

AWM

ASSOCIATION

FOR WOMEN IN

MATHEMATICS

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NEWSLETTER

March-April 1992

PRESIDENT'S REPORT

It is February 1, the day the change of officers occurs. AWM's thanks go to the outgoing Members-at-Large of the Executive Committee, Sue Geller and Rebekka Struik. Jill Mesirov transforms from Past President to Former President: this latter title lasts forever, so thanks, but don't run too far, Jill — we need you! Also thanks to Martha Jaffe for her service as Clerk and to Jenny Baglivo for agreeing to assume those duties. Newly elected officers are President-Elect Cora Sadosky, Treasurer Mary Beth Ruskai, and Members-at-Large Mei-Chi Shaw and Sylvia Bozeman. Welcome aboard!

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Baltimore Harbor

Well, I never made it to the aquarium or the art museum, but nonetheless found Baltimore a very pleasant meeting site and heard rumors that the winter meetings will return there soon. The NSF-ONR Workshop started the meeting on January 7th, with talks from the post-doctoral participants and poster-talks from the graduate students [details below]. Cora Sadosky and Ruth Charney chaired the sessions and saw that the day went smoothly. I agree with the enthusiasm Cora expressed in claiming that we were hearing from our future stars.

During the box-lunch break, we had two panels. Hugo Rossi (Utah), Deborah Lockhart (NSF) and Richard Lau (ONR) discussed funding strategies and possibilities for recent Ph.D. recipients. Their wisdom and frankness about options were very much appreciated; we all took notes.

For the second panel, Lenore Blum introduced a delegation from the 1991 NSF Summer Math Institute at Mills, fresh from a mini-reunion at Penn State. This group was chaired by Cheryl Grood and included Maria Bastera, Nancy Cunningham, Rebecca Field, Kendra Hershey, Min Kang, Julie Kerr, Lisa Korf, Sunita Vatuk, and Jessica Wolpaw, each of whom spoke briefly about her summer. The presence of these undergraduates was a special treat; they occasioned more than a bit of nostalgia about being "young and in love ... with mathematics!" (Lenore: how's that for a t-shirt logo, with a photo of

AWM

ASSOCIATION FOR WOMEN IN MATHEMATICS

The Association was founded in 1971 in Boston, MA. The purpose of the association is to encourage women to study and to have active careers in the mathematical sciences. Equal opportunity and the equal treatment of women in the mathematical sciences are promoted.

The *Newsletter* is published bi-monthly. The Editor welcomes articles, letters, and announcements.

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your summer scholars?) Their remarks about the summer program were very powerful, very upbeat. Several noted that they hadn't realized how much they would value the chance to do mathematics with other women (and only women) for six weeks. They mentioned also that the summer experience had enhanced their sense of membership in the mathematical communities to which they returned.

Despite some confusion about two banquets, both the Workshop Dinner Monday and the Noether Dinner Tuesday were well attended and convivial. A special guest at the former was Olga Beaver, recipient of the second Louise Hay Award for her fantastic work with students at Williams College.

Our Executive Committee meeting, panel, business meeting, Noether dinner and party took place Tuesday. By the end of the day our new Executive Director had been literally run off her feet, and Jodi spent the rest of the meeting protecting her tricky knee in a wheelchair. Even though her knee wouldn't cooperate, Jodi managed to work many miracles as a total novice to the mathematics meetings scene and made many new friends in Baltimore. On her behalf I'd like also to thank all those of you who helped her get around, including Ollie and Janet, the members who staffed our display at the book exhibit, and AMS's Janet Baletto who always makes things possible.

But back to Tuesday: the Executive Committee had a full agenda. We set the new dues structure, effective in 1993. To give you advance warning, here are the changes: annual dues for student/unemployed/retired are \$8, regular \$25, family \$40, with add-ons for prize fund of \$5 and for general funds of \$10. This brings a basic membership to \$40, but with the understanding that \$25 will also do. (We tried to meet AWM's basic needs with a dues structure reflecting the differing circumstances of our members.) Contributing membership is set at \$100, and institutional dues are restructured, with two levels: \$80 for two free ads and up to three student memberships, and \$120 for two free ads and up to ten student memberships. Ads for non-members cost \$60 for a basic ad, and newsletter subscriptions (meant for women's studies centers, etc.) are \$30. The ad price increase will go into effect with the next issue of the newsletter. Got that? Those of you with institutional memberships at your schools, please see that they continue. Those without, please see that your school joins, pointing out the ad advantage and the benefit to students.

Meanwhile Jodi is hard at work getting our files modernized and up-to-date and solving the newsletter printer problems. Some problems will doubtless persist, problems which haunt all such organizations, but we are seeing big improvements already. Keep sending in your address corrections and reminders if things aren't right!

The Executive Committee is also working on a policy statement in which AWM supports the creation of an outside committee of mathematicians in cases of dispute between a mathematician and an academic institution. This statement will be ready for the next newsletter. The EC voted a big thanks (with flowers) to Tricia

Cross for her contributions while Executive Director and a citation (with mug) to Pam Coxson for her work in creating the first SKHS Day.

Panel on Graduate Education

The panel members were Jane Cronin Scanlon (Rutgers), Richard Ringeisen (Clemson), Lisa Traynor (SUNY-Stonybrook), and Bettye Anne Case (Florida State). My poor remarks won't do justice to theirs, and so I can only say you should have been there (and many were): Jane gave her perspective on good and bad aspects of the lives of graduate students at her large home institution, Rich described the special aspects of the Clemson program, Lisa — one of our workshop participants, and a current student of Dusa McDuff's — provided a student's perspective, and Bettye Anne gave a national perspective on several matters, including the preparation of college teachers.

Graduate education was one of several topics involving the care and feeding of mathematicians which received attention at the meetings. As the retiring MAA-president Lida Barrett pointed out, the program for this meeting showed a much broader (healthier?) range of interests than that of earlier times. (Excuse the awkward construction; I couldn't resist my only chance ever to call Lida retiring.)

Business Meeting

It was my pleasure to present the Louise Hay Award to Olga Beaver of Williams College [see article below]. Her generosity of spirit, so warmly described in the nominator's remarks, was indeed palpable. We have much to admire in and learn from her example. Next we had a surprise presentation of a citation to Lee Lorch for his work on behalf of women and minority mathematicians [again, see below], which occasioned a standing ovation for this very special person.

We also welcomed Andy Fisher from Addison-Wesley, as we announced that his company has chosen AWM as recipient of a \$2000 award in honor of George Thomas at the 40th anniversary of his calculus textbook. This money will go towards activities connected with the Schafer prize, as their (and our) way of recognizing undergraduate excellence. AWM say thanks for A-Wm (Addison-Wesley money)! (Alice Schafer and I represented AWM at the A-W reception in Thomas' honor the

next day; of course Alice knew everyone there, including Thomas and Finney.)

It was worth being in Baltimore to meet Olga Beaver and Nancy Kopell and to hear Nancy's great Noether Lecture the next morning. Such are the privileges of this job!

Future Meetings

The absence of a summer MAA/AMS meeting has left us with many meetings instead, and I hope that members attending any of them will come forward and volunteer their help, since we can't send Jodi everywhere and anyway there is only one of her (with two knees only). We will award the Schafer Prize at the SIAM meeting in Los Angeles in July, where Joyce McLaughlin is also arranging an AWM panel on mathematicians in government positions. Executive committee members are making inquiries into having an AWM table and (probably informal) activities at the joint AMS/LMS meeting, the ICME meeting, and the EMS meeting. Anyone planning to attend these and willing to participate, please tell Jodi.

We continue to grow, but not to outgrow our need for volunteer help of all kinds, which is what allows us to do many things and maintain a certain spirit. I would also urge anyone in striking distance of Wellesley to come in and give a hand for a few hours in the office; just give Jodi a call.

Future Location

Our future at Wellesley is uncertain after June 1. Jill Mesirov and Alice Schafer are looking into options in the Boston area; if you have any recommendations or ideas, please contact them or me. Well, it's been a year and I still love AWM and wish I could express things better. I promise to read *Elements of Style* before the next newsletter!

Carol

Carol Wood
Middletown, CT
February 1, 1992



AWM ANNUAL MEETING, BALTIMORE, 1992

Nancy Kopell Delivers Noether Lecture

Nancy Kopell gave an excellent talk, entitled "Oscillators and Networks of Them: Which Differences Make a Difference?" on Thursday, January 9. The work she described was motivated by applications in biology and chemistry, in which the available data are usually qualitative and incomplete. The particular applications involve networks of oscillators; the goal is to transform qualitative information about oscillators and their connections to qualitative conclusions about behavior of networks of these oscillators. Even when the size of the system is large, it is sometimes possible to do this by exploiting the structure of the system. Examples include chains of oscillators, for which the architecture imposes large constraints on the behavior.

Dr. Kopell received her A.B. from Cornell University in 1963 and her Ph.D. from the University of California in 1967. Before joining the faculty of Boston University, she was a Professor of Mathematics at Northeastern University and a C.L.E. Moore Instructor at MIT. Honors received include MacArthur, Guggenheim, Sloan, National Science Foundation and Woodrow Wilson Fellowships.

Professor Kopell uses and develops methods of dynamical systems to attack problems of applied

mathematics. She is especially interested in questions involving self organization in physical and biological systems. With L. N. Howard, she has written a series of papers on pattern formation in oscillating chemical systems. Recently, with G. B. Ermentrout, she has been concerned with developing mathematics appropriate to analyzing neural networks that govern rhythmic motor activities such as walking, swimming and breathing. Such systems are, roughly, large collections of units, each of which is an oscillator or a close mathematical relative of an oscillator. The aim of the mathematics is to help sort out which properties of the units and their interactions have implications for the emergent properties of the networks. The techniques include extensions of invariant manifold theory, averaging theory and geometric methods for singularly perturbed equations. The current work has led to the formation of a highly interactive group of physiologists and mathematicians, headed by Dr. Kopell. In addition, she is also currently interested in geometric techniques in dynamical systems. [See the December *Notices* for a fascinating article on Kopell's work with Ermentrout, "Lamprey Lingo" by Allyn Jackson.]

Olga Beaver Wins Hay Award

In August of 1990, the AWM Executive Committee passed a resolution establishing the Louise Hay Award for Contributions to Mathematics Education and stating that "while Louise Hay was widely known for her contributions to mathematical logic and her strong leadership as Head of the Department of Mathematics, Statistics and Computer Science, her devotion to students and her lifelong commitment to nurturing the talent of young women and men secure her reputation as the consummate educator. The annual presentation of this award is intended to highlight the importance of mathematics education and evoke the memory of all that Hay exemplified as a teacher, scholar, administrator and human being."

The 1992 Award was presented to Olga Beaver, Associate Professor and Director of the Summer Science Program at Williams College in Williamstown, Massachusetts.

Dr. Beaver received her B.A. and M.S. degrees from the University of Missouri in 1968 and 1969,



Nancy Kopell

respectively. She received her Ph.D. from the University of Massachusetts in 1979. She has been at Williams College since then. She is also a Williams College Gaudino Scholar.

In her role as Director and driving force of the Williams College Summer Science Program, Professor Beaver has been able to promote positive role models, both by her example and by integration of student mentors into her program. She has been noted not only for her excellence in teaching, but for her ability to bring about an "extraordinary change in spirit, not only of the minority students ... but also to other non-SSP [Summer Science Program] students."

The Award Committee consisted of Sylvia Bozeman, Spelman College; Rhonda Hughes, Bryn Mawr College; and Mary Ellen Rudin (Chair), University of Wisconsin.



Olga Beaver and Lee Lorch

Citation for Lee Lorch

To Lee Lorch, a founding member of AWM, with thanks for his activism on behalf of women and minority mathematicians.

Lee Lorch has long been known for his devotion to and activity on behalf of unpopular causes. Several years ago CCNY, one of the many institutions that fired Lee, made at least partial public amends by granting him an honorary degree. AWM would like to believe that we have always recognized and appreciated his contributions, but we do realize that we may not have made our gratitude as visible as we might. Thus we take this opportunity to remedy any oversight.

Lee and his wife, the late Grace Lorch, have been models of committed activism for generations of mathematicians and others. Their first big personal encounter with the discrimination encountered by women came when Grace was fired from her public school teaching position when they married. The segregation of the armed forces that he encountered during his World War II service was a spur to Lee's desire to combat racism.

Lee's departure from CCNY was occasioned by his leadership of a tenants' group in the fight to desegregate Stuyvesant Town, the apartment complex in which he and Grace lived. They invited an African-American family to live in their Stuyvesant Town apartment in violation of the terms of their lease. Pressure by the insurance company owners of the apartment complex was not confined to New York City so that Penn State hired Lee, not knowing what they were getting, and fired him, not appreciating what they had. The silver lining soon appeared. Lee went to Fisk University where he was able to nurture a large number of undergraduates and encourage them to continue their mathematical studies. These students make up a substantial proportion of their generation of African-American mathematicians.

The Fisk Board of Trustees did not look kindly on Lee's refusal to "cooperate" with the House Unamerican Activities Committee nor on his insistence on sending his daughter to the otherwise all-black campus school, and he was forced to move on again. He and Grace arrived at Philander Smith

College in Little Rock just as the school integration crisis arrived. Because they were prominent in support of the integration, with Grace escorting African-American students into Little Rock High, the Lorches were soon on the move again.

In spite of Lee's continued productivity in mathematics and his well-deserved reputation as an inspiring teacher and mentor, no college or university in the United States would employ him. Canada provided a refuge. Until his forced retirement because of age, which of course he fought, Lee taught at Canadian universities, mostly at York University in Toronto.

Lee's nurturing efforts have not been confined to American mathematicians. He has traveled extensively, especially in Eastern Europe and the Soviet Union, always seeking out talented mathematicians, particularly women, to assist.

Lee has often been a thorn in the side of the mathematics establishment. But then, to its credit, so has AWM. Lee's first battle with the mathematics establishment was over the Mathematical Association of America's insistence on holding meetings in segregated facilities. When AWM helped to open up the AMS Council to petition candidates, Lee was elected and pushed tirelessly on issues of special concern to women and minority mathematicians. His scorn at demands by some Council members to know the publication record of a young woman mathematician political prisoner in Argentina as a prerequisite for the AMS's asking for her release was effective in getting the organization finally to do effective work on human rights concerns.

Throughout its history Lee has been a strong supporter of AWM and encouraged its efforts to bring more women, particularly minority women, into mathematics and to assist those already in the field. He has always been there when the organization has needed him.

Although AWM has not accomplished all that we would like, that mathematics has become more receptive to women and minorities owes much to Lee. We thank him.

Citation for Pam Coxson

At its January 1992 meeting, the Executive Committee of the AWM voted to present Pamela G. Coxson with an AWM mug in recognition of her vision and leadership in initiating the Sonia Kovalevsky High School Math Days program. At

the time of the Kovalevsky research symposium in 1985, Pam insisted on simultaneously developing a program for high school students and teachers. Despite skepticism from some of us, she worked tirelessly and enthusiastically to organize the first Kovalevsky High School Math Day. Not only was that particular event extremely successful, but the program format she devised worked so well that it became a widely imitated model for subsequent Kovalevsky days. Thus, her initial effort has mushroomed into an ongoing program with far wider impact than she had anticipated. For this, we congratulate and thank her.

NSF-ONR Workshop

The NSF-ONR Workshop was a full-day event on January 7, full of mathematical excitement and ending with a well-attended dinner.

The postdocs and their talks were:

Janet Heine Barnett, University of Southern California

"Combinatorial Consequences of Martin's Axiom in Generic Extensions"

Karen M. Brucks, University of Wisconsin
"Topological Dynamics in Dimension One"

Marilyn B. Durkin, Bentley College
"Observations on the Dynamics of the Complex Cosine-Root Family"

Irene Martinez Gamba, Trenton State College
"Boundary Layer Formation in Transonic Flow"

Sarah E. Holte, University of Missouri-Rolla
"Attractors of Diffeomorphisms of the Plane Which Are Inverse Limit Spaces"

Rosa Q. Huang, University of Michigan
"On the Relationship of Various Conjectures of Latin Squares and the Straightening Coefficients"

Saeja Oh Kim, University of Massachusetts at Dartmouth
"Repairing Non-Commutative Diagrams"

Brenda J. Latka, Lafayette College
"A Question in Model Theory Leading to Results in Combinatorics"

Kathryn F. Porter, St. Mary's College of California
"Variations of Effros's Theorem"

Xiaorong Shen, Iowa State University
 "The Representation Theory of Comtrans
 Algebras"

Kathy Tomlinson, University of Wisconsin
 "An Analog to the Heat Equation in Complex
 Space Variables"

The graduate students and their poster presentations were:

Clara Chan, Massachusetts Institute of
 Technology
 "An Application of Combinatorics of Polytopes"

Kathy Dempsey, Michigan State University
 "Algebraic Combinatorics"

Donna Glassbrenner, University of Michigan
 "Intersections of Complete Intersection Ideals"

Sister Ann Heath, Bryn Mawr College
 "Analytic Number Theory: Dirichlet Series with
 Associated Functional Equations"

Mary Ann Horn, University of Virginia
 "Exact Controllability and Uniform Stabilization
 of Partial Differential Equations"

Lynn Kiaer, Florida Institute of Technology
 "Discrete Optimization Strategies for
 Timetabling"

Lisa Langsetmo, Northwestern University
 "The K-Theory Vocalization of Loops on an
 Oddsphere"

Christine McMillan, University of Virginia
 "Control Theory for Partial Differential
 Equations"

Francine Meylon, University of California,
 San Diego
 "The Schwartz Principle"

Wenxian Shen, Georgia Institute of Technology
 "Dynamical Systems and Non-Linear Studies"

Lisa Traynor, State University of New York at
 Stony Brook
 "Symplectic Topology"

Thanks to all for a great day!

AWM MAILINGS

We send out so many booklets and so much information from the Wellesley office that we must begin asking you to cover some of the postal costs. We are asking for 20¢ postage for each booklet requested (*Careers that Count*, the Noether booklet, etc.) and for 29¢ (or a stamp) for each request for information (bibliographies, etc.).

It would help even more if each request were accompanied by a self-addressed stamped envelope, which should be 8-1/2 by 11 for booklets and business-size for other information. Not only will it save AWM money, but it will save valuable time in the office (we have been receiving about 15 requests *per day* for CTC: we're happy to get them, but the handling time really adds up!).

NSF-AWM TRAVEL GRANTS FOR WOMEN

The NSF-AWM Travel Grants program has recently been renewed for three years.

The objective of the NSF-AWM Travel Grants is to enable women to attend research conferences in their field, thereby providing a valuable opportunity to advance women's research activities, as well as to increase the awareness that women are actively involved in research. If more women attend meetings, we increase the size of the pool from which speakers at subsequent meetings are drawn and thus address the problem of the absence of women speakers at many research conferences.

The Travel Grants. The grants will support travel and subsistence to a meeting or conference in the applicant's field of specialization. A maximum of \$1000 for domestic travel and of \$2000 for foreign travel will be applied. International travel must be on U.S. flag carriers.

Eligibility. Applicants must be women holding a doctorate in a field of research supported by the Division of Mathematical Sciences of the NSF (or have equivalent experience). A woman may not be awarded more than one grant in any two-year period and should not have available other sources of funding (except possibly partial institutional support).

Target Dates. The three award periods have deadlines of February 1, May 1 and October 1.

Applicants should send *five copies* of their application, which consists of a description of their current research and of how the proposed travel would benefit their research program, a curriculum vita and a budget to: Association for Women in Mathematics, Box 178, Wellesley College, Wellesley, MA 02181.

CALL FOR NOMINATIONS! ALICE T. SCHAFFER MATHEMATICS PRIZE

The Association for Women in Mathematics calls for nominations for the Alice T. Schaffer Mathematics Prize in the amount of \$1000 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. The letter of nomination should include, but not be limited to, an evaluation of the nominee on the following criteria: quality of performance in mathematics, exhibition of real interest in mathematics, ability for independent work, and performance in mathematical competitions at the local or national level, if any.

Supporting materials should be enclosed with the nominations. Please send *five copies* of the letter and other materials. Nominations should be postmarked no later than **April 30, 1992** and sent to Jodi L. Beldotti, Executive Director, AWM, Box 178, Wellesley College, Wellesley, MA 02181; (617) 237-7517.

EUROPEAN WOMEN IN MATHEMATICS

Brief report on the fifth annual EWM meeting, CIRM, Luminy, France, December 9-13, 1991

The meeting was attended by 49 participants from nineteen countries (Belgium, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Turkey, Ukraine).

The meeting was organized by a committee consisting of Michèle Audin (France), Eva Bayer (France), Bodil Branner (Denmark), Capi Corrales (Spain), Cathérine Goldstein (France), Annette Grabosch (Germany), Ragni Piene (Norway), Marie-Françoise Roy (France), Caroline Series (Great Britain) and Laura Tedeschini Lalli (Italy).

The meeting had three main parts.

Mathematical Program

There were series of talks on three mathematical themes that were aimed mainly at the non-specialists in the area:

1. Symplectic geometry: Speakers: Michèle Audin, Dusa McDuff, Yvette Kosmann-Schwarzbach;
2. Mechanics and partial differential equations: Speakers: Colette Guillopé, Claudy Cancelier, Marina Vidrascu;
3. Algorithms: Speakers: Mariemi Alonso, Marie-Françoise Roy, Brigitte Vallée.

Also, women with common mathematical interests formed informal small groups for mathematical discussions on dynamical systems, number theory, complex analysis and algebra.

In addition, there were two talks about famous women mathematicians:

1. "The life and work of Sonia Kowalewskaya," by Jacqueline Détraz, and
2. "Portraits of women mathematicians," by Magdalena Jaroszevska.

General Discussions

Many discussions about the situation of women in mathematics took place in Luminy, starting from our own, often surprisingly similar experiences, in very different countries. Among many others, topics have been the different experiences of men and women in seminars, role models, and possible future actions of EWM. The starting point for the discussion on role models was a talk given by Claudine Laville, who is a mathematician and psychoanalyst.

Organization of EWM

Since the beginning in 1986, the number of women interested and active in EWM has grown so much that we felt EWM should be put on a more formal and legal basis. At the meeting in Luminy we agreed on the principles of the constitution of EWM and on the organizational structure. A

committee was elected to investigate the legal position and draft a detailed proposal which will be brought to the next general meeting.

The next meeting of EWM is planned to take place in Warsaw (Poland) in May or June, 1993. Anna Romanowska is in charge of the organization of the meeting. Her address is: Mathematical Institute, Warsaw Technical University, Plac Politechniki 1, 00661 Warsaw, Poland, tel. 406596, email: AROMAN@PLWATU21.BITNET.

Also, there will be a "Round Table on Women in Mathematics" at the European Congress of Mathematics in Paris, July 1992, organized by the EMS, in which some of us will take part. Contact Eva Bayer, Equipe de Mathématiques, U.F.R. des Sciences et Techniques, 16, Route de Gray, 25030 Besançon Cedex, France, tel. 33-81666322, email: BAYER@FRGREN81.BITNET.

For further information, contact your regional coordinator (if possible) or one of the international coordinators: Marketa Novak, Department of Computer Science, Chalmers University of Technology, 41296 Göteborg, Sweden, tel. 31-721090 (from April 1992: 7721090), email: NOVAK@CS.CHALMERS.SE; or Capi Corrales, Departamento de Algebra y Fundamentos, Facultad de Ciencias, Universidad Complutense de Madrid, 28040 Madrid, Spain, tel. 1-3520696, email: CAPI@EMDUCM11.EARN; or Marie Demlová, Department of Mathematics, Faculty of Electrical Engineering, Czech Technical University, Technick 2, 16627 Praha 6, Czechoslovakia, tel. 42-2-3323587, email: DEML@CSEARN.BITNET.

Finally, donations can be sent to Caroline Series, Mathematics Institute, University of Warwick, Coventry CV4 7AL, Great Britain, as cheques payable to EWM, or to Geneviève Allain, Centre de Mathématiques Appliquées, Ecole Polytechnique, 91128 Palaiseau Cedex, as cheques payable to "Femmes et Mathématiques."

EWM and the European Mathematical Society

As readers may know, the European Mathematical Society was founded at an inaugural meeting held in Warsaw from 27th-29th October 1990, under an initiative of thirty-three European mathematical societies ranging from Portugal to Georgia and from Finland to Italy. The society aims to establish a sense of identity amongst European

mathematicians, to concern itself with the relations of mathematics to society, to be involved in mathematical education and to promote research in pure and applied mathematics.

Readers will also no doubt be aware that this European spirit has already been foreshadowed by the formation of EWM, European Women Mathematicians, following the International Congress in Berkeley in 1986. It has been our experience that despite the enormous differences of culture, language and circumstances, there is indeed a specifically European identity, and we are pleased at the various ways in which this spirit has already been fostered by our group.

Several EWM members will be active in the organization of EMS. Although there were no women among the 60 representatives at the foundational meeting in Warsaw, Eva Bayer has been invited to be one of the officers of the 10 member executive council. One of the major activities of EMS will be to organize a European Congress of Mathematics every four years, to alternate with the International Congresses. The first congress will take place from July 6-10th, 1992, in Paris. There are three women on the organizing committee; besides Eva, they are Marie Françoise Roy, the secretary of Femmes et Mathématiques, the French branch of EWM, and Nicole El Karoui. There are also two women on the scientific committee which will choose the mathematical speakers, Ingrid Daubechies, who is Belgian and works at Bell Labs, and Frances Kirwan from England.

During the Congress there will be a program on "Mathematics and Society" with about 15 round tables on subjects like "Popularization of Mathematics" and "Maths and Industry." One of these round tables will be on "Women and Mathematics." A committee of EWM is now preparing topics for this discussion. Through EMS, we have already done a survey of the numbers of women at different levels in mathematics across Europe, and have come up with some extremely interesting and unexpected results, which will be presented at the meeting. We hope to follow this up and obtain more detailed information about the situation of women mathematicians, both students and professionals, and about programs to encourage them, in the different member countries. In fact one of the most interesting things to come out of our EWM meetings altogether are the enormous differences between the numbers of, and attitudes towards, women mathematicians across Europe (and, in so

far as we have information, elsewhere in the world). It would be extremely interesting to follow this up with a more systematic study and an analysis of possible cultural and historical explanations. Maybe a good Ph.D. topic for someone out there?

EWM just had its fifth meeting, reported on above (a longer report will be appearing in due course, and anyone wishing to obtain copies should contact Sandra Hayes, Davidstrasse 2, 8000 Munich 81, Germany). This was a very interesting and successful meeting, despite problems of uncertainty about funding. It was particularly good that we had a strong contingent from the former eastern bloc countries, so that we now have a network that stretches from Lisbon to Moscow, from Helsinki to Patras, and from Oslo to Kharkov and beyond. The next meeting is being planned for 1993, and we hope from then on to arrange EWM meetings every other year, to fit in between the International and European congresses.

both articles by Caroline Series, Mathematics Department, Warwick University, Coventry

IN MEMORIAM

Nancy Cole, Associate Professor Emeritus of Syracuse University, died on July 7, 1991, at the age of 89. She was a member of the American Mathematical Society for 62 years.

Rear Adm. Grace Murray Hopper, retired, a mathematician and pioneer in data processing who was a legendary figure among both computer scientists and industry executives, died New Year's Day at her home in Arlington, Va.

Admiral Hopper, who was 85 years old, had been in ill health recently, family members said, and died in her sleep, apparently of natural causes.

She had been in the Navy, as an active-duty officer or as a reservist, since World War II, and received a special Presidential appointment to the rank of rear admiral in 1983. In 1982 ... Admiral Hopper became the oldest officer on active duty in the armed service, which she remained until retiring ... in 1986.

Admiral Hopper made several vital contributions to the development of modern computing systems,

including helping invent the Cobol programming language, which is still in widespread use in business.

In September, President George Bush awarded her the National Medal of Technology.... She was the first woman to receive the award individually.

At the time of her death she was a senior consultant to the Digital Equipment Corporation. She joined Digital in 1986, shortly after her retirement from the Navy....

Admiral Hopper was born Grace Brewster Murray on December 9, 1906, in New York City. After receiving a Ph.D. in mathematics from Yale, she taught math at Vassar College, her alma mater, where she later became an associate professor. She was divorced in 1945 but kept her married name.

In 1949 she worked as a mathematician at the Eckert-Mauchly Corporation.... Eckert-Mauchly was then building the Univac I, the first commercial computer....

Earlier, in 1943, Dr. Hopper had joined the Navy. As a lieutenant assigned to the Bureau of Ordnance Computation Project at Harvard University, she worked as a programmer on a calculating device called the Mark I, a precursor of electronic computers.

Leaving the Navy in 1946, she remained at Harvard as a faculty member in the computation laboratory. She continued to work on early Navy computers and maintained her Naval career as a reservist. Although retired from the Navy reserve in 1966, then-Commander Hopper was recalled within a year to active duty to oversee a program to standardize the Navy's computer programs and languages.

In 1962, she was elected a fellow of the Institute of Electrical and Electronic Engineers. In 1969, the Data Processing Management Association selected her as its first computer sciences "Man of the Year."

Her work led to the first practical compiler for modern computers....

She is survived by a brother, Dr. Roger F. Murray II of New Hampshire, and a sister, Mary Murray Westcote of New Jersey.

excerpted from The New York Times, January 3, 1992, "Rear Adm. Grace M. Hopper Dies; Innovator in Computers Was 85" by John Markoff

Ed. note: I'll always remember Hopper's clock that ran counterclockwise, to remind us to look at familiar things in fresh ways (and to shock us a little, too!).

INTERIM TREASURER'S REPORT, FY 91/92

ASSETS as of June 1, 1991

Operating Funds & Reserve Funds	\$40,794.15
Washington Water Power, 5 shares valued at	\$111.88
ATSchafer Prize Fund	\$25,000.00

INCOME:

Dues – Individual	\$11,299.50	
Student	1,143.00	
Retired	40.00	
Family	950.00	
Institutional & Affiliate	7,468.00	
NSF Travel & Workshop Grants	25,000.00	
Exxon Grant for AWM	5,000.00	
ONR Workshop Grant	8,500.00	
ATSchafer Prize Fund Contributions	180.00	
Advertising	635.00	
Contributions	1,992.80	
Publications	3.90	
Careers That Count	695.50	
Interest/Dividends	1,281.05	
Miscellaneous	418.00	
ATSchafer Prize Fund Interest	764.50	
TOTAL INCOME		\$64,606.75
Operating & Reserve Funds (2)		\$764.50
ATSchafer Fund		

EXPENSES:

Wages, FICA & Benefits for Executive Director (1)	\$11,222.46	
Office Assistance (1)	2,310.95	
Other Operating Expenses (1)	5,572.76	
Newsletter Printing	7,811.00	
Bulk Mailing	2,123.87	
Meetings Expenses (1)	1,025.40	
Dues and Fees	250.00	
NSF Travel & Workshop Grants Expenses	15,454.52	
ONR Workshop Grant Expenses	13,197.31	
Exxon Resource Center Grant Expenses	9,502.36	
Miscellaneous	111.83	
CTC: Printing	3,500.00	
Schafer Prizes	1,100.00	
SKHSDay Awards	600.00	
TOTAL EXPENSES (2)		\$73,782.46

BALANCES

Operating & Reserve Funds	\$31,618.44
ATSchafer Prize Fund	\$25,764.50

(1) Amounts are less expenses charged to NSF, ONR and Exxon Grants.

(2) Income/expenses excluding special-purpose grants: \$31,106.75/\$35,628.27

Respectfully submitted, Jenny A. Baglivo, Mathematics Department
Boston College, Chestnut Hill, MA 02167

GREETINGS FROM THE WELLESLEY OFFICE

It has been, and continues to be, quite a challenge to learn all I need to know and to do what needs to be done in my new job as Executive Director here at AWM. I'm excited about the job and the possibilities, but appreciate your patience with my "learning curve." I want to answer all your requests, and hope that you will have patience while I work on the backlogs of work that have accumulated. Eventually I'll get to all of them!

I really enjoyed meeting so many of you in Baltimore. The feedback indicates that the Workshop and other events were roaring successes. A special thanks is due to Rebekka Struik for her help in staffing the Registration Table and to all the volunteers who helped staff the Information Table, including Janet Barnett, Olga Beaver, Karen Brucks, Rhonda Datcher, Lynn Durkin, Mary Flahive, Irene Martinez Gamba and her husband, Donna Glassbrenner, Mary Ann Horn, Rosa Huang, Brenda Latka, Christine McMillan, Catherine Roberts, Therese Shelton, Wenxian Shen, Kathy Tomlinson, Yu Chuen Wei, and Carol Wood. Thanks also to Olga and Therese for wheeling me around. If I have left anyone's name out, thanks to you too!

The Information Table was a very busy place. Many folks stopped by to ask questions and pick up literature (three boxes worth), and over 50 people became new members on the spot. It also provided a good chance for some networking.

We hope to have an Information Table at the SIAM Conference in July and need volunteers to help staff it. This easy and fun way to help AWM can take as little as an hour of your time, and you *don't* have to be an "expert" on AWM to do it. There are written procedures to help you handle any request you may find yourself facing. If you're interested, please contact me at the office.

There have been more changes at the office this month. Katherine Moore, a Wellesley senior who has done great work for us these past two years, has left for a great job opportunity. We are glad she was chosen for it but will miss her very much. Thanks for everything, Katherine, and the best of

luck in your future endeavors. Also, I would like to welcome my two new assistants, Ashima Aggarwal and Juanita Gutierrez, on board.

In addition, Wellesley is installing a new phone system sometime soon. We don't know our new number yet; watch for the announcement in the next newsletter. In the meantime, please use the (617) 237-7517 number instead of the college line, as incoming calls on that line destroy any email that is being processed at the time. We have call waiting and a new answering machine now, so it should be easier to get through (I apologize if you have left a message recently that wasn't answered — I probably didn't get it).

I received a call recently from someone who wondered if there were any mentoring networks around for someone who is a Ph.D. in biostatistics and who is not in academia. I don't know of any, but thought one of you might. Please let me know if you do.

One final item: we have a wish list for the AWM office. Carol has already mentioned in her report that I would *love* to have members in the area stop by and help in the office, for an hour or two or a day or two or (my dream) on a regular schedule. Give me a call when you're available. The equipment donation from IBM will help lead us into the 21st century, but in this high-tech age there is always additional equipment that will make the office ever more efficient. To name just two items, a notebook computer would enable me to work at conferences, on the train and plane, at home, etc., and a fax machine would save a day on receipt of most faxes and could travel to our new location. Call me for more details if you know of sources for donations or would like to donate equipment or funds.

Well, again, I want to thank all of you for your comments and your patience. I enjoy hearing from you and helping AWM achieve its goals!

Jodi Beldotti, Executive Director

AD RATE INCREASE: This is just a reminder that the ad rates are going up, effective with the May-June issue. The basic rate will be \$60 an ad. This is still one of the cheapest ad rates around.

HONORS AND AWARDS

CONGRATULATIONS to all the women listed below for their meritorious achievements!

The following current or former members of the AWM Executive Committee have been elected to office in the AMS: Linda Keen, Vice-President; Ruth M. Charney and Rebecca Herb, Members-at-Large; Maria M. Klawe, Trustee; Carol S. Wood, Nominating Committee; and Bhama Srinivasan, Editorial Boards Committee. See the January *Notices* for a call for suggestions for candidates for the 1992 election and information on nominating candidates by petition.

Suzanne Lenhart has been awarded an NSF Research Experiences for Undergraduates grant for a summer mathematics research program at the University of Tennessee in Knoxville. In summer 1992, the program dates are June 1-July 24. Twelve students will be involved in a variety of research projects, covering a range of applied and pure math topics. Two short courses will be given — one on control theory and one on sampling techniques. The program is partially supported by the University of Tennessee Science Alliance. Two students will be able to do their projects at Oak Ridge National Laboratory near Knoxville.

Lynn Kiaer of the Florida Institute of Technology, who is studying discrete optimization strategies for timetabling, and Sylvia Williamson of Emory University, who is studying fixed-point properties in ordered sets, have both received dissertation fellowships from the American Association of University Women (AAUW). Four women in the mathematical sciences received AAUW selected professions fellowships: Catherine Axtell, Purdue University, statistics; Elizabeth Bradley, Massachusetts Institute of Technology, nonlinear dynamics; Linda Garant, Tufts University, mathematics; and Susan Zarzeczny, University of California at Berkeley, statistics.

Joyce Justicz and her co-authors Edward Scheinerman and Peter Winkler received Lester R. Ford Awards from the MAA for their paper "Random Intervals," which appeared in the *American Mathematical Monthly*, 97 (1990): 881-889. Justicz is a graduate student currently on leave from Emory

University. The paper answers this question: in a set of n random intervals, what is the chance that one of the intervals intersects each of the others? Says the Ford Committee: "After solving their original problem by integrating a probability distribution, the authors treat us to a true gem. There is a rational number that answers their questions and is independent of n . This inspired them to find an elegant, combinatorial proof, avoiding any analytic computation, thereby demonstrating anew the interplay between various areas of mathematics."

Nine mathematical scientists have received Faculty Awards for Women from the National Science Foundation. The awards are intended to recognize the accomplishments of women in research and teaching and to provide them with funding to facilitate their further development as leaders. Each award consists of a grant of \$50,000 per year for five years to support the awardee's research activities.

The awardees are: Marsha Berger, Courant Institute, New York University, numeric and symbolic computation; Mei-Chau Chang, University of California at Riverside, algebra and number theory; Margaret Cheney, Rensselaer Polytechnic Institute, applied mathematics; Shafira Goldwasser, Massachusetts Institute of Technology, computer and computation theory; Sue Leurgans, Ohio State University, statistics; Regina Y. Liu, Rutgers University, statistics; Anna Nagurny, University of Massachusetts at Amherst, applied mathematics; Vijaya Ramachandran, University of Texas at Austin, computer and computation theory; Ruth J. Williams, University of California at San Diego, statistics; and Lai-Sang Young, University of Arizona, geometric analysis.

Grace Murray Hopper, U.S. Navy, and Mary Ellen Rudin, University of Wisconsin, were elected to the American Academy of Arts and Sciences.

Carol Anne Bauer, Professor of Mathematics at Triton College, River Grove, Illinois has been awarded the 1991 Distinguished Service Award by the Illinois Section of the MAA.

Sonja Sandberg is a 1991-92 Science Scholar at the Bunting Institute of Radcliffe College. She is an Associate Professor at Framingham College; her project title is "Understanding Lyme Disease Using Mathematical Models."

She will develop a mathematical model for the life cycle of the deer tick, the agent which transmits Lyme disease to humans. Using this model, levels of infection among the ticks and their various hosts will be described. The risk of infection to people will be considered. The effect of control programs, such as decreasing the deer population, will be explored using computer simulations.

Regina B. Brunner, Associate Professor, Mathematics and Computer Science, Cedar Crest College, Allentown, PA, was the Convocation Speaker at the 1991 Fall Convocation at her college. At that time, she received both the 1991 Sears-Roebuck Foundation Teaching Excellence and Campus Leadership Award for resourcefulness and leadership as a private college educator and the 1991 Faculty Award Winner for Teaching Excellence and Leadership awarded by the Cedar Crest College Alumnae Association.

For AWM, she serves as the Pennsylvania reporter for the Education Committee. For the past four years, she has been the director of MathConn, a mathematics day for seventh and eighth grade girls and their teachers in East Central Pennsylvania. MathConn 92, the Fourth Mathematics Awareness Day, will be held April 14 at Cedar Crest College.

Judit Polgar, of the chess-playing Polgar sisters, has recently become the youngest chess grandmaster ever, beating Bobby Fisher's record. Another "theory" bites the dust!

HAPPY BIRTHDAY, TERESA!

Teresa Cohen, Professor Emeritus, Penn State University, turned 100 on Valentine's Day this year. Currently she is living in a nursing home in Pikesville, Maryland. Judy Green, representing AWM, and Florrie Fasanelli and Jim Leitzel, representing MAA, have visited her to convey our birthday greetings on her centennial.

1 0 0 !

BOOK REVIEW

Rather than a book review, this column gives some information on an interesting report written by the computer scientist Ellen Spertus.

About a year and a half ago, I solicited information for a report I was writing exploring the reasons for women's underrepresentation in computer science. The report has gone through several revisions and has now been completed as an MIT Artificial Intelligence Lab tech report. It is also available electronically. Information on how to obtain the report appears at the end of this message.

It would be impossible to summarize a 100-page report here, but I'll try to give a flavor. The aim was to summarize other writings in the area of women and technology and to collect up-to-date information on how women are being treated, as well as to make recommendations. My conclusion is that there are many different factors that have the effect of deterring girls and women from technical fields even though no conspiracy exists of people intentionally trying to discourage them.

Some of the topics covered are given below.

Many high school teachers and guidance counselors still discourage women from technical fields. One study found that when given artificial case studies where only the sex varied of a hypothetical student, high school teachers were more likely to advise male students than female students to take courses that would prepare them for post-secondary institutions. [For references, please refer to the complete document.]

Another publication describes as not uncommon the following quote from a high school guidance counselor:

Sure I'm for the AP [Advanced Placement program] in general, but not for encouraging girls in science necessarily.... There are men with Ph.D.'s in physics all over the place who can't get jobs. Why should we encourage girls? Why, if they're successful, they'd be taking jobs away from men who need them.

Subconscious bias — where people treat men and women differently without being conscious of it — is common. Studies have found that women are interrupted much more than men, faculty members make eye contact with male students more often than with female students, and women are asked fewer questions than their male classmates. Even worse:

[a]rticles supposedly written by women were consistently ranked lower than when the very same articles were thought to have been written by a man. In a similar study, department chairs were asked to make hypothetical hiring decisions and to assign faculty rank on the basis of vita. For vitae with male names, chairs recommended the rank of associate professor; however, the identical vita with a female name merited only the rank of assistant professor.

Women tend to have lower self-confidence than men. For example, when male and female college students were asked to predict their midterm test score before taking it, men had higher expectations for themselves than women did for themselves, even though the two groups actually performed the same. In a 1976 article, a Columbia professor was quoted:

I learned last year, to my astonishment, that for about four years running the honors calculus course had been all male, in spite of the fact that admission was based on an open competitive examination. This fall, one of the senior mathematics majors and myself made an intensive effort to encourage women to try the exam! The typical answer was, "I know I won't pass it" — to which we replied over and over, "Well, if you try it, at worst you will confirm what you already know, and only an hour of time will have been lost." After three days of such advising, the big day came, the exam was given, and this year the class has five men and five women!

In classrooms, conferences, trade shows, and work places, sexist humor makes women feel demeaned. As one female computer science professor wrote:

When I was in graduate school, the professor in automata theory introduced the topic of decomposition by saying: "Machines are a lot like women — many forms for the same function (wink, wink)." As the only woman in the class, you can imagine that I felt terrific. And all of a sudden the guys sitting next to me sort of tensed up — instead of a fellow student, his remark had made them see me as something else, something kinda dirty.

Additionally, computer executive Mary Rich reports that when she attended the National Computer Conference:

male attendees outnumbered the female ones by a ratio of 300 to 1 [and] convention officials as well as hotel staffs were extremely suspicious of single

women. Women were often suspected of being prostitutes trying to solicit show attendees. Rich said she once tried to go to the hotel room of a colleague for a drink only to be kicked out by security when trying to get in an elevator.

For information on receiving the bound version of the report, contact publications@ai.mit.edu with your mailing address (to compute shipping costs) and a request for AI TR 1315.

The report is also available electronically from <ftp.ai.mit.edu:pub/ellens> in the following formats: DVI: whole-paper.dvi (330K); compressed DVI: whole-paper.dvi.Z (166K); Postscript: womcs1.ps, womcs2.ps, ... womcs8.ps (1384K); and ASCII: whole-paper.tty (264K). (The ASCII version is not recommended, due to its necessarily poor formatting.)

In order to use anonymous ftp, do the following: 1) Type: "ftp ftp.ai.mit.edu", or, if that fails, "ftp 128.52.32.6". 2) At login prompt, type: "anonymous". 3) For password, enter your user name (or any string). 4) Type: "cd pub/ellens". 5) If you are transferring the dvi or dvi.Z format, type "bin". 6) Type: "mget womcs*.ps", "get whole-paper.dvi" "get whole-paper.dvi.Z" or "get whole-paper.tty".

If you have access to a Postscript printer but not ftp, send me a request, and I will email you the Postscript version of the report.

*Ellen Spertus, Artificial Intelligence Lab
MIT, Cambridge, MA 02139
ellens@ai.mit.edu*

Book Review Editor:

*Cathy Kessel
2803 Parker, Apt. 2
Berkeley, CA 94704*

QUERY

We would like to have a listing of summer programs in math for mathematically talented students available from our Resource Center. If you know of any, please send the name of the program, contact person, and any restrictions (sex, state residence, minority, etc.) to Jodi Beldotti.

EDUCATION COMMITTEE

This report is in two parts. Part I, contributed by Kathryn B. Rowe (Director, Office of Education, American Statistical Association) presents information about the ASA's Center for Statistical Education (CSE) and its role in implementing recommendations for the inclusion of statistics in elementary math education (K-12). Part II describes international efforts in this area and is excerpted from the Newsletter of the International Association for Statistical Education (Mary H. Regier, Editor, Case Western Reserve University).

The Role of the Center for Statistical Education in the Development of the Modern Mathematics Curriculum

The Center for Statistical Education was a vision of the American Statistical Association and the National Council of Teachers of Mathematics (ASA/NCTM) committee on the curriculum in statistics and probability. The ASA Board of Directors made that vision a reality in 1985 with the creation of the Center for Statistical Education (CSE).

Virtually every report on the status of mathematics education in the United States urges the inclusion of statistical and probabilistic skills and concepts for all students, grades K-12. The result is that amidst the profound changes taking place in the K-12 mathematics curriculum there is now an increased emphasis on statistics and probability as strands throughout the curriculum for all students. The American Statistical Association is instrumental in fostering this goal through its Center for Statistical Education and the ASA/NCTM Joint Committee.

CSE's Mission: Statistics and Probability as an Integral Part of Education

Over the past 25 years, ASA with the support of NCTM and funding from the National Science Foundation has helped provide the basis for the statistics strand developed for the NCTM Curriculum and Evaluation Standards. Using the QL Projects as a foundation, the Standards have carefully delineated strands in statistics and probability throughout the math curriculum with emphasis upon modeling from data in other areas. To significantly raise the quantitative literacy of this and future generations, CSE provides outreach — keeping abreast with how statistical and mathematical education is being restructured, with the need for curriculum materials in the area of statistics and probability and for

planning for the development of the new material based on the assessment of needs. Some recent projects are:

QL III Project. In January 1991 the ASA proposal "A Data-Driven Curriculum Strand for High School Mathematics" became a three-year grant funded by NSF. It is teacher oriented, with planned outcomes in scope and sequence, modules, identified materials, and teacher workshops, all for a data analysis strand incorporating real world applications of data analysis into the traditional curriculum of algebra, geometry, trigonometry, and functions materials and methods.

QL IV Project. This project provides a means for introducing data analysis skills at the elementary level. Funded as a three-year project in May 1991, the ASA proposal "Quantitative Literacy in the Elementary Curriculum" will produce a workshop package that any school or district can use as a staff development vehicle to implement effectively and accurately a QL strand into its curriculum.

QL Project V. In a 1989 report, the National Commission on Social Studies stressed that numeracy is important for a nation expecting to compete in a global economy fueled by information technology. Society can no longer depend solely on the mathematics teacher to prepare our children to think quantitatively, but QL, enhanced by the usage of technology, is virgin territory for the social science/studies teacher and the school-based administrator whose involvement is pivotal. Sharing this view, the ASA has proposed the infusion of technology in the social science secondary school curriculum: base-level quantitative literacy enhanced by the usage of technology — statistics, probability, graphics, data analysis, and other related topics. This proposal has been submitted to NSF and is now under review.

ASA/CSE Quantitative Literacy Workshops

One tangible contribution has been the highly successful ASA/QL Workshops which were developed and initiated with the generous support of two National Science Foundation grants. The workshops are designed to promote professional development among secondary school teachers of mathematics while preparing them for the instruction of data analysis in the classroom. Exploring data, probability, simulation, and an introduction to inference through sampling and surveys are the topics discussed. Techniques for teaching the topics are modeled by the QL team. Time is provided

to discuss the integration of the materials into the mathematics curriculum. The participants work on projects and are given opportunities to investigate computer software and the use of calculators. Each workshop is conducted by at least one statistician and two classroom teachers, and a follow-up session during the school year allows for reinforcement and individual support.

Summary

The CSE, with the help of ASA's 78 Chapters and 15 Sections, is now a dynamic entity that provides among its activities ASA/QL Workshops for teachers; three national K-12 student competitions; speakers for national, state and local meetings and also for the classroom; and regional support for groups of practicing teachers, school administrators, and statisticians. CSE provides training and support systems for the implementation of a creative introduction to modern statistics and probability for the mathematics classroom — for the teacher, the student, and the school-based administrator, with expansion into other quantitative disciplines planned.

CSE believes that all students should be familiar with statistical and probabilistic reasoning and gain understanding of the variability of all processes. We believe that this can be accomplished through properly trained teachers using effective classroom techniques, activities, and materials — specifically, real data and hands-on experience — teaching from the concrete, to the pictorial, to the abstract. CSE is dedicated to the vision that quantitative literacy is not just possible but probable, fundamental, and necessary.

Kathryn B. Rowe

Conferences on Teaching Statistics in the Schools

ISI Round Table Conference (August 10-14, 1992)

A conference on the theme "Introducing data analysis in the schools: Who should teach it and how?" will be held at Bishop's University in Lennoxville, Quebec, Canada. The organizer is Lionel Pereira-Mendoza of the Memorial University of Newfoundland, Canada. Among the topics to be discussed are: Goals of data analysis — what is appropriate for schools; The current situation — implications for the future; Are there unique approaches to teaching data analysis, and who

should teach it?; Primary to secondary — content and methodology; Research needs in the next 5-10 years; and What advice can we give the profession?

Statistics at ICME-7 (August 17-23, 1992)

The 7th International Congress on Mathematical Education will be held at Université Laval, Quebec, Canada. There will be a session dealing specifically with introductory statistical education at the school and college level. The organizer, Richard Scheaffer (University of Florida), describes the session as follows: This session will include discussions of current trends in teaching statistics from around the world, the interrelation between statistics and mathematics at this level, uses of technology, and statistics as a laboratory science.

In-Service Conferences for Swedish Teachers

The Swedish National Committee for Statistical Education has organized conferences (aimed at school math teachers) dealing with the teaching of statistics at the school level. This has been done in collaboration with the Swedish Mathematical Association. In Swedish upper secondary schools, statistics is a compulsory part of the mathematics curriculum.

Regier, Mary H., editor. Newsletter of the International Association for Statistical Education vol. 15, nos. 2 and 3.

American Statistical Association Publishes Guidelines for Teaching Statistics

The American Statistical Association's Center for Statistical Education has released *Guidelines for the Teaching of Statistics: K-12 Mathematics Curriculum*. The publication asserts that many mathematics educators now agree that statistics and probability should be taught as basic skills. The question of what to teach and how to teach it is the emphasis of the document.

The guidelines consist of a set of principles for teaching statistics and a set of objectives for grade levels K-4, 5-8, and 9-12. These objectives are grouped at each level under the topics of exploring data, statistical inference, and probability. Activities are included that illustrate the objectives for specific grade levels, and the link to the objectives is discussed in the text. A manual is also available.

The guidelines are priced at \$12, and the manual is also \$12. Both books can be purchased for \$20.

For more details, contact the ASA, Quantitative Literacy Department, 1429 Duke St., Alexandria, VA 22314-3402; (703) 684-1221.

News Bulletin of the NCTM, *January, 1992, p. 8*

Any comments? Write to: AWM Education Committee, c/o Sally I. Lipsey, Chair, 70 E. 10th St., #3A, New York, NY 10002-5102.

MIAMI SKHS DAY

The First Annual Miami Valley Sonia Kovalevsky Mathematical Sciences Day was a great success. It was held on October 26, 1991 at Miami University in Oxford, Ohio and was supported by the Association for Women in Mathematics, the Department of Mathematics and Statistics, and the Women's Studies Program at Miami University. Over 115 high school girls, mostly sophomores and juniors, attended with about 20 of their math teachers. High schools throughout southwestern Ohio were represented. At the end of the day the participants overwhelmingly agreed they would encourage others to attend next year.

The students and teachers enjoyed refreshments as they were welcomed by Vice President for Student Affairs Dr. Myrtis Powell. Then Miami Professor Amy Fisher gave an inspirational and moving description of the life of Sonia Kovalevsky. Participants split into three groups to attend a variety of talks and discussions for the rest of the day. We had panels of professional women and female mathematics students to talk about their experiences and answer questions. Several other women discussed the use of mathematics in their work. These included architecture student Kristina Luce on "Geometry and Architecture" and industrial hygienist Dr. Carol Rice speaking about a study she undertook to make an Indianapolis foundry safer. A very popular talk was that of Physics Professor Beverley Taylor on "The Physics of Toys."

At 11:30 we regrouped to hear our keynote speaker before lunch. Dr. Patricia Lamm from Michigan State University gave a wonderful talk on "The Magic of Mathematics." She told stories and charmed her audience while explaining how mathematics applies to real-life problems of oil drilling

and satellite design. One student wrote that she "enjoyed the speech given by Dr. Patricia Lamm because she really made it sound exciting to be a research mathematician."

Because this was our first Sonia Kovalevsky Day we did not have past experience from which to draw. The large turnout was very encouraging and convinced us that high school girls are eager for information and encouragement. The evaluations were very positive, but also gave us some ideas for improvement. One result that surprised us, although perhaps it shouldn't have, is that the students were uninterested in issues of sexism, gender, two-career couples, flexibility, or combining careers and families. These are issues that will probably interest them greatly in a few years, but for now these girls care about the careers and the mathematics.

While planning our Sonia Kovalevsky Day we tried to strike a balance between fun uses of mathematics and serious information about jobs and careers. After attending some students wrote:

The day was wonderful and I really enjoyed it.

I was really undecided about positions. This has helped give me some ideas. Thank you! This is just what I needed.

This was very informative... Being a senior and thinking about the future, I'm not sure what I want to do as a career. Now I think with a math major I'll be set.

The comments indicate that we succeeded in convincing our young participants of the wide variety of career choices open to women in mathematics. We hope they will be further encouraged to consider mathematics and related fields. Our thanks go to AWM for its generous support, which in particular made it possible to bring in our popular keynote speaker.

Kari Shaw, Miami University

**MARCH IS NATIONAL
WOMEN'S HISTORY
MONTH!**

FELLOWSHIPS AND GRANTS

HPCC Grand Challenge Applications Groups

The National Science Foundation announces opportunities for group oriented research for Fiscal Year 1992 in connection with the High Performance Computing and Communications (HPCC) Program. Six to eight proposals are expected to receive funding as Grand Challenge Application Groups.

Activities supported are expected to achieve significant progress on Grand Challenge Applications — fundamental problems in science and engineering, with broad economic and scientific impact, whose solution could be advanced by applying high performance computing techniques and resources. This HPCC activity will provide funding for multidisciplinary groups of scientists, engineers, and mathematicians to apply emerging high performance computing and communications systems to advance the solution of diverse science and engineering problems. The emphasis will be on support for groups requiring HPCC capabilities where such focused, cross disciplinary support is generally unavailable or difficult to obtain. Any area of science and engineering supported by NSF is eligible for funding under this solicitation.

Grand Challenge Applications Groups are expected to employ testbed systems exploiting new and emerging computer and communications architectures, to prepare the groundwork for the HPCC goal of sustained teraflop computing on important application problems by the mid 1990's. Projects funded through this effort will focus on the fusion of disciplinary research with emerging high performance computing environments and architectures, within the framework of the HPCC program goals. It is anticipated that projects will include aspects of design of models, algorithms and software to fully realize the potential of parallel, distributed and heterogeneous computing systems on Grand Challenge Application problems.

Awards are planned to be in the range of \$300,000 to \$800,000 per year for a period of three to five years. Proposers must submit a letter of intent to NSF by March 9, 1992. The deadline for submission of proposals is April 30, 1992. To receive the full announcement, NSF 92-7, address requests to hpcgrps@nsf.gov, or utilize the NSF electronic dissemination Science and Technology Information System, STIS.

Fulbright Scholar Awards

The Fulbright Scholar Program for 1993-94 includes some 1000 grants for research, combined research and lecturing, or university lecturing in over 120 countries for from two months to a full academic year. Nearly one-third of the grants are targeted for research, possibly multicountry, and many lecturing awards offer research opportunities.

The basic eligibility requirements are U.S. citizenship and Ph.D. or comparable professional qualifications. For lecturing awards, university or college teaching experience is expected. Language skills are needed for some countries, but most lecturing assignments are in English. Applications are encouraged from professionals outside academe and from independent scholars. Fulbright seeks good teachers as well as active researchers.

Deadlines are June 15, 1992 for Australasia and South Asia and August 1 for Africa, Asia, Europe, Latin America, the Middle East, and Canada. Information and application materials are available from the Council for International Exchange of Scholars, 3007 Tilden Street, NW, Suite 5M, Box NEWS, Washington, DC 20008-3009; (202) 686-7877.

Advanced Research Fellowships in India

The Indo-U.S. Subcommittee on Education on Education and Culture is offering nine long-term (6-10 months) and nine short-term (2-3 months) awards for 1993-94 research in India. These grants will be available in all academic disciplines except clinical medicine. Applicants must be U.S. citizens and hold the Ph.D. or comparable professional qualifications. The fellowship program seeks to open new channels of communication between academic and professional groups in the United States and India and to encourage a wider range of research activity between the two countries than now exists. Scholars and professionals with limited or no prior experience in India are especially encouraged to apply. The program is sponsored by the Indo-U.S. Subcommittee on Education and Culture and is funded by the United States Information Agency, the National Science Foundation, the Smithsonian Institution, and the Government of India.

The application deadline is June 15, 1992. Application forms and further information are available from CIES, 3007 Tilden Street, NW, Suite 5M, Box INDO, Washington, DC 20008-3009; (202) 686-7877.

CONFERENCES AND WORKSHOPS

ATLAST Project for Linear Algebra

The ATLAST Project (Augment the Teaching of Linear Algebra through the use of Software Tools) will offer ten faculty workshops on the use of software in teaching linear algebra. The workshops will last three days. They will be held at regional sites across the United States during the summers of 1992 and 1993. Each workshop will have the same format and content. The project was conceived by the Education Committee of the International Linear Algebra Society (ILAS). Steven J. Leon of the ILAS Education Committee is serving as the ATLAST Project Director, and the Assistant Director is Richard Faulkenberry. Both are in the Mathematics Department of the University of Massachusetts Dartmouth. The ATLAST project is funded by a National Science Foundation Faculty Enhancement grant.

Workshop participants will learn about existing commercial linear algebra software packages and will be trained in the use of the MATLAB software package. Attendees will learn how to effectively incorporate computer exercises and laboratories into undergraduate linear algebra courses.

The ATLAST Project provides room and board for participants attending the workshops. Participants will learn to design computing exercises or projects at a level suitable for assigning to an undergraduate linear algebra class. These exercises will be class-tested during the school year following the workshop and then submitted to the project director for inclusion in a database. Participants will each receive a \$200 stipend for their submissions.

The databases from each of the summer workshops will be edited and printed as manuals which will be distributed to the workshop attendees. The best exercises will be selected for inclusion in an ATLAST Project Book. This book will be published by one of the mathematics societies with the provision that its contents will be public domain. Participants' contributions will be acknowledged in both the data base and the project book.

Summer 1992 workshops will be held as follows: West Valley College, Saratoga, CA, June 4-6; Auburn University, Auburn, AL, June 11-13; University of Wisconsin, Madison, June 18-20;

University of Wyoming, Laramie, June 25-27; and University of Maryland, College Park, July 22-25.

All teachers of undergraduate linear algebra courses at colleges or universities in the U.S. are invited to apply for the ATLAST workshops. The deadline for applications is April 1, 1992. Late applications will be accepted on a space-available basis. Each workshop will be limited to thirty participants. Applicants will be notified of decisions by May 1. For further information and application forms, contact Steven J. Leon, ATLAST Project Director, Department of Mathematics, University of Massachusetts Dartmouth, Dartmouth, MA 02747; (508) 999-8320; FAX (508) 999-8901; email: atlast@umassd.edu.

International Workshop on the History of Women in Science, Technology and Medicine

This workshop, organized by the International Union of the History and Philosophy of Science, Division of History of Science, Commission on the History of Women in Science, Technology and Medicine, will take place August 8-13, 1992 at Sopron/Oedenburg, Hungary. Applications are due by April 10, 1992 and abstracts, by May 15, 1992.

The main topics are: ways of women's acceptance in special fields and institutions; individual women experts in science, technology and medicine; the impact of technology on women's working conditions and daily life; the reactions in social surroundings to women's appearance in science; gender aspects of scientific and technological thinking; and women scientists under the influence of political changes.

For more information, write Dr. Margaret Rossiter, Department of History of Science, Cornell University, 425 Caldwell Hall, Ithaca, NY 14853-2602.

Conference on Computers in Geometry Classrooms

A conference on Computers in Secondary Geometry Classrooms, supported by the NSF, will be held June 24-25, 1992 at St. Olaf College in Northfield, MN. The conference will examine issues in teaching geometry as envisioned in the NCTM Curriculum and Evaluation Standards and will feature reports on both research and implementation projects devoted to the role of computer-assisted tools in teaching and learning geometry.

Specific issues to be addressed include: 1) ways in which geometry microworlds can and should facilitate recommended changes in the content and instruction of school geometry; 2) characteristics of current and emerging geometry microworlds; 3) desirable characteristics of future geometry microworlds; 4) instructional methods which enhance and profit from the use of computer-assisted tools; 5) teacher preparation and enhancement programs which empower teachers to begin and sustain appropriate use of computer tools.

For more information, contact Martha Wallace, Department of Mathematics, St. Olaf College, 1520 St. Olaf Avenue, Northfield, MN 55057-1098; (507) 663-3113; email wallace@stolaf.edu; FAX (507) 663-3549. To present a paper or participate in a poster session, please send a one to three page proposal to the same address. Proposals must be received by March 15, 1992, and selected candidates will be notified by April 21, 1992.

Rebekka Struik would like to remind people to think about applying to the Laramie conference described in the last issue.

WOMEN IN MATH AND PHYSICS: INHIBITORS AND ENHANCERS

In 1989, the Sloan Foundation asked the Mathematics and Physics Departments of the University of Michigan to examine the literature to assess what is known and what strategies had worked in attracting women to these fields. Aided by their social science colleagues and the Center for the Education of Women, they produced the report *Women in Mathematics and Physics: Inhibitors and Enhancers*. It includes a review of the literature and the results of three studies conducted at the University and ends with recommendations for institutional changes which would have the greatest impact on improving the academic experience of women in the fields studied. A copy of the full report (cost, \$12) may be obtained from the Center for the Education of Women, University of Michigan, 330 E. Liberty St., Ann Arbor, MI 48104-2289; (313) 998-7240. Excerpts from the executive summary of the report will appear in a future newsletter.

ARTICLES OF INTEREST

The November 1991 and January 1992 issues of the *AMS Notices* each contain a thought-provoking article about our colleagues in countries with many fewer resources than ours. Neal Koblitz is the author of the intentionally provocative "Mathematics under Hardship Conditions in the Third World." Lenore Blum's "Report on the Third Pan-American Congress of Mathematicians and Some Thoughts on Cooperation Between the American and African Mathematical Communities" arose from her attendance at the Congress as the official delegate of the American Mathematical Society at the invitation of the African Mathematical Union.

Koblitz's article is based on the AMS/MAA Invited Address he delivered at the Joint Summer Meetings in Orono, Maine on August 9, 1991. It appears in the November issue on pages 1123-1128.

The first section is on mathematics education. He gives observations, some good and some bad, based on his personal experiences in Central America, Vietnam, and India. He describes the pedagogical damage done in Central America by the importation of the "New Math." For example, students in Nicaragua are taught that in order to add two fractions, they must use the Euclidean algorithm to obtain the least common denominator.

The second section is concerned with the research environment in the Third World. Much is accomplished despite a tremendous lack of material resources. He closes with a list of recommendations for ways we can support our colleagues in the Third World.

- We could develop sabbatical-like programs for Third World mathematicians so that they could spend, say, one out of every five or six years in a developed country. That way, active researchers in developing countries would not be faced with the either-or choice: to emigrate to the U.S. or to remain in their native country forever isolated from the main centers of research.
- We should make every effort to keep contact with our former students who return to their countries of origin. The simple act of regular correspondence can go a long way to keep them from being overcome by isolation.
- We could donate books and journals to institutes and universities in developing countries. Dumping one's old books and moldy copies of *Notices* is not helpful. Rather, we should find out

what they really want and try to get it for them. In particular: (1) the AMS and the MAA should make all of their books and journals available at nominal cost to libraries in the Third World [in the case of the AMS, the Committee on Service to Mathematicians in Developing Countries, which in the past has distributed books and journals to some countries on an ad-hoc basis, would be the appropriate group to coordinate the systematic distribution of AMS publications]; and (2) we should approach the commercial math publishers in an organized way and ask them to offer steeply discounted sales to libraries in developing countries.

- Publishers should be more open-minded about possible publications on the culture and history of mathematics in the Third World.
- Mathematical institutions and individual mathematicians should not limit their ties to only the best known research centers. It is unfortunate that in India, for example, the university system is often neglected by foreign visitors, who traditionally have most of their ties with the various research institutes (especially the Tata Institute in Bombay).
- Finally, on an individual basis, one can cultivate relations with one or two math departments or institutes in the Third World. I'm not suggesting becoming a one-person foreign aid program or spreading oneself too thin. Rather, choose a place where you have a former student, or where you know of a mathematician with similar research interests, or a region where you have family ties, or a country where you have a longstanding cultural or political interest, or where you like the food and climate. Escape the New England winter every year by giving a January "short course" of lectures in sunny Madras, Maputo, or Montevideo!

Lenore Blum's report appears in the January issue, pages 17-19. It was the first time the AMS had sent an official representative to the congress. Blum says:

I went to Africa because I felt it important that the AMS be represented. Indeed, I had spent much time last year convincing the AMS to send an official delegate.... But in truth, I had not expected to become as involved as I did. Nor had I expected to find the high level of mathematical activity, nor the strong commitment to mathematics development that I found. Like many Americans, I was woefully ignorant and provincial with regards to most things African....

She goes on to describe the Congress. There were plenary addresses, contributed papers, symposia, and many discussions.

The talks covered a broad spectrum of topics from pure and applied mathematics. The speakers also represented a broad spectrum from young researchers to established mathematicians, and visitors. This is all the more impressive given the incredibly harsh working conditions: few up-to-date books, lack of current international journals, virtually no access to preprints, poor telephone and postal communication, no electronic mail, scarce funds for travel even within the Continent, little opportunity for contact with the international mathematics community, and so on.

Blum goes on to suggest numerous ways that we as individuals and the AMS as a society could assist the AMU and the African mathematics community. Raymond Ayoub, in his report on the AMS Committee on Service to Mathematicians in Developing Countries, recommended setting up a Mathematical Sciences Book Foundation. Blum endorses this, but would expand it to a Book and Communications Foundation ("the single most frequent request [she] received from African mathematicians was that the AMS provide CD-ROMS of *Mathematical Reviews* to be placed in strategically located mathematics centers in Africa").

The increased communication between mathematicians in all parts of the world that would result if Blum's and Koblitz's recommendations were followed would be enormous. This would be great for mathematics.

The January 1992 *Communications of the ACM* contains "The 1989-90 Taulbee Survey: The Computing Research Association's Survey on Production and Employment of Ph.D.'s and Faculty in Computer Science and Engineering" by David Gries and Dorothy Marsh [Vol. 35, No. 1, pp. 133-143]. This report contains information similar to that given in various reports in the *AMS Notices*, but for the computer science community. I remember when the theory was that because computing was a new field, it would be much more open to women than mathematics. That theory has certainly turned out to be wrong. Here are a couple of quotes from the article.

The percentage of female Ph.D.'s in CS stayed where it has been since the early 1970's: between

10% and 14%. There are far too few women in our field, and our record of retention of women in the faculty is abysmal. There are only 243 female faculty members in the 167 CS and CE Ph.D.-granting departments! Again, we hope the CRA will help introduce programs to encourage more women to enter computing and to remain in academia over the years. The NSF is interested in this problem as well....

Women and Minorities on the Faculty: The abysmal statistics are given in Table 12. That the number of blacks and Hispanics in our faculty is so low is to be expected — since 1973, less than 1% of our Ph.D.'s have been black or Hispanic, so one cannot expect to have more than 1% blacks and Hispanics as faculty members. The task of luring blacks and Hispanics into our field has to be done at a much lower level — in high schools and colleges.

For women, however, the numbers are depressing in another way. At the assistant professor level, the numbers are reasonable, in that the percentage of women (10%) is close to the percentage in Ph.D. production (10-14% since 1973 and 13% this year). At the full professor level, however, the percentage of women falls drastically to 4%, indicating that we did not retain women as faculty members over the years. At none of the professional levels are there enough women to have one in each department, and, in total, there are only 1.6 women per department.

“Overcoming the Trend Away From the Sciences” [*On Campus with Women*, Vol. 21, No. 1, Summer 1991, pp. 4-5] reports on the Women in Science Project (WISP) at Dartmouth College. Begun in 1990, “WISP offers internships to women students in biology, biochemistry, chemistry, computer science, earth sciences, engineering sciences, mathematics, and physics. Students work one-on-one with faculty members in research laboratories and receive small stipends so that even economically disadvantaged students may participate.”

The program targets first-year women, in order to “decrease the attrition rates of those who do express an interest in science but for some reason don’t go on to study it.” Currently, about one-fourth of the first-year women students are either interns or seminar participants in the project.

For more information, contact Carol Muller, Assistant Dean, Thayer School of Engineering, Dartmouth College, Hanover, NH 03755; (603) 646-3058.

“They’d Rather Switch Than Fight” by Barry Cipra [*Science*, October 18, 1991, pp. 270-371] documents the conclusions of a preliminary study by two sociologists, Nancy Hewitt and Elaine Seymour, research associates, Bureau of Sociological Research, University of Colorado at Boulder. Faculty usually blame students and their (lack of) preparation, large class sizes, etc., for the high attrition rates in science, math, and engineering majors. Hewitt and Seymour’s study indicates that this may not be where to lay the blame.

They interviewed a number of students at different schools, both those who have switched out of the majors mentioned above and those who stuck with it. They did not find these two groups of students to be different in terms of talent, work habits, personal problems, etc.

What all share are problems with science faculty at their schools, the sociologists discovered. The chief complaints were poor teaching and unapproachability on the part of the faculty members, who didn’t seem to have much time for undergraduates. And here came a pointed difference between the two groups: The switchers didn’t find any way to cope with the difficulties; the persistent nonswitchers did. Yet even among those who stuck it out, a telling 40% reported being “turned off” to science by the experiences they had as undergraduates.

The authors have some recommendations for reducing the attrition. Study support networks seem to be very important to students; universities should “take steps to encourage the development of such groups early in the students’ careers.” Also, science departments need to strengthen course and career advising for their students. “[I]nstitutions can eliminate the waste of students who are talented enough and willing to work, but who are put off by the institutional barriers.”

Our *Careers that Count* booklet received a great review in the editorial in *Focus*, December 1991. “It is a brochure that should be in every high school, in every college coffee room used by students, and on every career advisor’s desk.” “But in fact none of the facts you will find inside the booklet has anything to do with gender.... The contents are applicable to all, which makes the gender message all the more powerful.”

CTC was also mentioned in the News Briefs section of the NCTM newsletter for January 1992.

A review of *A Century of Mathematics in America* [AMS, 3 vol., edited by Peter Duren, assisted by R.A. Askey, H.M. Edwards & U.C. Merzbach] by W.H.J. Fuchs and Lee Lorch appeared in *The Mathematical Intelligencer*, Vol. 13, No. 4, 1991, pages 74-78. The three volumes were published as part of the centenary celebration of the AMS. More than 1700 pages in length, they include 106 articles on a wide variety of topics.

These constitute valuable source material for historians of mathematics and of education, and provide intriguing and instructive reading for contemporary and future mathematicians everywhere....

What makes the collection so attractive is the great variety of styles and the charm of much of the writing. Many of the most enjoyable articles do not fit into a single category, but mix the ingredients of history, personal account, and mathematical discussion, like R.W. Hamming's "The Use of Mathematics" (vol.1) and [Hassler] Whitney's article ["Topology Moving Toward America" (vol. 1)]....

In addition to the wealth of information they contain, these articles provide an excellently presented exposition of many branches of mathematics, including applied mathematics. Much of it illustrates the growing cross-fertilization between different parts of mathematics, as well as their increasing value for old and new partner sciences. This is a welcome antidote to the fear that our subject was in danger of fragmentation and isolation. One example of reassurance is found in David Blackwell's observation (vol. 3, p. 607) that much really interesting mathematical research at universities is being done outside mathematics departments.

A laudatory article on Zvezdelina Stankova, "She's No. 1: Foreign math whiz wows Bryn Mawr" by Ralph Vigoda appeared in the October 23, 1991, *Philadelphia Inquirer*. Stankova was runner-up in the 1991 Alice T. Schafer Prize competition and is a Marshall Fellow at Bryn Mawr College. Says the article:

She's just another college student from Bulgaria who can play classical piano and dance ballet, has traveled the world winning medals in international mathematics competition and, after a few months at Bryn Mawr, wrote an essay on the Beatles that was so good she was excused from second-semester English.

"ACT Study Reveals Contrast in Education Opportunities" [*On Campus with Women*, Vol. 21, No. 1, Summer 1991, pp. 5-6] reports on a recent study *Equity of Higher Educational Opportunity for Women, Black, Hispanic, and Low Income Students*.

[T]he ACT report reveals that women, when compared to men, have shown "enormous, continuous and persistent gains ... in high school graduation, college access, fields of study, and baccalaureate degree attainment." Women have not made progress in improving their standardized academic test scores, however; the report uses such scores to measure college preparation.

Notably, the report also concludes that women have nearly achieved parity in educational opportunity with men. Women now are choosing to pursue varied areas of study and are moving into traditionally male-dominated fields. Women also have shifted their reasons for getting a degree. When asked why they want to gain a baccalaureate degree, more women now are citing "to prepare for graduate school," "to become an authority in the field," and "to be very well off financially" than in the two previous two decades. The report also says that "given recent trends in high school graduation and college entrance rates, we will soon see a woman's chance of earning a bachelor's degree surpass that for men." ...

Women, according to the report, made significant gains in higher education participation between 1966 and 1975 — gains they maintained throughout the 1980's — while the gains made by black, Hispanic, and low-income students between 1966 and 1975 were "substantially eroded" during the 1980's.

To obtain a free copy of the report, write to ACT, Educational and Social Research, P.O. Box 168, Iowa City, IA 52243.

"Comparative Study of Girls in Math Class in Canada and Cuba" by Sarah Joyce [*Kovalevskaja Fund Newsletter*, Vol. VI, No. 2, November 1991, p.3] gives some results of the author's M.A. thesis. Her pilot study of seventh graders in Cuba and Canada indicates that women's difficulties with respect to mathematics are culturally induced. In Canada, boys dominate classroom discussion, especially in mathematics; they have "more extended interactions with teachers than girls." In Cuba, "[b]oys have more overall contact with teachers in language arts classes, whereas girls have more contact with teachers in mathematics classes."

BRIEF NOTES

The Texas Foundation for Women's Resources and its LEADERSHIP TEXAS Alumni Association have published an anthology on science and math education, *OPTIONS for Girls: A Door to the Future*. The anthology was edited by Meg Wilson and produced with assistance from Elizabeth Snapp at Texas Woman's University and a large group of volunteers from LEADERSHIP TEXAS. The anthology grew out of a larger OPTIONS Project whose goals are to develop resources and strategies to encourage girls to pursue an early and lifelong interest in science and math and to pursue science and math courses through high school so that they will have a full range of options open to them.

The anthology has been developed over the past six years. The best 1000 articles, books and studies were reviewed and pared down to a readable set of articles that described the problem of why girls don't take more science and math and that describe strategies to overcome this problem. Between citations within articles and the supplemental reading list the anthology also presents a substantial bibliography. The target audience includes parents, teachers, school board members, community leaders and girls themselves.

The anthology has just been released and is available for \$20 (plus sales tax in Texas). It can be ordered by writing to Pro-Ed, the publisher, at 8700 Shoal Creek Blvd., Austin, TX 78758, attn.: Linda Brown. If you have any questions, contact Meg Wilson at wilson@mcc.com or call (512) 338-3506. Discounts are available for large orders.

"Retaining and Promoting Women and Minority Faculty Members: Problems and Possibilities" is available for \$3.00 (prepaid) from the University of Wisconsin System, Office of Equal Opportunity Programs and Policy Studies, UW System Administration, 1802 Van Hise Hall, 1220 Linden Dr., Madison, WI 53706. A panel of faculty members and administrators gave their views on the barriers that exist and ways to change to remove them.

The newsletter *Mathematica in Education* was launched in Fall 1991. Articles and notes will cover experiences in implementing *Mathematica* laboratories and classroom usage; academic projects that use *Mathematica* in a significant manner; curricular changes related to the use of *Mathematica* in the

physical, natural, and social sciences; philosophical and pedagogical issues; software and hardware compatibility issues; resources (both human and electronic), including user groups and archives; and a calendar of events (workshops, conferences, etc.).

Subscriptions are \$15 per year. To obtain subscription information and to receive one complimentary issue, write to *Mathematica in Education*, Department of Mathematics, Sonoma State University, 1801 East Cotati Avenue, Rohnert Park, CA 94928-9833.

One of our members suggests that we should all read Susan Faludi's *Backlash: The Undeclared War Against American Women*. According to Eleanor Smeal, "Faludi unabashedly exposes how women are dangerously undermined and manipulated by the political, legal, and media establishments. *Backlash* is the clarion call for women in the '90s and destined to become a classic."

The Women's Initiative is a project of the American Association of Retired Persons (AARP). It represents the AARP's fundamental commitment to the health and economic well-being of mid-life and older women. The growing number of such women can, and should, have a dramatic influence on policies and programs that effect their lives. For a free list of publications, write Women's Initiative Publications List, D12988, AARP Fulfillment, 601 E. St., NW, Washington, DC 20049.

The National Conference for Women Student Leaders will be held May 28-30, 1992 in Washington, DC. For more information and registration materials, write National Association for Women in Education, 1325 18th Street NW, Suite 210, Washington, DC 20036.

Multiculturalism in Mathematics, Science, and Technology: Readings and Activities is a secondary-level book published by Addison-Wesley. A wall chart entitled "A World of Mathematics, Science, and Technology" and a sample unit may be ordered by calling 1-800-447-2226.

The *Directory of Volunteer Opportunities in Precollege Mathematics and Science Education* has been published by the Institute of Electrical and Electronics Engineers, Inc. It is available from IEEE-USA, 1828 L Street NW, Washington, DC 20038-5104.

Expanding Your Horizons has added an environmental conference to its already popular conference on science/math careers. Write 2727 College Ave., Berkeley, CA 94705 for a packet of information on how to hold such a conference.

The December 1991 issue of *Discover* magazine is a special issue on women in science. Contact *Discover* Magazine, Walt Disney Publications, 114 Fifth Avenue, New York, NY 10011; (212) 229-0134.

The Dictionary of Bias Free Usage: A Guide to Non-discriminatory Language by Rosalie Maggio is published by Oryx Press (\$25, cloth; 1-800-279-6799). It includes a section on writing guidelines and a dictionary with fifteen thousand bias-free alternatives to five thousand commonly used words and phrases.

"Women in Science and Technology: Studies and Reflections" is a new publication series of the Iowa State University Press. Monographs in the form of historical accounts, biographies, educational comparisons, and philosophical treatments of gender and science issues will be considered for publication. For more information, write the series editor Diane M. Calabrese, Coordinating Board for Higher Education, 101 Adams Street, Jefferson City, MO 65101.

Sharing Science with Children: A Survival Guide for Scientists and Engineers may be obtained by writing Patricia S. Curlin, AAAS, Dept. SEN, 1333 H Street NW, Washington, DC 20005-4792.

SAGE: A Scholarly Journal on Black Women has a special issue on "Science and Technology" (Vol. VI, No. 2). Three African-American mathematicians contributed articles: Sylvia T. Bozeman, Etta Z. Falconer, and Evelyn Boyd Granville. Write SAGE, P.O. Box 42741, Atlanta, GA 30311-9741.

The Journal of Negro Education 59, 3 (Summer 1990) was a special issue on "Black Students and the Mathematics, Science, and Technology Pipeline: Turning the Trickle into a Flood." Topics ranged from test anxiety to successful intervention programs and Eurocentrism in mathematics. Write JNE, Bureau of Educational Research, Howard University, Washington, DC 20059.

Outstanding Women in Mathematics and Science is a set of photographs of 23 famous women distributed by the National Women's History Project. Designed for classroom bulletin boards, each photograph is accompanied by a half-page biography. The cost is \$12 plus \$4.50 shipping/handling. To order, contact the Project at (707) 836-6000.

A list of engineering scholarships for minority students and for women is available from *Hispanic Engineer*, Career Communications Group, 729 East Pratt Street, Suite 504, Baltimore, MD 21202.

three items from the WME Newsletter, Fall 1991:

The Education Development Center's Women's Educational Equity Act (WEEA) has released a two-volume set, *Add-ventures for Girls: Building Math Confidence*, addressing the issue of mathematics disparity for elementary and middle school girls. The elementary level book costs \$25, and the middle school book, \$28. Both are available from the Education Development Center, WEEA Publishing Center, 55 Chapel St., Newton, MA 02160. MasterCard or Visa charges are accepted at (800) 255-3088; in Massachusetts, at (617) 969-7100.

A secondary-level mathematics journal, *The Nth Degree*, is accepting problems and manuscripts from secondary school students. The journal is written almost entirely by mathematics students nationwide. Everyday applications, historical background, computer programs and graphics, and problem solving are topics included in the journal. For more information write Tim McNamara, Faculty Editor, *The Nth Degree*, 1250 Amherst St., Buffalo, NY 14216; (716) 875-8212; FAX (716) 875-3931. Your female students may need extra encouragement to submit articles.

The National Science Foundation has funded publication of a set of three books on computer equity including: *What is Computer Equity? A Trainer's Workshop Guide*, \$19.95; *Computer Equity in Math and Science: A Trainer's Workshop Guide*, \$19.95; and *Counting on Computer Equity: A Quick and Easy Guide for Finding Out If Your School Has a Computer Gender Gap*, \$4.95. The books are available as a three-volume set for \$34.95. To order, contact Scarecrow Press, P.O. Box 4167, Metuchen, NJ 08840; (800) 537-7107; (908) 548-8600.

ALBION COLLEGE--One year visiting position (sabbatical replacement) beginning in August, 1992, to teach a range of undergraduate mathematics and/or computer science courses. Ph. D. preferred. Salary commensurate with experience. A successful candidate must show evidence of commitment to and excellence in teaching, preferably in a liberal arts context. Direct inquiries to R. C. Fryxell, Chairman, Mathematics Department, Albion College, Albion, MI 49224 (517)629-0287, rfryxell@albion.bitnet. Priority will be given to completed applications received before 4/1/92.

ALLEGHENY COLLEGE. Mathematics Educator. Allegheny College seeks an experienced mathematics educator to play a major role in its redesigned certification program in elementary and secondary education that brings a special math and science emphasis to each. The ideal candidate will have a doctoral degree in mathematics education, graduate work in mathematics, elementary or secondary teaching experience, supervisory experience in the schools, and college teaching experience. Duties will include teaching, course development, and administrative responsibilities.

This senior level position in a program whose redesign is partially funded by NSF is available now. Please send inquiries, along with a current curriculum vitae, to: Provost Andrew T. Ford, Box 18, Allegheny college, Meadville, PA 16335.

CASE WESTERN RESERVE UNIVERSITY. Visiting Positions in Mathematics and Statistics. The Department of Mathematics and Statistics anticipates at least two one-year visiting appointments in Mathematics and Statistics beginning July 1, 1992. Applications in all areas of mathematics are invited. Preferred areas include probability and statistics, global analysis and geometry, dynamical systems, control theory, functional analysis, partial differential equations, and numerical analysis. Send vita plus three letters of recommendation to Professor David Singer, Chairman, Department of Mathematics and Statistics, Case Western Reserve University, Cleveland, OH 44106-7058.

GRAND VALLEY STATE UNIVERSITY, Mathematics & Computer Science Department. Allendale, Michigan 49401. Assistant Professor (tenure track). Prefer Ph. D. with emphasis in Applied Mathematics, Mathematics Education (Elementary) or Statistics. At GVSU, emphasis is placed on effective teaching as well as professional development, with reduced teaching loads and/or grants available for research and professional development. GVSU is located just west of Grand Rapids, the second largest metropolitan area in Michigan, and offers numerous cultural and recreational opportunities. Cost of living is moderate and quality of life is high. Consideration of applicants will continue until position is filled. Send application with resume, names of three references, and letter of interest and qualifications to: Math Search Committee, Math & CS Dept, Grand Valley State Univ. , Allendale, MI 49401.

GRINNELL COLLEGE, Grinnell, Iowa 50112. Two year term position beginning fall 1992. Assistant Professor preferred, Instructor or Associate Professor possible. Candidates will be expected to demonstrate excellence in teaching and to have a commitment to teaching in a liberal-arts setting. We seek the best teacher/scholars regardless of mathematical specialty. Send vita and three letters of reference to Emily Moore, Chair, Department of Mathematics and Computer Science, Grinnell College, Grinnell, Iowa 50112. The search will remain open until the position is filled; to be assured of consideration, submit all applications materials by March 20, 1992.

HUNTER COLLEGE, Department of Mathematics and Statistics. The Department seeks to fill a tenure-track opening at the level of Assistant Professor starting in fall 1992. The starting salary for an Assistant Professor at Hunter ranges from \$26,630 - \$46,176. Candidates should present credentials indicating strong potential or an excellent record of accomplishment in both research and undergraduate teaching.

Applicants should send a vitae and at least 3 letters of recommendation to: Professor Thomas Jambois, Department of Mathematics and Statistics, Hunter College, CUNY, 695 Park Avenue, NYC, NY 10021

JOHNS HOPKINS UNIVERSITY, Department of Mathematics. Applications are invited for one-year visiting positions (Beginning September 1992) in areas of interest to the Department. These areas include algebraic geometry, algebraic topology, differential geometry, mathematical physics, number theory, partial differential equations, several complex variables and related fields. Minority and women candidates are encouraged to apply. Applicants should send a resume and letters of recommendation to: Appointments Committee, Dept. of Mathematics, Johns Hopkins Univ. , Baltimore, MD 21218. (Applicants in statistics and probability, operations research, optimization and numerical analysis should contact the Dept. of Mathematical Sciences, which is a separate department).

KNOX COLLEGE. Department of Mathematics and Computer Science, Galesburg, IL 61401. One year position at the instructor or assistant professor level beginning Sept. '92. Possibility of renewal for a second year. Candidates must have MS (PhD or AbD preferred) in mathematics and a commitment to excellence in undergraduate teaching. All specialties considered. Salary dependent on experience and qualifications. Teaching load is two courses per term for each of three terms. Send resume, graduate transcript, and three letters of recommendation to Kevin J. Hastings, Campus Box 55.

Knox college is a highly selective liberal arts institution of about 1000 students. In keeping with the college's 150 year commitment to equal rights for all, Knox particularly invites applications from women and minority candidates.

MORAVIAN COLLEGE, Mathematics Department, 1200 Main St. , Bethlehem, PA 18018-6650. Three-year position at Instructor or Assistant Professor level starting Fall 1992. Teach at coeducational liberal arts college of 1200 students in excellent location. Close proximity to New York City and Philadelphia; cooperation with nearby Lehigh University, Lafayette, Muhlenberg, Cedar Crest and Allentown Colleges. Prefer Ph. D. in analysis, applied mathematics or combinatorics, with strong commitment to excellent teaching. Rank and salary dependent on qualifications. Send c. v. , transcripts and three letters of recommendation to Doris Schattschneider, Chair, at the above address. Review of applicants will begin February 1, 1992 and continue until the position is filled.

NORTH CAROLINA STATE UNIVERSITY. The Department of Mathematics anticipates the availability of a position at the assistant or associate professor level in the area of numerical linear algebra. Starting date and salary are open. Full consideration is guaranteed to candidates whose applications are complete by April 1, 1992. The departmental computing facilities include a network of 20 workstations for the faculty and a network of workstations for graduate and undergraduate education. Research computing and graphics facilities are available at the North Carolina Supercomputing Center which includes a Cray y-MP, a convex C-220, and a visualization group. The department provides startup funds for new faculty members. Candidates should send a vita and have 3 letters of reference sent to Professor C. D. Meyer, Numerical Analysis Hiring Committee, Department of Mathematics, Box 8205, North Carolina State University, Raleigh, NC 27695-8205; e-mail: meyer@ncsuvm.bitnet.

NORTHERN MICHIGAN UNIVERSITY. The Department of Mathematics and Computer Science invites applications for a tenure-track position in computer science. A Ph. D. in computer science or a Ph. D. in mathematics with significant experience in computer science is required. All specialties will be considered. Interests in the department include: artificial intelligence, computer graphics, computational graph theory, theory of computing and mathematical software.

NMU is primarily an undergraduate institution, and a commitment to teaching is an essential expectation of the position. Research and professional activity are both encouraged and supported.

Applicants should send transcripts, three letters of recommendation and a resume to Dr. Terrance L. Seethoff, Department of Mathematics and Computer Science, Northern Michigan University, Marquette, MI 49855

OHIO NORTHERN UNIVERSITY, DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE, ADA, OH 45810. The Department of Mathematics and Computer Science invites applications for a tenure track position in computer science. A Ph. D. in computer science or a Ph. D. in mathematics with an M. S. in computer science is required. ONU is a private, undergraduate, selective University with colleges of Arts and Sciences, Engineering, Business, Pharmacy, and Law. The department operates a network of IBM PS/2s, Apple Macintoshes, and SUN SPARC Workstations with an IBM RS/6000 file server which is connected to central university computing and the Internet. Evidence of a commitment to effective undergraduate teaching and professional activity is required. Send letter, resume, transcripts, and three letters of reference to Robert Hovis, Chair, by Mar. 1, 1991. Applications will be considered until the position is filled.

PURDUE UNIVERSITY CALUMET. The Department of Mathematics, Computer Science & Statistics will have one (1) tenure track mathematics position available for August 1992 at the rank of Assistant Professor. Requirements: a Ph. D. in Mathematics. Responsibilities will include undergraduate and graduate teaching, research and curriculum development and oversight. Candidates with expertise in numerical analysis, combinatorics or history of mathematics will be given preference. Submit a letter of application, a curriculum vita, graduate and undergraduate school transcripts. Also, arrange for three (3) letters of recommendation, at least one (1) of which addresses your teaching ability. All material should be sent to: Professor. Daniel J. Troy, Department of Mathematics, Computer Science and Statistics, Purdue University Calumet, Hammond, IN 46323. Review of documents will begin on February 15, 1992 and will continue until position is filled.

PURDUE UNIVERSITY CALUMET. The Department of Mathematics, Computer Science and Statistics announces a tenure-track position in mathematics education available for August 1992. Duties and responsibilities include teaching a range of mathematics courses, including content and methods courses for prospective K-12 teachers, supervising field experience and working collaboratively with public schools. Active involvement in research is expected. A doctorate in Mathematics, or in Mathematics Education with at least a masters degree in Mathematics, is required. Candidates should have a strong commitment to teacher education and to quality teaching at both the undergraduate and graduate levels. Submit a letter of application, a curriculum vitae, graduate and undergraduate transcripts. Also, arrange for three (3) letters of recommendation, at least one of which addresses your research potential and at least one of which addresses your teaching ability. Review of applications will begin February 1, 1992 and continue until the position is filled. All materials should be sent to: Professor J. Pail McLaughlin, Dept of Mathematics, Computer Science & Statistics, Purdue University Calumet, Hammond, IN 46323.

PURDUE UNIVERSITY. Department of Mathematics, West Lafayette, IN 47907. Joseph Lipman, Head. Possible position at the Associate Professor/Professor level beginning August 1992. Excellent research credentials required. Applicants MUST mention at least one Purdue faculty member with whom they expect to have interests in common. Send resume and three letters of recommendation.

PURDUE UNIVERSITY. Department of Mathematics, West Lafayette, IN 47907. Joseph Lipman, Head. Several regular of research assistant professorships beginning August 1992. Exceptional research promise and excellence in teaching required. Applicants MUST mention at least one Purdue faculty member with whom they expect to have interests in common. Send resume and three letters of recommendation, one of which addresses teaching.

RHODE ISLAND COLLEGE, Mathematics/Computer Science Faculty. Tenure line and three-year term appointments available to teach a variety of graduate and undergraduate courses. Doctorate required for tenure line appointment. All degree requirements for the doctorate must be completed by September 1, 1992. Master's Degree required for term appointment; doctorate preferred. Preference will be given to applicants with college teaching experience, with scholarly research and academic accomplishment, and to those with expertise in mathematics education, geometry, computer science, statistics, applied math, or the integration of technology in the college math classroom. Positions subject to availability of funds. Salary competitive; excellent benefits. APPLICATIONS MUST BE RECEIVED BY MARCH 18, 1992. Send letter of application, resume, transcripts, and three letters of reference to Office of Personnel Services, Rhode Island College, Providence, Rhode Island 02908 -- Attention:Mathematics / Computer Science Search.

SAINT XAVIER COLLEGE. Mathematics Faculty. Annual teaching load of 24 hours, teaching courses in mathematics and graduate mathematics education to majors and non-majors. Advise students, serve on committees. Bachelor degrees offered in mathematics, mathematics education and computer science. Requires Ph. D. in Mathematics or Mathematics Education. College teaching experience preferred. Review of applications begins March 1, 1992. Send letter of application, resume, transcripts and 3 letters of recommendation to Dr. Patricia Army, Chair, Dept. of Mathematics & Computer Science, Saint Xavier College, 3700 W. 103rd Street, Chicago, IL 60655.

SANTA CLARA UNIVERSITY. Department of Mathematics, Santa Clara, CA 95053. G. L. Alexanderson, Chair. Tenure track opening for someone with experience and interest in mathematics education. Assistant/Associate Professor level, beginning September, 1992. Ph. D. in mathematics or possibly mathematics education required. The Department is in a College of Arts and Sciences in a comprehensive university. The Department emphasizes excellent teaching and continuing research commitment from faculty. The position involves undergraduate teaching in mathematics and some graduate level teaching for in service and pre-service teachers of mathematics. Duties involve direction of a master's program for teachers. The course load is seven courses per year on a quarter calendar; adjustments available for administrative work.

SKIDMORE COLLEGE. Faculty position. Mathematics and Computer Science Department. Assistant Professor or Instructor of Mathematics (anticipated full time sabbatical replacement starting September 1992 and ending May 1993) to teach in a department devoted to high quality instruction in undergraduate mathematics and computer science, and to scholarly accomplishment consistent with the mission of a liberal arts and sciences college. Assuming the position receives final approval, review of applications will begin March 1992. We are especially interested in candidates able and willing to teach introductory computer science courses. There are nine full-time faculty in the department. Each faculty member is supplied with an IBM PS/2 computer; these computers are connected to the department's local area network, which also comprises computers in two specially-equipped classrooms and in a microcomputer laboratory. These computers also provide access to the College's Sun network and thence to the Internet. Skidmore College is located in Saratoga Springs, NY, within easy driving distance of the Capital District with its numerous colleges and universities and equidistant from New York City, Boston, and Montreal.

Please send a letter of application, a resume and three letters of recommendation to Mark Huibregisa, Chair, Department of Mathematics and Computer Science, Skidmore College, Saratoga Springs, NY 128676

STATE UNIVERSITY OF NEW YORK AT ALBANY. Department of Mathematics and Statistics, Albany, NY 12222. Applications are invited for a tenure track position at the rank of Assistant Professor beginning September 1, 1992. Qualifications include a Ph. D. , strong record and/or promise in research, and a strong record in and commitment to teaching. All research areas will be considered, but preference will be given to areas which complement the department's existing strengths. Please furnish a curriculum vitae, a description of research, and three letters of reference to R. Michael Range, Chairman, Department of Mathematics and Statistics.

UNIVERSITY OF IOWA. Mathematics Education. Iowa City, Iowa 52242. The University of Iowa is seeking applicants for a tenure track Assistant Professor position in mathematics education. The position will be a 50-50 joint appointment in the Mathematics Department and the College of Education's Division of Curriculum & Instruction. The responsibilities of the position include teaching two courses per semester, one in undergraduate mathematics and one from among the secondary mathematics teacher preparation courses and the M. A. and Ph. D. mathematics education courses. Candidates should hold a Ph. D. in mathematics education with strong preparation in mathematics or a Ph. D. in mathematics with particular experience or background in educational issues; be committed to excellence in teaching and be committed to scholarly inquiry and publication in the areas of learning and teaching mathematics at the secondary and/or undergraduate levels. Experience and/or academic background in the use of technology in mathematics instruction is highly desirable. Review of applications will begin March 15, 1992, and continue until the position is filled. Send letter of application, vita, transcripts, and three letters of recommendation to: Mathematics Education Search committee, c/o Dr. Harold L. Schoen, Division of Curriculum and Instruction, N259 Lindquist Center, University of Iowa, Iowa City, IA 52242.

UNIVERSITY OF PENNSYLVANIA. Instructor in Computer and Information Science. Applications are invited for an Instructorship position beginning July 1992. Responsibilities include preparing, teaching, overseeing and coordinating new introductory courses in the undergraduate program. The teaching load is the equivalent of three courses per semester, adjusted for time spent on laboratory and curriculum development. Contract period is two years, with the possibility of a one year renewal.

Candidates for the instructorship should have at least a Master's degree in Computer Science, have teaching experience at the undergraduate level and be familiar with the programming languages C, Pascal and Scheme or Lisp. Familiarity with the programming language ML would be

useful but is not essential. Demonstrated ability and strong interest in teaching undergraduates is essential. Applicants should submit a resume and three references to: Jean Gallier, Chair, Faculty Recruiting, Department of Computer and Information Science, 200 South 33rd St. , University of Pennsylvania, Philadelphia, PA 19104-6389

UNIVERSITY OF WINDSOR. The University has reopened its search for a Head of the Department of Mathematics and Statistics. Applications and nominations are invited for the position, with the date of commencement of duties negotiable. The Department has 23 full-time faculty positions, and offers undergraduate and Masters programs in all areas of Mathematics and Statistics. Doctoral programs are offered in Applied Mathematics and Statistics.

The successful candidate will have a demonstrated record in research and teaching and have the capability to provide leadership.

Applications and nominations, including a curriculum vitae and the names of three references, should be sent to: Dr. Alan Gold, Search Committee Chair, Department of Mathematics and Statistics, University of Windsor, Windsor, Ontario N9B3P4. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Consideration of applications and nominations will begin April 1, 1992.

WARTBURG COLLEGE. Applications are invited for a tenure-track assistant professor, beginning late August 1992. Teach undergraduate courses in computer science, computer information systems, or mathematics. Seeking person with Master in Computer Science or Computer Information Systems or equivalent experience; Ph. D. preferred; support for aims of a Christian liberal arts college. College teaching experience desired (TA acceptable). Review of applications begins March 15, 1992. Send letter of application, resume, graduate and undergraduate transcripts and three letters of reference to Dr. William Waltmann, Chair, Department of Mathematics and Computer Science, Wartburg College, Waverly, IA 50677.

WINONA STATE UNIVERSITY. Mathematics and Statistics. Applications are invited for two tenure-track Assistant Professor positions -- one in mathematics and one in statistics, to begin September 1992. Ph. D preferred (ABD may be considered). We also anticipate some temporary one-year positions in mathematics and mathematics education. Minimum requirement is a master's degree. Teaching load may include off-campus teaching assignments. Send cover letter (indicating clearly which position is being applied for), resume, transcripts, and three letters of reference to: Affirmative Action Office, Department of Mathematics and Statistics Searches, Winona State University, P. O. Box 5838, Winona, MN 55987-5838. All positions are open until filled. Screening of tenure-track applications will begin March 10, 1992. Women, minorities, and disabled individuals are encouraged to apply.

ADVERTISEMENT GUIDELINES

AWM will accept advertisements for the AWM 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 Executive 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 of AWM receive two free ads per year. All other ads are \$60 each for the first eight lines of type. Ads longer than eight lines will be an additional \$6 for each line.

Travel Grants for Women

sponsored by
National Science Foundation
&
Association For Women in Mathematics

The objective of the NSF - AWM Travel Grant is to enable women to attend research conferences in their field, thereby providing a valuable opportunity to advance women's research activities, as well as to advance the awareness that women are actively involved in research. If more women attend meetings, we increase the size of the pool from which speakers at subsequent meetings are drawn and thus address the problem of the absence of women speakers at many research conferences.

Travel Grants: The grants will support travel and subsistence to a meeting or a conference in the applicant's field of specialization. A maximum of \$1000 for domestic travel and of \$2000 for foreign travel will be applied.

Eligibility: Applicants must be women holding a doctorate in a field of research supported by the Division of Mathematical Sciences of the NSF (or have equivalent experience). A woman may not be awarded more than one grant in any two-year period and should not have available other sources of funding (except possibly partial institutional support).

Target Dates: There will be three award periods per year, with applications due February 1, May 1, and October 1. Please note the change in dates from previous years. Applicants should send a description of their current research and of how the proposed travel would benefit their program, a curriculum vitae, and a budget to:

Jodi L. Beldotti, Executive Director
Association For Women in Mathematics
Box 178, Wellesley College
Wellesley, MA 02181
(617) 237-7517

NOTE: Please send an original and four copies of your application to AWM.

Alice T. Schafer Mathematics Prize

The ASSOCIATION FOR WOMEN IN MATHEMATICS calls for nominations for the Alice T. Schafer Mathematics Prize of \$1000 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. The letter of nomination should include, but not be limited to, an evaluation of the nominee on the following criteria: quality of performance in mathematics, exhibition of real interest in mathematics, ability for independent work, performance in mathematical competitions at the local or national level, if any. Supporting materials, if any, should be enclosed with the nominations. Nominations must be postmarked no later than April 30, 1992 and sent to:

Jodi L. Beldotti, Executive Director
Association For Women in Mathematics
Box 178, Wellesley College
Wellesley, MA 02181
(617) 237-7517

NOTE: Please send an original and four copies of the application to AWM.

Membership Categories

Please send the following to determine which membership category you are eligible for, and then indicate below the appropriate category. AWM membership year is October 1 to October 1.

For **individual members joining for the first time**, the dues are \$15 for the first two years. **Renewing individual members** pay \$20 dues. **Family membership:** \$25. **Contributing members:** \$45. **Students, retired individuals, and unemployed individuals:** \$5. Contributions of any size are very welcome.

Dues Schedule

Please indicate amount enclosed.

Individual member	_____ \$15 (first 2 years) _____	\$ 20
Family membership	_____	\$ 25
Contributing member	_____	\$ 45
Student, retired or unemployed	_____	\$ 5
Foreign members, other than Canada or Mexico	_____	+ \$8 for postage

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Newsletter

Volume 22, Number 2, March-April, 1992

AWM
ASSOCIATION
FOR WOMEN IN
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