launched as a power play by someone completely outside of mathematics or education. It was a professional lobbyist who came up with the "Fuzzy Math" smear that has served them so well. They're operating on different hypotheses from mine, so their outrageous actions must be in some way reasonable within their framework. I can even understand the collection of mathematicians who signed an open letter to the Secretary of Education decrying the NSF curricula, many of them without having looked at a single one of them. A colleague had asked them to, and we are all pretty collegial. What I can't understand is that the attack is still being carried forward by a small cadre of active, well-established mathematicians. Pointing to specific (sometimes genuine) flaws, they advocate eliminating everything and returning to the good old days—the ones that brought us a country where it is far more acceptable to hate math than to enjoy it, and where an electorate quietly accepts whatever data and "reasoning" the media present. There are a few tadpoles and algae in the bathwater, but have they no concern for the baby?

The final similarity, on the other hand, points up a glaring omission on the part of those of us who are trying to make the change happen. One of the fatal weaknesses for the New Math was that parents couldn't understand their children's homework and couldn't help them. When the education establishment told them it was actually nonsense, they were easily persuaded. It was their support of the opposition that helped the tide to turn against the program. Now we are again sending home homework that parents don't understand, and to make matters worse, instead of looking to the parents like something alarmingly abstruse, it looks like a race around invisible obstacles towards an unfamiliar goal. Small wonder that when they are told that "mathematicians think this is nonsense" they find the statement easy to accept. We urgently need their support, and to gain that support we need their understanding, and it is up to us to produce that understanding. How to achieve that? That's not just another column, it's another whole book!

Fulbrights in Israel

Three postdoctoral research grants in the exact sciences—chemistry, computer science, mathematics, physics or related fields—will support individual projects at any institution in Israel starting in September 2008. Applicants must be U.S. citizens and have completed the Ph.D. within the three years preceding August 1, 2007. Holders of tenure-track positions are not eligible. Applicants must apply to potential host institutions, according to the guidelines of these institutions, in parallel to submission of their Fulbright applications. Prior to confirmation of a Fulbright award, candidates will be required to provide proof of acceptance as a postdoctoral research fellow at an accredited institution of higher education. Participating host institutions are required to provide fellows with their customary, basic postdoctoral award in addition to the Fulbright postdoctoral fellowship provided by the United States-Israel Educational Foundation. The Fulbright award is $17,500 per academic year, for two academic years (20 months net in Irsrael). See http://www.cies.org/award_book/award2008/country/MidIsrl.htm.

Book Review

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

Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering, Committee on Maximizing the Potential of Women in Academic Science and Engineering, Committee on Science, Engineering, and Public Policy, National Academies Press, Washington, D.C., 2006, ISBN 0-309-10320-7, http://books.nap.edu/catalog/11741.html

Reviewer: Leigh Shaw McCue, Aerospace and Ocean Engineering, Virginia Tech, mccue@vt.edu

This timely and crucial report studies the results of well over 400 publications relating to gender issues in science and engineering from the grade school level to the rank of deans. The primary findings of the report include:

1. Women have the ability and drive to succeed in science and engineering.…
2. Women who are interested in science and engineering careers are lost at every educational transition.…
3. The problem is not simply the pipeline.…
4. Women are very likely to face discrimination in every field of science and engineering.…
5. A substantial body of evidence establishes that most people—men and women—hold implicit biases.…
6. Evaluation criteria contain arbitrary and subjective components that disadvantage women.…
7. Academic organizational structures and rules contribute significantly to the underuse of women in academic science and engineering.…
8. The consequences of not acting will be detrimental to the nation's competitiveness. (S-1–S-3)

The report goes on to refute via citation to scientific studies numerous "commonly held beliefs" about women in science and engineering ranging from "Women are not as good in mathematics as men" to "Women faculty are less productive than men" to "The system as currently configured has worked well in producing great science; why change it?" (summarized on S-4). Specific recommendations are put forth for every step in the academic chain of command: universities, professional societies, funding agencies, federal agencies, and congress (S-5–S-9).

When discussing, and rebutting, the claim that cognitive differences are responsible for the difference in male versus female success rates in science and engineering, the report notes that "[m]ost discussions of cognitive sex differences emphasize a small number of measures showing sex differences and de-emphasize the overlap between men and women on those measures as well as the large number of measures by which sex differences are small, non-existent, or favor women.… Studies of brain structure and function, of hormonal modulation of performance, of human cognitive development, and of human evolution have not revealed significant biological differences between men and women in performing science and mathematics that can account for the lower representation of women in these fields" (2-1). Also, quite interestingly, the report notes "[m]easures of aptitude for high school and college science have not proved to be predictive of success in later science and engineering careers … of the college-educated professional workforce in mathematics, science, and engineering, fewer than one-third of the men had SAT-M scores above 650, the lower end of the threshold typically presumed to be required for success in these fields" (2-2, details on 2-8). Of great interest as well is the principle of "stereotype threat." That is, when women were told their test scores would be used to compare with the scores of men, they generally underperformed. However, when the stereotype is confronted through "Teaching Intervention," the female test-takers perform similarly to their male peers (2-20–2-21).

On the subject of faculty recruitment, retention, and productivity, some notable findings of the report include the following:

> Productivity does not differ between men and women science and engineering faculty, but it does between men and women graduate students and postdoctoral scholars. Differences in numbers of papers published, meetings attended, and grants written reflect the quality of faculty-student interactions.…

> Overall, men and women science and engineering faculty who come up for tenure appear to receive it at similar rates. Differences in the rate at which men and women receive tenure vary substantially by field and by race or ethnicity. For example, in social sciences women are about 10% less likely than men to be awarded tenure. African American women science and engineering faculty were 10% less likely than men of all ethnicities to be awarded tenure….
>
> As faculty move up in rank, differences between men and women become apparent in promotions, awards, and salary. (3-1–3-2)

As for where faculty go when changing jobs, "men were significantly more likely to leave the tenure track for non-academic employment…. Across all fields of science and engineering women are 40% more likely than men to exit the tenure track for an adjunct academic position…. Women whose primary or secondary responsibility was teaching or those who had government funding were significantly less likely to exit to adjunct positions" (3-36–3-37).

At the undergraduate level, men and women often differ on their reasons for leaving science, engineering, or mathematics degree programs. According to a 1997 paper by Seymour & Hewitt cited in the report, the top three reasons women gave for leaving, in order, were "non SEM major offers better education," "lack/loss of interest in SEM," and "rejection of SEM careers and associated lifestyles," while for men the list, in order, was "lack/loss of interest in SEM," "curriculum overload," and "poor teaching by SEM faculty" (3-15).

Another critical topic focused upon in the report is the recruitment and retention of minority women and how they face the barriers of both groups, termed a "double-bind." A couple of distressing statistics are that "[t]he proportion of tenured minority-group women declined from 1989 to 1997" and that "[i]n 2002, Native American women held no full professor positions in physical sciences or engineering; there was only one African American woman full professor in the 'top 50' physical sciences and engineering departments" (1-5). The role of historically black colleges and universities and women's colleges should not be overlooked: "75% of the African American women who earned Ph.D.'s in biology from 1975–1992 earned their baccalaureate degrees from either Spelman College or Bennett College" (Leggon & Pearson as cited on 3-21).

The fourth chapter of the report discusses measurement of success in academia and how bias may adversely affect women for recognition, promotion, tenure, and selection of campus leaders. In the stated findings, this reviewer found of the highest interest the statement that "[t]he critical factor affecting publication productivity is access to institutional resources; marriage, children, and elder-care responsibilities have minimal effects" (4-2). Of potentially refreshing news to the AWM *Newsletter* audience is that in terms of the number of female chief editors at top-ranked journals as determined by impact factor, mathematics[1] ranks higher (20%) than engineering (0%) or physics (0%). However medical journals (50%) and social science journals (40%) have clearly done a better job in recruiting female leadership (4-18). With regards to publication, the report writers also advocate "blinded review" in which the reviewer of a technical manuscript does not know the names of the authors (4-27).

Work-life balance is treated in the fifth chapter entitled "Institutional Constraints." The profound point is made in the opening summary of this chapter that "Those on highly competitive academic career tracks are aware of these issues and often make compromises to lessen the conflict or choose not to avail themselves of accommodations for which they are eligible, such as stopping the tenure clock or reducing work responsibilities, out of fear of damaging their career prospects" (5-1). Particularly intriguing in comparison to the finding noted in the paragraph above regarding publication productivity was the statement that "Mason and Goulden have found that married women who have children are 50% less likely

[1]The specific "top ranked" mathematics journals were: *Journal of the American Mathematics Society, Annals of Mathematics, Computational Complexity, Journal de Mathématiques Pures et Appliquées,* ***Bulletin of the American Mathematics Society****, ACTA Math-Djursholm, Inventiones Mathematica, Journal of the European Mathematics Society, Memoirs of the American Mathematical Society,* and *Duke Mathematical Journal.* Upon the editor's suggestion, I attempted to verify this statistic by looking up names/pictures (where possible) of the chief editors of these journals—the only journal I found of this list to be presently headed by a female chief editor is listed in bold above.

to gain faculty positions, compared with single women or married men who have children. Ginther, examining career progression by field, found single women scientists and engineers 16% more likely than single men to be in tenure track jobs five years after the Ph.D. while married women with children were 45% less likely than married men with children to be in tenure track positions. Having children, especially young children, decreases the likelihood of women's obtaining a tenure track job by 8% to 10% in all science and engineering fields but has no significant impact on men" (5-7). And yet more strikingly, "[m]otherhood has been identified as the factor most likely to preclude a woman with science or engineering training from pursuing or advancing in an academic career…. About 45% of women who have tenure do not have children" (5-13).

So what can be done? The report cites a Johns Hopkins School of Medicine report which identifies six areas for reducing or eliminating obstacles for academic women: leadership, education, decrease in isolation, faculty development, academic rewards, and monitoring and evaluation (6-8). The report also proposes a scorecard for "evaluating how well research universities serve women and minorities in science and engineering" presented on pages 6-20–6-23. It is designed as a university self-assessment of sorts.

Overall this is a very well written and researched report. In some areas it is apparent that it is written by committee where contradictory points are made seemingly in complement, and many of the examples focus upon chemical engineering rather than a broad swatch of mathematics, science, and engineering fields. It should be noted that there exist a number of noteworthy recent reports discussing the recruitment and retention of women in science and engineering not discussed in this review in the name of brevity. A partial bibliography of such materials is included below for the interested reader.

To Recruit and Advance: Women Students and Faculty in Science and Engineering, Committee on the Guide to Recruiting and Advancing Women Scientists and Engineers in Academia, Committee on Women in Science and Engineering, National Academies Press, Washington, D.C., 2006, http://books.nap.edu/catalog/11624.html

AAUP Faculty Gender Equity Indicators 2006, Martha S. West and John W. Curtis, American Association of University Professors, Washington, D.C. 2006 http://www.aaup.org/AAUP/pubsres/research/geneq2006

Report from the Task Force on Women in Science and Engineering, Harvard University, 2005, http://www.faculty.harvard.edu/01/pdf/WISE_Exec_Summ.pdf

Assessing the climate for doctoral students at the University of Michigan, UM ADVANCE Project and Institute for Research on Women and Gender, 2006, http://www.umich.edu/~advproj/PhD_Report_es.pdf

Allen Wins Turing Award

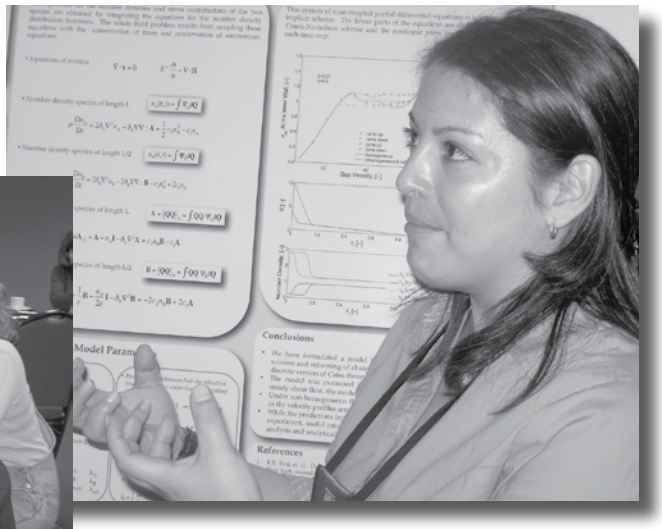
ACM, the Association for Computing Machinery, has named Frances E. Allen the recipient of the 2006 A. M. Turing Award for contributions that fundamentally improved the performance of computer programs in solving problems and accelerated the use of high performance computing. This is the first time that a woman has received this honor. The Turing Award, first presented in 1966 and named for British mathematician Alan M. Turing, is widely considered the "Nobel Prize in Computing." It carries a $100,000 prize, with financial support provided by Intel Corporation.

Allen, an IBM Fellow Emerita at the T.J. Watson Research Center, made fundamental contributions to the theory and practice of program optimization. Her work also greatly extended earlier results in automatic program parallelization, which has been used in high performance computing in areas such as weather forecasting, DNA matching, and national security functions.

In 1989, Allen was the first woman to be named an IBM Fellow. In 2000, IBM created the Frances E. Allen Women in Technology Mentoring Award, naming her as its first recipient. She is an Advisory Council Member of the Anita Borg Institute for Women and Technology, whose goal is to increase the participation of women in all aspects of technology. She received the first Anita Borg Award for Technical Leadership, presented at the Grace Hopper Celebration of Women in Computing in 2004.

AWM Workshop, New Orleans 2007

Rachel Hageman, Case Western Reserve University; Susanne Brenner, LSU; Anna Skripka, University of Missouri-Columbia; Alyson Deines, KSU; Marianne Korten, KSU



Paula Vasquez, University of Delaware — Mathematical Modeling of Wormlike Micellar Solutions

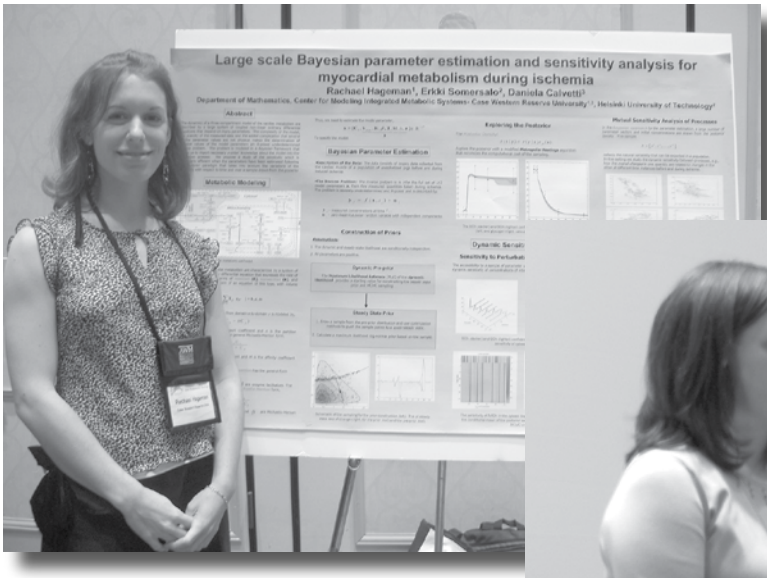
Daniela Genova, University of South Florida —Topological Properties of a DNA Computing Model — pictured with Claudia Polini, conference organizer.

Katerine Ott, University of Virginia —Transmission Boundary Value Problems in Non-Smooth Domains

Sharon Anne Garthwaite, University of Wisconsin, Madison — Ramanujan's "Very Interesting Functions": Mock Theta Functions and Vector-valued Maass-Poincaré Series

Break between talks: Alissa Crans, Loyola Marymount University; Janet Berry, University of Redland; and Erica Flapan, Pomona College

Wandi Ding, University of Tennessee — Optimal Harvesting of a Semilinear Elliptic Fishery Model



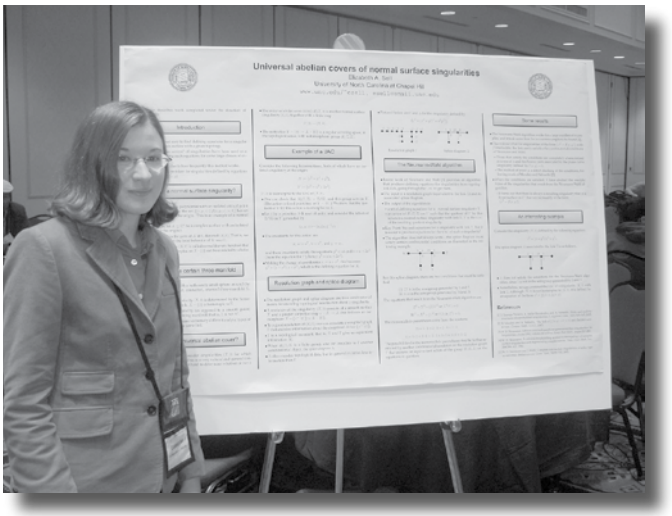
Rachel Hageman, Case Western Reserve University — Large Scale Bayesian Parameter Estimation and Sensitivity Analysis for Myocardial Metabolism During Ischema

Angela Kubena Barnhill, The Ohio State University — Nonpositively Curved Decompositions of Coxeter Groups

Julie Bergner, Kansas State University — Thirteen Ways of Looking at a Topological Group

AWM Workshop, New Orleans 2007

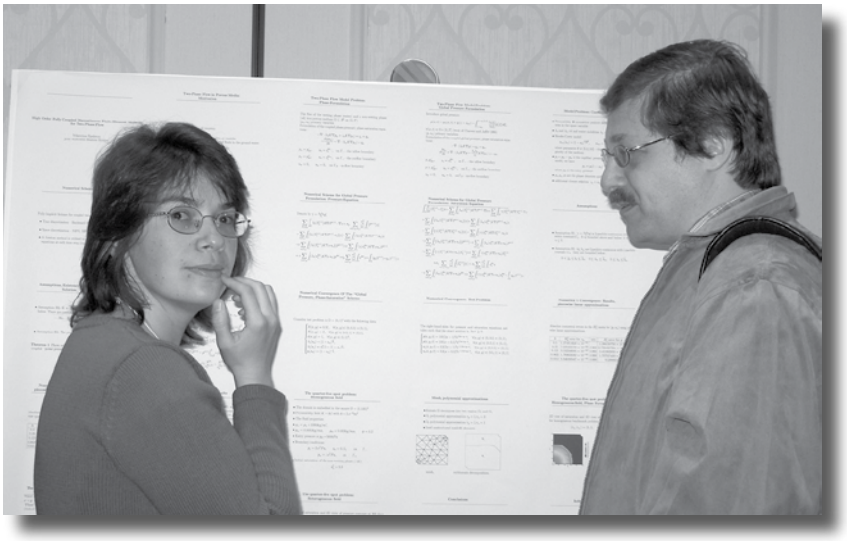
Jennifer Franko, Indiana University — Representations of the Braid Groups via the Yang Baxter Equation — pictured with Sarah Witherspoon, Texas A&M University



Elizabeth Sell, UNC Chapel Hill — Universal Abelian Covers of Normal Surface Singularities

Fumiko Futamura, Vanderbilt University — Localized Operators and the Construction of Localized Frames.

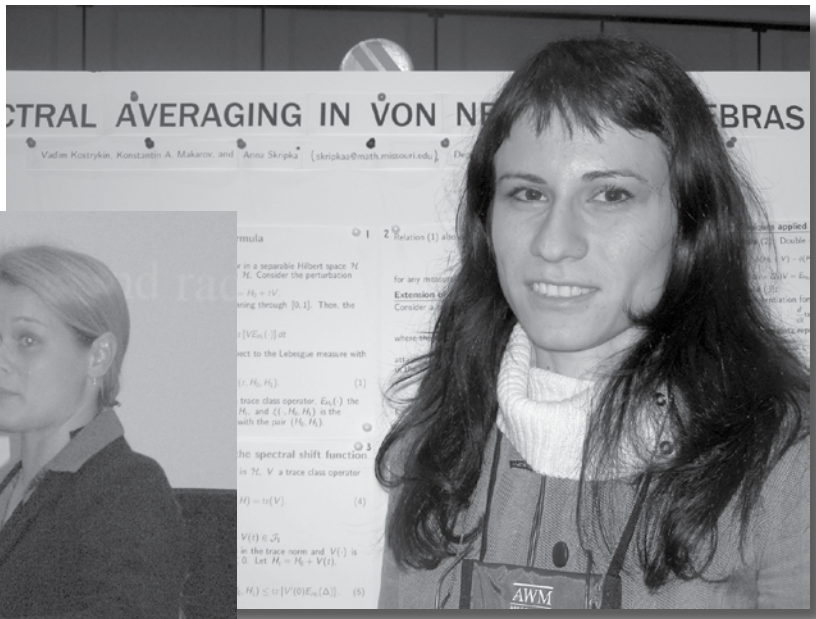
Grace Lyo, University of California Berkeley — Semilinear Actions of Galois Groups and the Algebraic K-theory of Fields



Yekaterina Epshteyn, University of Pittsburgh — High Order Fully Coupled Discontinuous Finite Element Methods for Two-Phase Flow — pictured with Alexander Kurganov, Tulane University

Mary Flagg, University of Houston — The Role of the Jacobson Radical in the Baer-Kaplansky Theorem for Torsion-Free Modules over a Complete Discrete Valuation Domain

Alissa Crans, LMU — Categorical Self-Distributivity



Anna Skripka, University of Missouri-Columbia — Spectral Averaging in Von Neumann Algebras

Amy Moore, Alma College — Diffusion Flame Stability

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

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

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

WHEN: The next AWM Workshop to be held in conjunction with the Joint Mathematics Meetings will take place in San Diego, CA, January 6–9, 2008 (Sunday–Wednesday). The Workshop is scheduled to be held on Wednesday, January 9, with an introductory dinner/discussion group on Tuesday evening, January 8.

FORMAT: Twenty women will be selected in advance of the workshop to present their work; the graduate students will present posters and the recent Ph.D.'s will give 20-minute talks. AWM will offer funding for travel and two days subsistence for the selected participants. The workshop will also include a panel discussion on areas of career development, a luncheon and a dinner with a discussion period. Participants will have the opportunity to meet with other women mathematicians at all stages of their careers. All mathematicians (female and male) are invited to attend the program. Departments are urged to help graduate students and recent Ph.D.'s who do not receive funding to obtain some institutional support to attend the workshop presentations and the associated meetings.

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

ELIGIBILITY: Applications are welcome from graduate students who have made substantial progress toward their theses and from women who have received their Ph.D.'s within approximately the last five years, whether or not they currently hold a postdoctoral or other academic position. Women with grants or other sources of support are welcome to apply. All non-US citizens must have a current US address. All applications should include a cover letter and at least one letter of recommendation from a faculty member or research mathematician who knows the applicant's work. In particular, a graduate student should include a letter of recommendation from her thesis advisor. Nominations by other mathematicians (along with the information listed above) are also welcome. For some advice on the application process from some of the conference organizers, see the AWM Web site.

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

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

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

APPLICATION DEADLINE

Applications must be received by **August 31, 2007**. Applications via e-mail or fax will not be accepted.

ADVERTISEMENTS

EAST TENNESSEE STATE UNIVERSITY — College of Arts and Sciences — Departments of Mathematics and Biological Sciences — Visiting Professor — Two Positions Contingent upon Grant Funding. The Departments of Mathematics and Biological Sciences at East Tennessee State University invites applications for two visiting positions for our program "SYMBOSIS: An Introductory Integrated Mathematics and Biology Curriculum for the 21st Century." This project is supported by a four-year $1.7M Howard Hughes Medical Institute Grant and is an exciting endeavor to reconfigure, unify and integrate the three-semester introductory biology sequence, the first semester of the calculus sequence and an introductory statistics course. Applications are invited from experienced colleagues who would like to lend their expertise to our exciting curriculum development efforts. The position would be ideal for a senior person on sabbatical leave, but applications are invited from candidates at all ranks. *Essential Functions*: Duties include, but are not limited to, writing and publishing teaching materials with an interdisciplinary team; participating in teaching and organizing the labs for the course; and disseminating the course material through the web and in workshops. Review of applications will begin immediately and continue until the position is filled. Please send ETSU application, letter of interest and curriculum vitae including two letters of reference to Jeff Knisley, Department of Mathematics, East Tennessee State University, Box 70663, Johnson City, TN 37614-1701. Electronic application packets are also welcome and may be sent to **knisleyj@etsu.edu**. Information concerning our departments may be found at **http://www.etsu.edu/math/math.htm** and **http://www.etsu.edu/biology**. For additional information, applicants may visit **http://www.etsu.edu**. AA/EOE

INSTITUTE FOR PURE AND APPLIED MATHEMATICS AT UCLA — Director — The Institute for Pure and Applied Mathematics (IPAM) at UCLA is seeking its next Director, to begin the position in July 2008. Candidates must possess sufficient scientific distinction to be offered a tenured faculty position at UCLA. Please send a CV and cover letter to **directorsearch@ipam.ucla.edu**. For fullest consideration, applications should be received by **June 1, 2007**; however, applications will be considered until the position is filled. For a detailed job description, go to **http://www.ipam.ucla.edu/jobopenings/director.html**. UCLA is an equal opportunity/ affirmative action employer.

THE UNIVERSITY OF CHICAGO

The Stevanovich Center for Financial Mathematics

Applications are invited for the following position:

Research Associate (Instructor)/Lecturer
with the Stevanovich Center for Financial Mathematics.

Outstanding candidates in the areas of Financial Mathematics/Statistics/Econometrics/Economics are welcome.

The Research Associate (Instructor)/Lecturer will have his/her appointment in the Department of Statistics or Mathematics, and will be associated with the new Stevanovich Center for Financial Mathematics.

The initial appointment is for one year, with possible renewal for an additional year.

The successful candidate, who must have a PhD by the date of the appointment, will be expected to teach one course per academic year, and is otherwise at liberty to do research. The position provides the opportunity for a new PhD to focus on his/her research.

The Stevanovich Center for Financial Mathematics is jointly operated by the Departments of Mathematics, Statistics, and Economics.

Interested applicants should send cover letter, CV, research statement and 3 letters of reference to:

Search Committee
The Stevanovich Center for Financial Mathematics
c/o Terri Rossi
5734 S. University Avenue
Chicago IL 60637

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