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Association for Women in Mathematics

Volume 13, Number 6

NEWSLETTER

November-December 1983

PRESIDENT'S REPORT

Louisville Meeting. What makes one mathematician an excellent thesis advisor while others inspire no one? Why have some, but very few, thesis advisors been spectacularly successful with women students? We hope to gain new insights into these questions at the AWM panel entitled "Lipman Bers: A Mathematical Mentor" to be held on January 26 in conjunction with the American Mathematical Society-Mathematical Association of America joint winter meetings in Louisville, Kentucky. A tentative list of panelists includes Jozef Dodziuk, Jane P. Gilman, Irwin Kra, Tilla K. Milnor, Rubi E. Rodriguez, and Lesley Sibner; Linda Keen will be the moderator. There should be many fascinating mathematical and personal remembrances from this diverse group of mathematicians who were all at one time Bers's thesis students.

The Emmy Noether Lecture, tentatively scheduled for Friday January 27 at 10:00 a.m., will be delivered by Professor Mary Ellen Rudin, who will speak on "Paracompactness". A dinner will be held in her honor. The precise times and rooms for the panel and lecture will be announced in the AMS Notices.

AWM will give a party on Thursday, January 26 at 6:05 p.m. (or as soon as the AMS Business Meeting is over) in the pool area of the 4th floor of the Hyatt Regency Hotel. Come and meet your friends!

Local arrangements for the AWM program at the Louisville meeting are being made with the assistance of Carol O'Connor of the Department of Applied Mathematics at the University of Louisville. We also need help staffing the AWM table. Please come by and sign up for at least one hour during the meeting.

Albany Meeting. AWM held a panel and workshop on grants in conjunction with the AMS-MAA summer meeting in Albany in August. The speakers were Judith Sunley, Rhonda Hughes, Cora Sadosky, and Alice Schafer. At the workshop, participants were able to see a few successful grant proposals and to ask specific questions about grants for their individual projects. We all learned some useful ideas for future grant proposals.

As usual, our party was a great success, the only problem being the usual one of overcrowding.

AWM at the White House. Like that of most mathematicians, my idea of contact with the outside world is meeting an administrator at my university or talking to someone at the NSF. Nevertheless, in early September I received a Mailgram from the White House inviting me to a briefing and luncheon in honor of American Businesswomen's Day. Despite my first impulse to save time and money by not going, I found myself at the Executive Office Building in Washington on the appointed day, wondering what would happen. The assembled group of women was smaller than I expected (less than one hundred), and after meeting a few of the others it was clear that the invitees were all

presidents of women's professional organizations, from the Association for Women Geoscientists to the Society of Women Dentists. I was one of the few women from academia (and perhaps the only one representing an organization consisting mainly of university and college people.)

Of course I knew that the purpose of this event was an attempt to close the well-publicized "gender gap" but I was curious who would speak about what to this diverse group. The first speaker, Secretary of the Treasury Donald Regan, set the tone for the rest: a hard sell on the success of the Administration's economic policies, but delivered with humor. The other speakers were Bud Brown, Deputy Secretary of Commerce, Carolyn Gray of the Small Business Administration, and Faith Ryan Wittleson, Assistant to the President. The topics discussed, especially those very specific to business people, were far from the professional area of academic mathematicians or educators, but interesting nevertheless.

Lunch was held in a small dining room in the White House. There was a round of applause when President Reagan entered and sat down to join us for the meal. At my table I gleaned some interesting facts during the conversation, e.g. that when matched by profession, black women earn more money than white women. The President made a few bland remarks (which never made the papers) and then the event was over. All the invited women were then photographed individually shaking hands with the President and introduced to the Vice President. (If you think it is dull to teach calculus for the fifteenth time, imagine what it must be like to shake hands with a hundred strangers each day.) On the way out we each received a Presidential stickpin.

As I wait eagerly for my photograph with Reagan to arrive in the mail, I ask what this all means. Let us take the positive view. It was several years after the founding of AWM before the mathematical community began to give us serious recognition. Now, in our twelfth year, we are so well established that even the White House is aware of our existence and wants our good will.

Linda P. Rothschild
Department of Mathematics
University of California,
San Diego
La Jolla, CA 92093

THE WASHINGTON D.C. BLUES

by your editor, to fill the page

I don't know why we need an ERA--
We want to have our cake and eat it, too.
Tomorrow really is another day.
The petty pace we creep will surely do.

I don't know why we're all so hard on Watt.
For after all, he didn't have to choose
So many of us weirdos for that lot.
He could have picked two lame black women Jews.

And Ronnie's efforts aren't all misplaced.
I'm sure someday he'll close the gender gap.
Tomorrow all our problems will be faced--
Or is it time to take another nap?

But in the meantime, Linda gets free lunch.
Dear government: Gee, thanks a bunch.

REPORT OF THE TREASURER: August 3, 1983

Accounting for the period June 1, 1982 - May 31, 1983

Balance, June 1, 1982 \$17,128.77

Receipts

Dues - Individuals	\$11,043.91	
Families	960.00	
Institutions	2,800.00	
Advertising fees	660.00	
Contributions	811.55	
Interest	1,743.83	
Grants (1)	25,000.00	
Miscellaneous	<u>223.50</u>	
		\$43,242.79

Expenses

Wages & FICA (2)	\$6,409.22	
Newsletters (3)	5,097.40	
Dues and fees (4)	185.00	
AWM meetings (5)	758.07	
Operating expenses (6)	1,729.42	
Speakers' Bureau (7)	2,504.83	
Emmy Noether Symposium	1,935.73	
Miscellaneous (8)	<u>479.03</u>	
		\$19,098.70

Balance, May 31, 1983 \$41,272.86

- (1) AWM received a \$20,000 Sloan grant to fund the Speakers' Bureau and a \$5,000 grant from Raytheon to fund employed women high school teachers who wish to learn PASCAL and/or Data Structures.
- (2) Part-time secretary.
- (3) Typing, postage, and printing for 6 issues.
- (4) CBMS dues and Massachusetts incorporation fee.
- (5) Postage, refreshments, honorarium for Noether lecture.
- (6) Postage, phone, supplies, and duplicating.
- (7) Printing, postage, and wages for the Director of the Speakers' Bureau.
- (8) This includes \$350 in travel grants.

Membership statistics: Our mailing list totals around 1200, including institutions and members in Canada and abroad.

Respectfully submitted,

Donna Beers, Treasurer

AWM ELECTION

The continuing members of the AWM Executive Committee for 1984 will be:

Linda Rothschild, President, University of California, San Diego
Anne Leggett, Editor, Newsletter, Loyola University of Chicago
Joan Hutchinson, Member-at-Large, Smith College, Northampton, MA
Jeanne LaDuke, Member-at-Large, DePaul University, Chicago, IL
Vera Pless, Member-at-Large, University of Illinois, Chicago.

Martha Jaffe, Clerk, Framingham St. Coll., has agreed to continue in her position.

The slate proposed by the Nominating Committee to fill the vacated positions on the Executive Committee is:

Linda Keen, President-Elect, Lehman College, CUNY
Lynell Stern, Treasurer, Simmons College, Boston, MA
Vivienne Malone-Mayes, Member-at-Large, Baylor University, Waco, TX
Evelyn M. Silvia, Member-at-Large, University of California, Davis.

The slate has no one from the Midwest, but at the time it was chosen four of the five continuing members were from the Midwest (due to my recent move, Chicago is very well represented). The Bylaws procedures produced no further candidates. If this slate is approved by the membership, the geographic balance will be pretty good.

The Bylaws Committee (Bettye Anne Case, Bhama Srinivasan, and Jeanne LaDuke) presented several motions to the AWM Business Meeting at the summer meeting in Albany. All motions passed unanimously. Thus a number of Bylaws changes appear on the ballot.

1. Editorial changes: (1) "By-laws" to become "Bylaws" throughout the document.
(2) 1.4 Fiscal Year The Clerk should remove either shall or the s on ends.
2. Changes to fit present election procedures:
 - (1) New 4.4(a): The Clerk shall conduct elections in the fall of odd-numbered years.
 - (2) Old 4.4(a) to become 4.4(b) ... through old 4.4(d) to become 4.4(e).
 - (3) In 4.4(b) replace April 1 by February 15.
 - (4) In 4.4(c) replace March by January/February, and fall issue by November/December issue.
3. Changes to establish new appointive office of Meetings Coordinator:
 - (1) In 4.1 change to "...except for the Newsletter Editor and the Meetings Coordinator..."
 - (2) In 4.2, first paragraph, change to "...Treasurer, Newsletter Editor, Meetings Coordinator, and five ..."
 - (3) In 4.2, second paragraph, in two places change to "...shall appoint a Newsletter Editor and a Meetings Coordinator. ..."
4. Changes to make the terms Officers and Executive Committee synonymous:
 - (1) In 4.1 change to either "...except for the Newsletter Editor and the Clerk..." or "...except for the Newsletter Editor, Clerk, and the Meetings Coordinator...", depending on the outcome of the vote on 3.
 - (2) In 4.2, first paragraph, change to "...of the Executive Committee and the Clerk."
 - (3) In 4.2, first paragraph, change to either "...Treasurer, Newsletter Editor, Clerk, and five ..." or "...Treasurer, Newsletter Editor, Clerk, Meetings Coordinator ...", depending on the outcome of the vote on 3.

The changes in 1. are clearly editorial. The changes in 2. will keep the election procedure running smoothly. The position of Meetings Coordinator is important enough that the Coordinator ought to be a member of the Executive Committee (again to keep things running smoothly). Informally, the Clerk has been regarded as a member of the Executive Committee, but in the Bylaws only as an Officer. This distinction is needless; hence the changes in 4.

The ballot can be found at the end of the Newsletter. Please return your ballot by December 1, 1983, to AWM, P.O. Box 178, Wellesley College, Wellesley, MA 02181.

Biographies and statements from this year's candidates follow.

Linda Keen

Biography: Education, Ph.D. NYU. Research Interests--Complex Analysis, Kleinian Groups. Current Position--Professor of Mathematics and Computer Science, Lehman College, CUNY. Elected member AMS Council, AMS Nominating Committee.

Statement: I would like to see the AWM continue to serve as an important professional organization for women mathematicians. We have made ourselves noticed and respected. Women are regularly elected to the AMS council and nominating committee. They are asked to serve on advisory panels and as editors of mathematical journals. To continue our effectiveness I would like to see our Noether Lecture Series continue. Our various panel discussions at Joint Mathematical Meetings are usually well attended and complement the activities of the other organizations. I would like us to involve more women who are computer scientists in our organization. Many of our concerns, intellectual and professional, overlap.

The economic situation makes it clear that the next few years will not be easy ones. We will have to work together on all fronts to make sure that what gains we have made are not eroded as cutbacks are made. We will have to lobby, together with other organizations of mathematicians, for support for education and research.

Lynell Stern

Biography: I graduated from State University of New York at Stony Brook with a Bachelor of Science degree in Mathematics in 1972, then received my Master of Science degree in Mathematics from The University of Illinois at Chicago Circle in 1974, and then completed my Ph.D. in Optimal Control Theory at The University of Rhode Island in 1980. This is my third year at Simmons College where I am an Assistant Professor of Mathematics and Computer Science.

Statement: I feel that the AWM has made significant progress in helping women mathematicians in many areas and I hope that this continues. In particular, I feel it is very important to continue to provide a support system for those women who may be at institutions at which they are the only female mathematician. I think it is essential that we continue to make young women graduate students aware of our organization, so that they may enjoy the support we offer and learn from our experiences. In addition, I think we should try to get involved more at the high school level so that we can encourage the young high school women to take more math. Also, I feel that the AWM should encourage non-academic institutions as well as academic institutions to advertize job openings in our newsletter.

Vivienne Malone-Mayes

Biography: Vivienne Malone-Mayes, professor of mathematics at Baylor University, received the Ph.D. from the University of Texas (Austin, 1966). She has published several papers and participated on several panels including the AWM panel "Noether to Now - The Woman Mathematician" at the national summer meeting of MAA in Kalamazoo, Michigan in August, 1975.

Statement: I'd like to see AWM continue to monitor the treatment of women mathematicians and to pursue vigorously the goal of equal opportunity for women in the job market. In addition, I commend and would like continued the high quality programs sponsored by AWM at the national meetings of the Association.

Evelyn M. Silvia

Biography: I received my Ph.D. in 1973 from Clark University in Worcester, MA, and have been employed in the Mathematics Department at UCD since 1973. My areas of interest are Functions of a Complex Variable and Mathematics Education.

Statement: I have been a member of AWM since 1973. Because of the diversity of membership, I believe that AWM can fill a unique role of providing support and encouragement for women of all ages to continue their mathematics education or mathematics research. The needs for continued education efforts, increased visibility of women in mathematics, and encouragement for more active participation in professional organizations are still great. Though things have gotten better over the past ten years, we still have far to go--while guarding against losing ground.

I wish to be a member of the Executive Committee so that I can have a more direct involvement in the planning aspect of AWM's efforts towards more equal mathematical opportunity.

AMS ELECTION

Due to the summer travels of these candidates, their replies were received after the editorial deadline for the September-October issue.

Carlos Kenig

The main purpose of the AMS is to promote and support mathematical research. The society should assist mathematicians in their professional activities, publicize the importance of mathematics, and secure better public support for mathematical activities. This is particularly important in these times of dwindling resources for mathematics. The society should forcefully present the case for mathematics to government, industry and the general public, emphasizing the central importance of our science as a subject in its own right, and in its applications to science and technology.

E. R. Kolchin

The main purpose of the American Mathematical Society should be to promote mathematical research and other forms of scholarship. In this connection, the AMS should support efforts to improve the teaching of mathematics and should work to defend the professional status of mathematicians. The AMS should vigorously oppose discrimination against mathematicians based on race, gender or ideology and should support moves to counter such discrimination. Finally, the AMS should make clear its support of the human rights of persecuted mathematicians throughout the world.

Floyd L. Williams

There has been witnessed in the recent past a flowering and prolific stream of outstanding contributions by women to mathematics via their increased involvement. I would like to see every effort possible on behalf of the AMS, in conjunction with those already advanced by the AWM, to sustain and supplement this fortunate trend.

AWARDS, ETC.

Three women invited speakers at the ICM were listed in an earlier Newsletter. There were actually four. Congratulations are due to Nancy Kopell of Northeastern University for being chosen. Her title was "Forced and coupled oscillations in biological applications."

Grants for Scientific Computing Research Equipment for the Mathematical Sciences will be awarded by NSF. The equipment should be required by more than one research project, difficult to justify for one project alone, and cost at least \$10,000. The

principal investigator must be a department head or other person(s) responsible for the procurement, use and maintenance of the equipment. Proposals are due December 1st. Write NSF, Washington, DC, 20550 for NSF 83-69.

ROOMMATE MATCHING SERVICE

by Ruth Rebekka Struik, University of Colorado, Boulder, CO 80309

For details on the roommate matching service, see pages 3 and 4 of the March-April 1983 Newsletter. As of the present writing, I do not know the deadline for preregistration for the Louisville meeting in January. If you are planning to go to this meeting and want to find a roommate using this service, please send me your rectangular slip one month before the deadline for preregistration. If you read this after that deadline (highly likely, I realize), send me your rectangular slip anyway; I will add it to the sheet and send you a xerox of the list so far.

Nobody sent me a rectangular slip for the Albany meeting. Does this mean there is no interest in this service at all or that there is no interest in it for summer meetings? Or no interest in summer meetings in Albany?

Please let me know if this service helps you find a roommate, or if you have any comments or suggestion.

CAREER WORKSHOP

from Nancy Johnson, Chicago State University: AWM, jointly with the Association for Women in Science (AWIS), the Society of Women Engineers (SWE), and the Illinois Institute of Technology (IIT) Women in Engineering and Science Program, is planning a career workshop for high school girls and their math and science teachers. The workshop will be on March 7, 1984 at IIT in Chicago. This will be the second workshop sponsored by AWM, AWIS, and SWE. The first was held in March 1981.

EMMY NOETHER IN BRYN MAWR

Now the moving presentations given at the 1982 symposium in honor of Emmy Noether's 100th birthday are available to mathematicians everywhere, shedding light on the historical significance of the great algebraist's life and accomplishments. Emmy Noether in Bryn Mawr, Proceedings of a Symposium Sponsored by the Association for Women in Mathematics, edited by Bhama Srinivasan and Judith Sally, is now available from Springer-Verlag New York, Inc., 175 Fifth Avenue, NY, NY 10010 for \$28.00.

Various aspects of her work are described, including its influence on several areas of mathematics, and its reflection in research being done today. The majority of articles, scientific in nature, emphasize Emmy Noether's scientific contributions. The development of algebra in general, in Noether's time, is examined. Also included are talks given by people who knew her well, such as her nephew, Gottfried Noether, who gave an account of her life and career in Germany. These personal accounts round out the image drawn of the woman behind the work, her dynamism and inspiration.

The full list of authors is: Nathan Jacobson, Richard Swan, Judith Sally, Olga Taussky-Todd, Michele Vergne, Karen Uhlenbeck, Walter Feit, Armand Borel, Gottfried Noether, G.S. Quinn, R.S. McKee, M. Lehr, J. LaDuke, and U.C. Merzbach.

Also available is Emmy Noether, Collected Papers (in German), edited by N. Jacobson, for \$57.20.

INSTITUTE FOR RETRAINING IN COMPUTER SCIENCE

by Georgianna Klein, Asst. Prof., Dept. of Mathematics and Computer Science, Grand Valley State Colleges, Allendale, Michigan

I have just completed the most exhilarating and intellectually rich experience in my life. On August 5, I completed the first summer (8 weeks plus a one-week break) of a two-summer program for college mathematics teachers at the Institute for Retraining in Computer Science at Clarkson College in Potsdam, New York. The Institute is held under the auspices of a joint committee of the ACM and the MAA.

When I first considered applying to the Institute, I was hesitant to do so because I had been out of graduate school for twenty years. My mathematics skills were quite rusty, and ten years of rolling contracts and adjunct faculty status had undermined my professional self-esteem. Additionally, I didn't want to go back into a predominantly male classroom and suffer the isolation and perceived rejection I had experienced as a graduate student. Worst of all, my attendance would mean I would miss my oldest child's high school graduation since it occurred mid-week during the first week of classes at the Institute. I struggled a long time before deciding it was one night in her life, but the rest of mine that was at stake in my decision. Interestingly enough, she was very proud of me for being able to make the decision to apply.

Even after I was accepted, I was still nervous about going because I expected to be one of perhaps three or four females in a class of thirty. You can imagine my relief when the list of participants arrived, and I recognized nine female names.

Almost all the participants had Ph.D.'s in mathematics, and all were teachers at small colleges across the U.S. We came together to spend seven days a week working sixteen hours a day and loved it. (I must admit that the number of hours of work per day dwindled slightly by the end of summer.) We had class five days a week from 8:30-12 with a half-hour coffee break. Our periodic colloquia and seminars were held immediately after lunch. Courses this summer were Theory of Computation, Pascal, Science of Programming, and Data Structures. (Next summer's classes will include Computer Architecture and Assembly Language, Database and File Management, Operating Systems, and Compiler Design. Also during this academic year we will each work on a large programming project.) It seems impossible that we could work and study so many hours for such a sustained time this summer, but the support we had was fantastic.

The courses were carefully planned to take full advantage of our mathematical training, but generally geared at a level which nevertheless took into account our novice status as computer scientists. The quality of instruction was for the most part excellent, and the extremely capable faculty was almost constantly available for questions--sharing meals, recreation, and growing pains. Two of our instructors held an extra class after dinner, at our request, because they had access to information in which we were interested. Our colloquium speakers normally gave 1-2 hour talks, but were usually available for two days to facilitate informal learning.

We had ready access to the computer since thirty terminals were reserved for our exclusive use. We also had twenty-four hour a day access to our classroom (for individual or group study), the commons room and the terminals and printer.

The group of student assistants who read our papers and acted as consultants were well-trained, warm and supportive. To give an example, one night during the week before midsummer break, several of us were working in the terminal room past midnight. (The students were supposed to be off at eleven, but usually stayed as late as anyone worked.) I overheard the two young women on duty arguing over who would have the privilege to stay with us--full well expecting it could be 3-4 a.m. before folks went home. We finally went home so the students would leave.

But the most special support came from the director, Ed Dubinsky. In addition to coordinating and planning with the joint committee to provide the excellent instruction, carefully setting up the above-mentioned support systems, working with the college to provide comfortable living quarters, he displayed remarkable flexibility by continually seeking our suggestions, which he then incorporated in the program where possible. On top of all this he provided us moral support. Just when we would reach the point of

collapsing in tears from frustration, exhaustion, or both, or if we just drooped a little while walking down the hall, Ed would miraculously appear--whether it be in a remote study area in the library stacks, the terminal room or in our classroom building. He would prop us up until we had enough energy or faith in ourselves to walk alone again.

It would be very nice if I could tell you that on every account those at the Institute had somehow found a foolproof formula that guaranteed that the sexism we females sometimes suffer in graduate school would miraculously disappear, but it would be dishonest to do so. In fact incidents did occur in one class, but involved only a very small part of the program. The overall atmosphere was one of support and cooperation, and was very positive for women.

Participation in this program has been very positive for me beyond the specific learning I did at Clarkson this summer. I was granted a tenure-track position for the first time this fall. Since it is in computer science, I am sure that my participation in the Institute contributed heavily in this decision, particularly since the decision was made during the summer when the results of my participation could not yet be evaluated.

I had never taught any computer science classes before, and my previous training consisted mainly of two programming classes in COBOL. I am now teaching the introductory computer science class. As a result of the Institute I am also prepared to teach the second programming course and data structures. In addition, because information on the teaching of computer science, curricula, etc. was incorporated into each of our classes, I feel I am now in a position to begin to evaluate our curricula. (We have a computer science major in existence already; some participants are just starting majors at their schools.) After next summer, I should be in an even better position to do this. At that time I should be able to teach most of the courses in our computer science major, and because of my COBOL experience several in the information management major as well. It should be noted that because of the intensity of the program, we were not always able to spend as much time with exploration and implementation of our ideas as we would like; thus we will need to allot time for this in our schedules as we begin teaching new courses.

As I have mentioned, participation in the Institute is extremely arduous. Weekend leaves are not feasible. (Most of us worked at least some portion of both Friday and Saturday nights, and during the day on both Saturday and Sunday.) Thus I would recommend that any participant who has primary responsibility for the care of her/his children, even teen-agers, leave them at home. I think it would be extremely difficult, if not impossible, to do justice to the program if one had even minimal parenting duties.

In 1984 the program will be expanded to include one or two new groups of participants. I would be happy to talk to any persons, especially women, who are considering applying for next year's class. I can be reached at the Department of Mathematics and Computer Science, Grand Valley State College, Allendale, MI 49401, (616) 895-3629/3362.

For details about the program, you may write or call Ed Dubinsky, Department of Mathematics and Computer Science, Clarkson College, Potsdam, NY 13676, (315) 268-2382/2395 (office) or 265-2906 (home).

WOMEN IN THE AMERICAN MATHEMATICAL SOCIETY BEFORE 1900: part three of three

by Prof. Betsey S. Whitman, Florida A&M University

Another new member to the Society in 1897 was Mary Underhill who was elected at the annual meeting in December. Mary was a Quaker and grew up with seven siblings near Glen Head on Long Island. She attended the Friends Academy of Locust Valley, New York, and then went to Swarthmore College. She was active in the Somerville Literary Society. There were three such literary societies on campus, but Mary's was the only one which

was all-women's. Although Somerville was ostensibly an academic-oriented club, it apparently was also an early-day feminists' group. Named for an early women's leader and mathematician, Mary Somerville, the society devoted much of its energies toward raising money for the construction of a women's gymnasium for the college, which was actually built in 1894. In that same year, Mary graduated in a class of 45, one of two women students to receive a bachelor of science degree. She returned to Swarthmore the following year and earned an M.S. degree. When she joined the AMS she was a teacher at Georges School, in Pennsylvania, and later she taught in New York City schools. She retired from the New York public school system in 1929 and then taught in a private school in Auburndale, Massachusetts. She remained single all her life and died in July, 1956, at age 81.

Mary Frances Winston was the first American woman to receive a Ph.D. in mathematics from a European university. She received her degree from Gottingen in 1897, having studied there from 1893 until 1896. When she returned to the U.S. in 1896 with her dissertation, "Riemann's Case of Lane's Differential Equation," ready to be published, she found that no printer here could print the German symbols, so she had to send it back to Germany, and her degree was granted after it was published.

Mary grew up in Illinois and graduated from the University of Wisconsin in 1889. She taught for two years and then won the mathematics fellowship to Bryn Mawr in 1891. She studied at the new University of Chicago in 1892-93 and met Felix Klein at the International Mathematical Congress at the World's Columbian Exposition in Evanston, Illinois, in 1893. He urged her to come to Gottingen to study, although he could not assure her that she would be admitted. It was during her years in Germany that she knew both Annie Louise MacKinnon and Isabel Madison.

She was head of the mathematics department at Kansas State Agricultural College from 1897 until she resigned to marry Henry Byron Newson in 1900. She translated Hilbert's 1900 lecture to the Second International Congress of Mathematicians in Paris for the Bulletin of the American Mathematical Society in 1902, with the author's permission, under the title "Mathematical Problems." Her husband, acting head of the mathematics department at the University of Kansas, was listed 37th in the list of leading mathematicians in American Men of Science, in 1903. He died in 1910 of a heart attack and left Mary with three small children. She found a teaching position at Washburn College in Topeka, Kansas, in 1913, and in 1921 she became head of the mathematics department at Eureka College in Illinois. When she was invited to be a guest at the luncheon meeting of the combined AMS and Mathematical Association of America meetings in State College, Pennsylvania, in 1937, along with other women who had earned early Ph.D.'s in mathematics, she wrote that it would be a "great honor to be a guest at your luncheon. I am very humble about my claims as an early research student as I know how completely I have neglected that type of work these many years. ... I shall certainly be glad to see Annie MacKinnon Fitch again. She is the only person of my acquaintance who is such a worthless correspondent as I am--at least who has nearly attained the distinction of being my equal in that respect. In consequence, we have never corresponded in the least. ... Isabel Maddison was well known to me. ... Oh, yes, Ruth Gentry was always just ahead of me. When I applied for the Bryn Mawr fellowship in 1890, she was ahead of me, received the fellowship for '90 and '91, but Miss Scott wrote and told me to apply next year. In the fall of '93 when I was thinking of going to Europe, I was offered a temporary job at Vassar, Miss Gentry having been awarded the position but given a leave of absence for a year. I went to Germany instead. A few years after I went to Lawrence, I saw her name in a paper as visiting in Kansas City and wanted to arrange to meet her but I had two small children and put it off, and never saw her."

Mary was honored at the Women's Centennial Congress in 1940 as one of the 100 women who held positions not open to women in 1840. She retired in 1942 and lived until she was 90 in 1959.

The last three women elected to the AMS before 1900 were chosen in 1899. One of them was Carrie Hammerslough. She entered Barnard College in 1892 and was a good student throughout her college career. Her senior essay was titled "The Cartesian Oval," and at graduation in 1896 she received the Kohn Mathematical Prize of \$50. She stayed at Barnard the following year and received her M.A. in 1897. She studied further at Columbia from 1898 until 1904 and was also a private tutor in New York City until 1907.

In that year she married Edward Hymes. She had two sons and later became a volunteer teacher at the Crippled Children's Guild. According to the Columbia alumnae register, her husband had died by 1947 and she was deceased by 1957.

Emilie Norton Martin was also elected in 1899, the same year she completed her Ph.D. at Bryn Mawr. She had earned an A.B. at Bryn Mawr in 1894 and was a graduate student at both Bryn Mawr and Gottingen in Germany during the five years from 1894 until 1899. At the beginning of her graduate work, Professor Charlotte Scott wrote that "she has been reading Salmon's Higher Plane Curves, reserving difficulties for discussion. ... She is a very good student, with more independent power of work than most of her age; she is well able to grapple with difficulties on her own account, and ought certainly to be encouraged to devote herself to her mathematical work." Her physics professor, A.S. Mackenzie, wrote of her work in the lab, "Miss Martin progressed considerably but has not yet developed sufficient self-reliance to go on by herself. She is not handy about the use of instruments nor very full of mechanical resources."

In recommending her as a teacher in 1899, M. Carey Thomas, president of Bryn Mawr, wrote, "Miss Martin's work both as a graduate and undergraduate student was so excellent that she was awarded by the Faculty the Mary E. Garrett European Fellowship of the value of \$500 and spent the year '97-'98 abroad studying mathematics with Professor Klein of Gottingen. ... She is one of the best private coaches we have ever had and has got a great many candidates through our exams in Latin, although her specialty is mathematics. She is very able and if you did not object to her personality would, I feel sure, make a most excellent teacher of both Latin and mathematics. Her personality you would have to judge of yourself." From 1899 until 1902 she was a private tutor in mathematics and Latin and also taught in Misses Kirk's School in Rosemont, Pennsylvania. Then in 1902 she began as an instructor in mathematics at Mt. Holyoke College. She remained there until she retired as professor and head of the department in 1935.

During the greater part of her stay at Mt. Holyoke, she was a resident faculty member in Pearsons Hall on campus. In her annual department report at the end of the 1931-32 year, she wrote, "The new curriculum has had a strong effect this year upon the Department of Mathematics. Since it was no longer necessary for a student upon entering college to choose either an exact science or mathematics, ... the number of those electing the first courses in college mathematics fell off to about one hundred, making it possible to handle them in five sections. ... This year there were only five seniors claiming mathematics as a major subject; on the other hand there were twenty who had it as a minor. ... We always try to give enough courses so that a major student may follow her main interest. The divisions that we find most useful ... are algebra, including all the higher analysis, pure geometry whether synthetic or projective, and analytical geometry. ... There is one course that is given every other year that is always filled and that is the course on Probabilities. This is a discussion of the theorems that lie at the basis of all sound statistical work, so it is a favorite with the minors in mathematics who are taking a major in economics." She also indicated that she, other faculty in the department, and students majoring in science and mathematics had participated in several meetings of students and faculty in various colleges in the Connecticut Valley. She had given a talk at the fall meeting of the Connecticut Valley Branch of the New England Association of Teachers of Mathematics on "The geometric representation of functions of complex variables." Near the end of the 1931-32 report she was a little philosophical. She reported that a "noticeable feature" of her annual report was that "there is so little that seems new in any year." She explained that it was "unavoidable," since students needed to take their courses in sequence in mathematics. Then she continued, "It is in great part this uniformity of material from year to year that makes us welcome the opportunity to break through these lines by way of graduate students. ... The opportunity to work with such young women is too tempting to resist, but when those hours are added to a full undergraduate program, one wonders." Miss Martin retired after the 1934-35 school year and died the following February at the age of 66.

Ruth Goulding Wood was the other woman elected to membership in 1899. She was born in Pawtucket, Rhode Island, in 1875, and she earned a B.L. degree from Smith

College in 1898. In her class history letter written to her classmates in 1913, she indicated that her interests "have been simply and solely Mathematics and Smith College." She earned a Ph.D. in mathematics at Yale University in 1901 and then taught for a year at Mt. Holyoke College. In 1902 she returned to Smith as an instructor and remained there until she retired. During the 1908-09 school year she studied at Göttingen University in Germany, continuing her interest in non-euclidean geometry. In 1912 she attended the International Congress of Mathematicians in Cambridge, England. She was well-liked by students and faculty at Smith. In a tribute to her when she retired in 1935, a 1923 graduate wrote, "It is rarely that one encounters Miss Wood's peculiar ability to understand students, to know them often better than they know themselves, to see how their minds work, to draw them out and draw out of them qualities they never knew they possessed." The faculty meeting on June 8, 1939, after her death in May of that year, recorded, "Many generations of students have found stimulus in her friendly criticism, encouragement in her sympathetic understanding, inspiration in her scholarship. Her colleagues have profited by her ready cooperation, keen intelligence and substantial common sense. No one of them can forget her sturdy insistence on careful thinking and honest dealing." A year before she died, she entertained her class of 1898 in her garden which was full of beautiful flowers she had grown. In her will she left a trust fund to be turned over to the trustees of Smith College to assist in paying "one or more women professors in the mathematics department a salary equal to the highest salary paid to any member of the teaching staff of the College."

All of these women were remarkable. They pursued an education during a time when it was believed that women's brains were smaller than men's and that they were not suited for intellectual activity. These 22 women were some of the pioneers who helped to change the attitudes about the subordinate role of women that prevailed during the nineteenth century.

It is noteworthy that nine of them pursued the study of mathematics not only in the U.S. but also abroad in England and/or Germany. Furthermore, many of them stayed in their positions in mathematics departments for many years, rising to positions of respect and esteem as professors and/or heads of departments. They were committed to giving the best training in mathematics possible to new generations of students. They all excelled in both perseverance and scholarship, and they provide examples for present and future generations to admire.

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2. Bulletin of the New York Mathematical Society, 1893-94
3. Bulletin of the American Mathematical Society, 1894-98
4. Popular Astronomy, Vol. 30, 31; 1922-23; pp. 597-609; 25-35
5. Owens, Helen Brewster. Collection of correspondence and research housed in Schlesinger Library, Radcliffe College
6. Wellesley College, Florence Converse, Boston; 1938, pp. 101-2
7. Wild Turkeys and Tallow Candles, Ellen Hayes, The Four Seas Company, Boston; 1919
8. Williams, Mary Elizabeth. Collection of unfinished research housed in Schlesinger Library, Radcliffe College

WOMEN MATHEMATICIAN T-SHIRTS

T-shirts with Hypatia (chocolate on sand), Sonya Kovalevsky (purple on blue or yellow), and Emmy Noether (dark blue on blue or yellow) are available for \$6 plus 75¢

postage and handling. Sizes are S, M, L, XL. Catalog with other offerings also available. Write New Victoria Printers, Inc., 7 Bank Street, Lebanon, NH 03766.

WOMEN'S ENVIRONMENT FOR MATHEMATICAL RESEARCH

by Pearl Olson and Marianne Brown Nichols, Vermont College, Montpelier

We are in the process of writing a grant proposal to support the work of women in mathematics. We would like to get together a group of about thirty women, half of whom would be professional mathematicians; the rest might be graduate students finishing their dissertations, other graduate students, undergraduates and women who have their credentials but may never have gotten a start professionally. We are interested in creating a women's environment in which to do mathematical research. The tentative dates for this event are June 10th to August 3th, 1984. If you are interested in attending, please send us by February 1st a resume and a brief description of how you might like to use the time, what your research project might be or where your interests lie. Please include a brief personal-professional history emphasizing what you perceive as aspects of your life that have encouraged and enhanced your mathematical development and those parts that were hindrances. We encourage groups of women interested in doing research together on common topics to apply as groups. At this point, funding is uncertain. We see three possible scenarios: We might get complete funding for next summer, in which case all the participants would be expected to fund their own travel expense. We might get partial funding for next summer, in which case participants might have to provide up to \$100 per week for room and board in addition to their travel expenses. We might get insufficient or no funding in which case we would put the program off until the summer of '85. You should indicate in your application whether you could afford the \$100 a week if that is the way the situation develops. Please send application materials to: Dr. Pearl Olson and Dr. Marianne Brown Nichols, Vermont College, Montpelier, VT 05602.

The following is excerpted from our grant proposal. It will give you some idea of what we have in mind.

Problem statement

After the death of Pythagoras in 500 BC, his wife Theano and two of his daughters assumed the role of administering his school which, according to one source, at least twenty-eight women attended.¹ Regarding this period in Greek history, Mozans says:

Never before nor since did such a wave of feminine genius pass over the fragrant valleys and vine-clad plains of Greece. Never in any other place or time ... was there a more perfect flowering of female intelligence of the highest order.²

As far as we have been able to determine, this was the first and last time in recorded history that a sizable group of women came together for more than a few days with the expressed intent of researching and teaching mathematics. Is it any coincidence that the much acclaimed Golden Age of Greek philosophy and mathematics followed shortly after this release of female energy into the academic world?

According to "The Radcliffe Quarterly" (June, 1983), although only 2% of college graduates are from women's schools, they produce one-third of the women scientists, showing the ability of an essentially women's environment to develop the confidence and skills necessary for women to hold their own in what are still largely male-dominated environments.

The Bunting Institute at Radcliffe, established in 1960, remains a powerful example of the effect of a women's environment on academic research in a variety of fields. Validating the work of women, this institute provides the only established think tank

for women in the United States today. Marianne Brown Nichols, co-writer of this grant proposal, spent two years with support from this establishment and was ultimately able to complete her dissertation as a result of the encouragement and understanding from this institution for the problems involved in being both mother and research mathematician.

The women's movement has had its effect on the field of mathematics. According to the Chronicle of Higher Education, November 18, 1981: in 1960, 6% of the Ph.D.'s in mathematics were awarded to women. In 1970 this rose to 8.5%, and in 1980 to 14%. In computer science, the results are even more startling, rising from 2% in 1970 to 42% in 1980. This may be attributable to the newness of the field, giving women a more equal chance from the beginning.

Yet, while the women's movement has had an effect on a number of scientific fields, including mathematics, progress by women within those fields has been made in spite of the lack of a nurturing climate. Competition for advancement within institutions of higher education and within industry is painfully keen. However, qualified and ambitious women mathematicians do not have the advantages of the "old boys' network" which so frequently assists their male counterparts in moving along in their careers. Mathematics is perceived, as in fact it is, as predominantly male.

According to Julia Sherman's summary of research on women and mathematics, this perception is inspiring to young men and threatening to young women. Virtually all the recent research on women in mathematics agrees on this point: reducing this stereotype of mathematics as a male domain is essential, if the intellectual resources of women interested in the field are to be maximally developed.³ Providing opportunities for the development of a nurturing climate for women mathematicians and for the development of professional linkages which will equip women to compete on a more equal basis within their field is one of the first steps to be taken in eliminating the stereotype.

In a study of creative women mathematicians, Ravenna Helson, using a variety of tests including the California Personality Inventory (CPI), demonstrated that creative women mathematicians had personality traits more closely resembling the traits of writers (male and female) than those of male mathematicians. Women, for example, do mathematics more for pure pleasure than for competition. Given the highly competitive nature of most mathematics departments, in the light of this research, they are likely to be uncomfortable places for creative women mathematicians. These women were also found to lack the social confidence and discipline that creative male mathematicians possess. The women were more flexible, individualistic, introverted and had strong symbolic interests.

Helson also noted that although in age at Ph.D. and age at submitting the first published paper, the women did not differ from the men, at the time of the study the men had published more, held more prestigious positions, were more likely to teach graduate students. Putting this together with the research of Julia Sherman showing that women perceive themselves as having more at risk in entering the mathematics profession suggests strongly that women need a different and new environment for developing their mathematical capabilities than is provided by the traditional university setting, an environment that will reflect and support these personality differences. Helson concludes, "Even under optimal circumstances, creative women might be expected to make a contribution different in type from creative men."⁴

In fact, Dr. Frances Rosamond's current research and associated literature indicate that there is a discrepancy between what males and females see in a mathematics problem. Dr. Rosamond says, "My experience forces me to consider the possibility of a 'women's view of mathematics' and what it might mean when women are encouraged to ask and pursue their own questions." (A&M Newsletter, vol. 13, no. 5)

Premise

The field of mathematics will be significantly impacted upon and enlarged, with new dimensions added, by providing women mathematicians with increased professional and collegial support and linkage, and with a generative atmosphere which will permit new questions to be posed and researched in a climate of support and encouragement.

In so doing, a whole new thrust of mathematics and mathematics education will result, which will have implications both for research itself and for the ways in which mathematics is approached during elementary, secondary, college and post-graduate education.

Approach

A research model will be developed which will serve to measure the professional and personal effects of the project on the women mathematicians involved. Over a period of five years, data will be collected and the annual progress reports will be made. A project director will be hired to structure, organize and implement the program, and to develop and apply, utilizing consultants as appropriate, the evaluation model to test the premise.

It is anticipated that there will be four stages of project activities. The first stage will entail information dissemination about the project to women mathematicians, undergraduate and graduate students. Data about these groups will be collected, including personal and professional histories.

The second stage will include the operation of an eight-week residential summer symposium to be located at Norwich University in 1984, at which a select number of women mathematicians and women mathematics students throughout the country will come together to study, present papers, attend lectures by prominent women mathematicians and pose and research questions of interest utilizing the library resources of Norwich University and nearby Dartmouth College. Undergraduates and graduate students will attend, facilitating their entry into the profession and providing early professional contacts. By paying attention to each other's work, women will gain an appreciation for their own work and the work of other women. Daily group sessions will be conducted to give each participant an opportunity on a daily basis to present problems as well as successes with work in progress. Mini-courses and discussion groups will be led on such topics as: How to Study Mathematics, How to Pose Problems, How to Prepare and Submit Papers for Publication, How to Juggle Home, Family, Research and Teaching. Other mini-courses will also include specific content material in mathematics. Currently, there appears to be strong interest in algebraic geometry, combinatorics, number theory, Hilbert's 13th Problem and the Poincare' Conjecture.

Child care, meals and other such essentials will be provided, thus freeing participants from many of the demands which often interfere with concentrated research. Of the over fifty responses to an initial interest survey sent to 120 individuals chosen from the Speakers' Bureau of the Association for Women in Mathematics, ten indicated a need for child care. Clearly the provision of such a service will free women to carry out academic activities in a manner impossible under other circumstances.

At the completion of the symposium, exit interviews will be held and results recorded. Information collected will include, but not be limited to, reactions to the impact of various program components, results of individual research and efforts, participants' short and long range personal and professional goals, and a reflection of the ways in which increased professional networking can be of assistance. Standardized assessment tools may also be used during this stage.

The third stage of the project will entail increasing networking activities through information collection and dissemination. Newsletters will be prepared and distributed, including such information as professional employment opportunities, available research funding, research findings, and other matters of interest to the group. Tracking of participants will also take place through the distribution of periodic follow-up questionnaires, telephone interviews and correspondence. Data will be collected from participants, with particular emphasis being placed on research efforts, professional advancement, and personal esteem levels.

The fourth phase will involve data evaluation and dissemination of results. Recommendations for continued or new activities to strengthen professional linkages among women mathematicians and mathematics students will be assessed and implemented as possible and appropriate.

Footnotes

1. Mozans, H.J. Women in Science. (New York: D. Appleton and Company, 1913) p.7.

2. Osen, Lynn. Women in Mathematics. (Cambridge, MA and London, England, 1974) p. 16.
3. Fox, Lynn H., Linda Brody and Diane Tobin. Women and the Mathematical Mystique. (Baltimore and London: The Johns Hopkins University Press, 1980).
4. Ibid.

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LES FEMMES DANS LA SCIENCE BY A. REBIÈRE: part four of four

translated and edited by Lori Kenschaft, Swarthmore College

"As soon as she (the woman) wants to emulate the man, she is nothing but a monkey."

--Joseph de Maistre

One has seen some women who were very wise, as they were warriors, but there has never been a female inventor.

--Voltaire

Somewhat rarely, it is true; but never, that is saying too much.

Maté

The nautical telescope was invented by Mme. Maté and improved by her daughter. This instrument permits an examination of the injuries to a vessel without forcing it to go to a dock; it resulted in great progress in naval tactics.

Roebbling

When the Brooklyn Bridge, this gigantic work which has been called the marvel of the nineteenth century, was constructed, it was a female engineer, Mme. W.A. Roebbling, who presided over a portion of the work during an illness of her husband, who was in charge of this marvellous construction. Also, it was she who was given the honor of inaugurating the monument and of being the first to cross the bridge.

Carlyle (Annie), née Welsh

"Her studies were brilliant. She had such a remarkable disposition for science that she was sent to a mathematics class for boys, where she took the head."

--Arvède Barine, La femme d'un grand homme (Revue des Deux-Mondes, October 15, 1884)

Cereta-Serina (Laure)

According to Napoleon Petrucci, Delle donne illustri di Padova (1840):

"Belonging to an illustrious family, Laura at a young age showed exceptional talent. At the age of eighteen, she defended public theses in metaphysics; at twenty, she taught at the University, where her philosophical and theological learning, as well

as her knowledge of mathematics, was admired. She died before the age of thirty, at the beginning of the sixteenth century."

Lalande

Marie-Jeanne-Amélie Harlay (1760-1832), became by her marriage the niece of the great Lalande. Gauss knew and valued this woman.

"My niece, said Jérôme Lalande, Lefrançais de Lalande, helps her husband in his observations and draws conclusions from them by the calculus; she has catalogued ten thousand stars, she has given three hundred pages of time-tables, immense work for her age and for her sex: they are in my Abrégé de navigation."

"One of the rare women who has written scientific books. She has published tables for finding the hour while at sea, by the height of the sun and stars. These tables were printed in 1791 by the order of the National Assembly. The same year, she brought to Cassinio her first observations at the College de France. In 1799, she published a catalogue of ten thousand stars, sorted and calculated."

Mme. d'Alg. Anthologie féminine

Madame Lefrançais de Lalande had a daughter, of whom the grand-uncle spoke thus:

"This child of astronomy was born on January 20, 1790, the day that we saw for the first time in Paris the comet which Miss Caroline Herschel had discovered; therefore, the infant was given the name Caroline; her godfather was Delambre."

V. Jarrin Lalande et la Bresse au XVIII^e siècle. Bourg, 1869.

Bielischeff

This Russian woman, née Vargounin, after having finished her studies at the Sorbonne, opened in St.-Petersburg courses in mathematics for young people. She has published a work on the equilibrium conditions of a flexible fiber.

Behn (Alphara or Astrea)

English (1640-1689) dramatist, novelist, stateswoman, but also philosopher, theologian, and mathematician. She translated la Pluralité des Mondes, by Fontenelle. Gibbon called her the incomparable Behn. She was interred in Westminster, in the tomb of kings.

Morelle (Julienne)

"Born in Barcelona in 1592, she was at age 17 so firm in the principles of dialectics that she came to Lyon to defend theses in logic, mathematics, and ethics: she knew fourteen languages and had an equally good understanding of theology, jurisprudence, and music. She travelled the scholarly world in a habit and went to challenge the most skillful jurists. Repelled by the vanities of the century, she retired to the monastery of Sainte-Praxède in Avignon and lived there to the age of 62."

Barjavel, Bibliographie du Vaucluse

Périer

1620-1687 — Gilberte Pascal, who became Mme. Périer, is the older sister of the great Pascal. Here is what her daughter, Marguerite, said of her: "My mother is beautiful and clever, she has lots of spirit. She was raised by my grand-father, who, from her most tender youth, took pleasure in teaching her mathematics, philosophy, and history." Monsieur Cousin, in his life of Jacqueline Pascal, said of Mme. Périer:

"That which recommends her to posterity is the so well-known life of her brother Pascal. This life is wonderful, it makes one love Pascal, and it was his sister who gave him this precious office. She stood aside as much as she could, allowing only her brother to appear. She loved him tenderly, and grieved, without daring to say so, over his apparent indifference."

Mme. Périer was interred at Saint-Etienne-du-Mont, at the side of her brother Blaise Pascal.

Lettres, opuscules, et mémoires of Mme. Périer and of Jacqueline, Pascal's sisters, and of Marguerite Périer, his niece, published in the original manuscripts of M.P. Faugère, 1845.

Agnodice

It was expressly prohibited for Greek women to practice any facet of medicine.

"Agnodice was well instructed by the doctor Herophile. To be able to practice, she disguised herself as a man."

--Biographical pamphlet from the Roret Collection

"An Athenian woman, Agnodice, was the first to practice medicine."

--A. Renaud. A New History of Art and Science, p. 257.

Netty D.

"I have known for several years a young woman of great merit who perhaps does not have an extraordinary aptitude for mathematics, but who has nevertheless studied it very successfully. Her spiritual director, the abbot Hetsch, the vicar-general of Orleans, has, during long years, prepared material for d'une philosophie de l'unité; he died before he finished writing it. Mlle. Netty D. gathered his scattered notes, ordered them, and made them into a book under the title, L'abbé Hetsch by Mlle. N. (Paris, 1885). This is perhaps the most serious and most philosophical book written by a woman in the nineteenth century: it had two editions."

A (the man) and B (the woman) leave from a point, C, A with a speed of 100, and B with a speed of 60. When will B overtake A? Solution: "Never!"

--Strindburg, Revue Blanche, January, 1895,
p. 18

A and B do not leave from the same point and do not have speeds such as these.

A VISIT TO HANOI: WOMEN IN MATHEMATICS IN VIETNAM

by Ann Hibner Koblitz, Lecturer, Honors Program, University of Washington

This April, my husband and I made our second visit to Vietnam since the liberation of the South in 1975. We were guests of the Hanoi Mathematical Institute, and stayed in Hanoi for four weeks. During that time I gave English lessons at the Institute, lectured on Sofia Kovalevskaja and the history of mathematics and the sciences, and had private discussions with several people on history of science and the question of women in the sciences.

The situation in Vietnam with regard to women in mathematics and the sciences is not good. Conditions in Vietnam are hard, there are not enough day care facilities to meet the demand, and if a child is sick it is naturally assumed that the mother will miss work to care for it. These circumstances, combined with traditional Asian views of the role of women, and scarce resources for improvement of material life, lead to discrimination against women in the workplace. It's the usual story. Women are often not encouraged to go into the sciences because it is assumed they will not have enough time to devote themselves to their studies. Women are frequently passed over for promotions and responsible positions because of their supposedly high rate of absenteeism. Women are rarely chosen for the honor of being sent abroad to study because they have to stay home to care for their families or because their education will purportedly be wasted when they begin a family and have to drop out of research.

There does not seem to be much awareness of the problem among leading scientists. Most mathematicians I talked to had a hundred and one reasons why it was logical for the situation of women to be as it was. When I tore through these "reasons" and showed them for the excuses they really were, the response was usually tacit agreement with my reasoning. But then they would tell me that it was all a result of Vietnam's general backwardness. Vietnam is only just now emerging from feudalism, they would say. These things take time. Women's status will improve along with economic conditions as a whole, I was told.

Constant repetition of these fatalistic utterances exasperated me considerably. Fortunately, however, toward the end of my stay I began to encounter other viewpoints. For one thing, I visited the Biological Institute, and discovered that there the situation is far better than in mathematics. The Institute's employees are about half women. More significantly, two of their five doctors of science (a degree higher than the American Ph.D.--more equivalent to a full professor) are women, and a third is about to return home from abroad with her degree.

The second factor that prevented me from becoming too discouraged over the attitudes toward women was that I talked with some people who are concerned about the problem. More importantly, they are taking concrete steps to improve the situation.

Professors Nguyen Dinh Ngoc, Hoang Xuan Sinh, and Doan Quynh, all mathematicians, are particularly interested in the issue of women in the sciences in Vietnam. Professor Ngoc (to whom I talked most often) is affiliated with Hue University and the Hanoi Mathematical Institute; Professors Sinh and Quynh are at the first Hanoi Pedagogical University. Professor Sinh, I was told, is the only woman full professor in the sciences in all of Vietnam. (A full professor there is a higher, more prestigious rank than it is in America--there are less than fifty full professors in the whole country.) She was a student of Schwarz and Grothendieck in Paris, and works in homological, homotopic and categorical algebra. Some AWM readers may possibly remember meeting Professor Sinh at the ICM in Vancouver in 1974. She was one of the two North Vietnamese delegates to the Congress.

Professor Sinh is a member of the National Assembly of Vietnam, and a leader of the Vietnamese Women's Association. Recently, she and Professor Ngoc helped organize a convention of women scientific workers in Hanoi. The convention was of course inspiring for the women who attended, but the discussions there underlined how much needs to be done. Specifically, Professors Sinh, Ngoc, and Quynh are concerned about the low numbers of women entering mathematics and the sciences and going on to graduate work in those disciplines. They feel they need an organized program to encourage women as students, and inquired closely as to what was being done in America in this regard.

They are especially concerned with the need for role models for women students. That is why they were so interested in Kovaljevskaja, and why they were fascinated with the idea of the AWM. They want to collect as much information as possible on the successes of women in the sciences, and on women's experiences as science students. They hope to disseminate this information in the schools, and thus catch young girls' attention before they have been channeled into non-scientific areas.

Another important reason why they want to gather statistical information and examples of women's work in the sciences is for the education of the male population of Vietnam. Professor Ngoc noted that they have to combat commonly held notions of woman's role, her supposed bent for domesticity, her lack of intellectual creativity, etc. They have to confront traditionalist stereotypes with hard facts--preferably based on the past experiences of more developed countries like the U.S.

Professor Ngoc also recognizes the need for general social education of the young people of Vietnam. He realizes that if the situation with regard to the professions improves without analogous changes in the social structure of the family, then women will be faced with the same problem they have in many other countries. They will work a full day on the job, and then come home and have to deal with all domestic tasks as well. In the North, which has been free of colonial domination for thirty years, men seem to share some of the household responsibilities. But in the South, which was under a repressive patriarchal regime until 1975, the situation is very bad. And things will not improve unless care is taken to encourage young boys to view the home as their responsibility as much as that of their sisters.

Professor Ngoc was extremely interested in feminist issues in the United States, Europe, and the Soviet Union. We talked quite a bit about various feminist debates and controversies, and about the Soviet Union's claim that they have no need for a feminist movement because they have already solved the woman question. We agreed that Vietnam will have to be careful to avoid the pitfall of giving full political and legal rights to women while retaining an archaic family and social structure.

All in all, my talks with Vietnamese mathematicians on the question of the participation of women in mathematics and the sciences were interesting and informative. Professor Ngoc and the others have a lot of enthusiasm, so in one sense prospects for improvement are good. But the limits imposed by scarce material resources are a great hindrance to progress for women.

Of course, the AWM as an organization cannot help anyone on a large scale. But there are areas in which insignificant monetary outlay on the part of individual AWM members would make a substantial contribution to Vietnamese efforts to encourage women in mathematics and the sciences. For example, Professors Ngoc, Sinh and Quynh have no foreign currency allocations for the purchase of journals and books on the question of women in science. I have arranged for Professor Sinh to become a member of the AWM and receive this Newsletter, and have sent several relevant volumes on women and the history of mathematics to Hanoi. But that only scratches the surface of the problem.

Professor Ngoc has requested that AWM members send copies of their publications (research, pedagogical, polemical, and popular) to Professor Sinh for the Pedagogical University library. (There are more women there than at the Polytechnic Institute or Hanoi University.) This will serve the dual purpose of increasing the Hanoi store of mathematics-related material (their libraries are poor in current literature), and giving Vietnamese women numerous examples of women as mathematical professionals. This can be done at virtually no cost. If you send reprints to me, I will see that they get to Vietnam. Through past experience, we have found that it is much more reliable to send material with American scientists visiting Vietnam or Vietnamese scientists returning home than it is to trust either the American or Vietnamese post office. Through this informal courier system, I can get mail to Vietnam in a month or two, which is no slower and far more dependable than the ordinary mails.

Also, if anyone has a collection of journals or books which she no longer needs, perhaps she would consider donating it to Vietnam. (The donation could be made as a tax deductible contribution to the U.S. Committee for Scientific Cooperation with Vietnam.) Such gifts would be greatly appreciated, and put to good use.

The Vietnamese mathematical community is eager for contact with colleagues in the West. It would be good if at least some of these contacts were with women mathematicians. Those interested in attracting more women into the sciences and mathematics are particularly eager for ties with members of the AWM. They hope that correspondence will eventually lead to closer affiliations and perhaps joint projects. One idea is that a representative of AWM visit Vietnam. Another idea is that Professor Sinh could visit the United States. Such visits take time to arrange, but they are possible, especially if there is enough interest on the part of American mathematicians.

Those AWM members who work, visit, or attend conferences in Europe perhaps might consider inviting their Vietnamese colleagues to participate in professional activities there. The United States government severely restricts the number of Vietnamese scientists given visas each year: the State Department sets an absolute limit of ten annually, and they are only permitted short visits. But such restrictions are not imposed by European governments, for the most part. France, for example, supports the visits of numerous Vietnamese mathematicians and mathematics students each year. It would be helpful if AWM members in Europe could inquire into such possibilities in their own countries, and see to it that Vietnamese women are invited to attend conferences and visit mathematical centers in Europe.

A more ambitious project, impracticable at this time because of the lack of diplomatic relations between the U.S. and Vietnam, is the possibility of having a promising Vietnamese woman student come to the U.S. for six months or a year as part of her graduate or postgraduate training. Such a visit would be of immeasurable value for her future career. She would have the benefit of contact with the centers of most advanced research, and would have the encouragement of seeing far more women scientists than she would in her own country. Moreover, the fact of the visit itself would be significant for her status in Vietnam. Study abroad, especially in the West, has tremendous prestige. But this is a project for the indefinite future.

If anyone has publications they would like to send to Professor Sinh, or if you would like further information on people's fields, how to get in touch with them, the

possibilities for visits in either direction, etc., please write to me at:
6547 17th Avenue N.E.
Seattle, WA 98115.

DEADLINES: Nov. 23 for Jan.-Feb., Jan. 24 for Mar.-Apr., Mar. 24 for May-June
AD DEADLINES: Dec. 5 for Jan.-Feb., Feb. 5 for Mar.-Apr., Apr. 5 for May-June
ADDRESSES: Send all material except ads to Anne Leggett, Dept. of Math. Sci., Loyola
University, 6525 N. Sheridan Rd., Chicago, IL 60626. Send everything
else, including ads, to AWM, Box 178, Wellesley College, Wellesley,
MA 02181.

Job Ads

Institutional members of AWM receive two free ads per year. All other ads are \$10 apiece and must be prepaid. The vacancies listed below appear in alphabetical order by state. All institutional members below are Affirmative Action/Equal Opportunity employers.

California State University, Fullerton. Math Dept. Chair of Selection Committee.
Several lectureships 84/85. Required: outstanding teaching qualifications and Ph.D. Prefer applicants with research experience or backgrounds in applied math. Rank & salary depend on experience & qualifications. Send vita by 3/15/84.

San Diego State University. Computer Science (1) Two tenurable positions. Rank: open. Salary: \$20,868-\$36,540. Required: Ph.D. by fall, 1984; research background & good teaching references. Teach graduates and undergraduates, direct master's research & conduct own research. By 1/15/84 send vita & 3 references to Comp. Sci. Search Committee, Dept of Math Sciences. (2) Computer Education. Tenurable Asst. or Assoc. Professorships, fall, 1984. Salary: \$20,868-\$28,884. Required: Ph.D. by fall, 1984 in comp. sci, comp. education or math education, good teaching references, relevant research background & interest in curriculum development related to computers. By 1/15/84 send vita & 3 references to Comp. Education Search Committee, Dept of Math Sciences. (3) Postdoctoral Lectureship (2 year) fall, 1984. Purpose is to encourage research activities of person who has recently completed Ph.D. in pure or applied math. Salary: \$19,044-\$22,868. By 1/15/84 send vita & 3 references to Postdoctoral Search Committee, Dept of Math Sciences. (4) Numerical Analysis. Tenurable faculty positions. Requires Ph.D. by fall, 1984. Rank: open. Salary: \$20,868-\$36,540. Competence & strong interest in research & publication in math, commitment to teaching & curriculum development in math. Teach undergraduates & graduates numerical analysis & comp. sci, direct master's projects & carry out research & scholarly work. By 1/15/84 send vita & 3 references to Numerical Analysis Search Committee, Dept of Math Sciences. (5) Mathematics. Tenurable faculty position. Rank: open. Salary: \$20,868-\$36,540. Competence & interest in research & publication in math, commitment to quality teaching & curriculum development in math. Teach graduates & undergraduates, direct master's projects, carry out research. By 1/15/84 send vita & 3 references to Math Search Committee, Dept. of Math Sciences.

University of California, Berkeley. Dept of Statistics, Berkeley, CA 94720. (1) Tenure track Asst. Professorship, fall, 1984. Must have strong research potential, preferably in statistics. By 1/15/84 send resume & names of 3 references to Leo Breiman, Chair, Personnel. (2) Assoc. or Full Professorship (tenured) fall, 1984. Required: distinguished research record. By 1/15/84 send inquiries to Leo Breiman.

University of California, Davis. Dept of Math, Davis, CA 95616. Two tenure track positions effective 7/1/84. Rank determined by qualifications. Fields: 1) Pure Mathematics--prefer functional analysis and/or differential equations; 2) Applied Mathematics--prefer research interests allowing collaboration/consultation at UCD (e.g. biological applications, engineering mathematics, or operations research). Require Ph.D. in Mathematics or closely related field and evidence of strong potential in research and teaching. Send application, vita, and 3 letters of recommendation to Carlos R. Borges at address above, POSTMARKED NO LATER THAN 1/5/84 with files completed by 1/20/84. One position may be at senior level.

University of California, Santa Barbara. Mathematics Dept., Santa Barbara, CA 93106. Professor James B. Robertson, Chair. (1) Anticipate several temporary, part or full time, teaching appts during 84-85 year. Anticipate both part time visiting positions & full time visiting lectureships at a junior level (with possibility of renewal up to maximum of 2 years). Prefer active research mathematician or statistician with certifiably good teaching skills. We encourage applicants in all research areas. Please send vita, publications list, letters of recommendation on teaching & research, and financial requirements by 2/15/84 to Chair. (2) Tenure track Asst. Professorship in Statistics. Required: outstanding research potential and demonstrated excellence in teaching. Exceptionally well qualified persons whose background & experience warrant a tenure-level appt are also encouraged to apply. By 1/15/84 send resume and 3 letters of recommendation to Chair. (3) Asst. Professorships in general areas of nonlinear differential equations and global analysis. Required: outstanding research potential & demonstrated excellence in teaching. Exceptionally well qualified persons may be considered for tenure level appts. Would especially encourage applicants in following areas: dynamical systems, global or qualitative theory of nonlinear partial differential equations or modern mathematical physics. By 12/15/83 send resume & letters of recommendation to Chair.

Connecticut College, New London. Dept of Mathematics. Asst Professor in Math/Comp Sci. Very selective, coeducational, private, liberal arts institution (1600 students) located on Long Island Sound midway between New York City and Boston. We invite applications from Ph.D's committed to scholarship and teaching (3 courses per semester). Courses are in introductory and advanced computer science and mathematics. Our computer resources include a PRIME 550II, a PDP11/44 (UNIX), and several micros. Starting date of either 1/84 or 9/84 is acceptable. Send resume & 3 letters of recommendation to: S. Wertheimer, Chmn., Math. Dept., Box 1614, Connecticut College, New London, CT 06320.

Wesleyan University. Dept of Mathematics, Middletown, CT 06457. Ethan M. Coven, Chmn. Tenure track Asst. Professorship in traditional math; analysis or probability preferred, but applications from any area are welcome. Four-year initial appt. 84/85. Teaching load 6 hours per week. By 1/5/84 (earlier if possible) send vita & 3 letters of recommendation to Search Committee, Dept of Math.

University of Florida. Dept of Math, Gainesville, FL 32611. Jean A. Larson, Chmn., Search & Screen Committee. Asst. Professorship, Aug., 1984. Required: demonstrable research potential. Prefer applicants with postdoctoral experience and research interests in numerical analysis, partial differential equations, linear algebra, topology & logic. Salary competitive. By 1/15/84 send resume, list of publications & have 3 letters of reference sent to Chmn, Search and Screen Committee.

University of Florida. Dept of Statistics. Tenure track Asst. Professorship fall, 1984. Strong research interests in statistics & biostatistics & ability to teach undergraduate and graduate statistics courses. Salary commensurate with experience. Have resume, transcript & 3 letters of reference sent by 1/31/84 to Alan Agresti, Stat. Dept., 502NSC, Univ. of Florida, Gainesville, FL 32611.

Emory University. Dept of Math & Comp. Sci., Atlanta, GA 30322. Paul Waltman, Chmn. (1) Emory University is enlarging this dept. Teaching environment (small classes, able students, no remedial programs) is unusually good. By 2/1/84 send vita, publication list & 3 letters of reference to Chmn. (2) Professorship or Assoc. Professorship beginning 8/1984. Required: established research record, proven ability to work with graduate students & ability to help develop graduate program. Preferred areas are differential equations, numerical analysis or applied math. By 1/1/84 send vita, publication list & names of 3 references to Chmn.

University of Illinois, Chicago. Dept of Math, Stat. & Comp. Sci., P.O. Box 4348, Chicago, IL 60680. Louise Hay, Head. Possible positions for applicants with excellent research record & ability to direct graduate students. Salary and rank commensurate with qualifications; prefer applicants with postdoctoral experience seeking tenure track position. Send resume & have 3 letters of reference sent to Head. Possible visiting positions for one or more quarters. Send resume, letter indicating desired time period & arrange for 2 letters of reference and a letter of support from a Dept. member at UIC.

Purdue University. Dept of Math, West Lafayette, IN 47907. M.S. Baouendi, Head. (1) Several regular or research asst. professorships 8/1984. Required: exceptional research promise & excellence in teaching. (2) Possible one assoc. prof/professorship 8/1984. Required: excellent research credentials. For all jobs send resume & 3 letters of recommendation to Head.

University of Iowa. Dept of Math, Iowa City, IA 52242. Robert H. Oehmke, Chmn. We anticipate tenure track, tenured positions & visiting positions at all levels. Selections will be based on applicants' effective teaching & research, instructional needs of dept & potential for interaction with faculty at research level. Will give special consideration to those in fields of numerical analysis & partial differential equations. By 1/25/84 send vita & 3 letters of recommendation to Chmn.

Kansas State University. Dept of Math, Manhattan, KS 66506. R. Richard Summerhill, Head. (1) Tenure track Asst. Professorship 84/85. Salary commensurate with ability. Required: Ph.D; demonstrated research ability in global analysis & the use of differential geometry & topology for the study of problems in analysis or theoretical physics; also commitment to excellence in teaching; Starting date: 8/13/84. By 1/31/84 contact Head. (2) Tenure track Asst. Professorship 8/13/84. Salary commensurate with ability. Need research ability in number theory. Desirable: application of dynamical systems to number theory & sequences of integers and background in algebraic number theory. Excellence in teaching expected. Ph.D. in math or equivalent required. By 1/31/84 contact Head.

University of Kansas. Dept of Math, Lawrence, KS 66045-2142. C. J. Himmelberg, Chmn. Two or more tenure track positions at asst. & assoc. professor level starting 8/16/84. Field is unrestricted, but for one position preference will be given to algebra. Otherwise candidates whose interests mesh well with dept's needs are

University of Kansas (contd)

preferred. Requires Ph.D. or doctoral dissertation accepted with only formalities to be completed. Send resume with description of past & present research & have 3 letters of recommendation sent to Head. Deadline: 12/15/83 for first consideration, then 2/1/84, then monthly until search is ended.

University of Louisville. Dept. of Math, Louisville, KY 40292. Michael S. Jacobson, Chair of Search Committee. Position of Department Chairperson. Required: Ph.D.; active research program, interest in undergraduate & graduate (Master's & Ph.D.) program development & ability to administer growing department. Appointment at Prof. or Assoc. Prof. level depends on experience. Send vita & 3 letters of recommendation to Chair, Search Committee.

University of New Orleans. Dept of Math, New Orleans, LA 70148. Terry Watkins, Chmn. Tenure track position to begin 8/20/84. All fields considered but particular needs are in algebra, discrete methods, real analysis, statistics. Also several instructorships to teach developmental through sophomore level, some to begin 1/12, others 8/20/84. Send inquiries to Chmn.

Goucher College. Dept of Math & Computer Science, Towson, MD 21204. Professor Robert Lewand, Chmn. Asst. Professorship Fall, 1984. Teaching undergraduates at all levels both math & computer science. Average load: 9-11 hours per week. Ph.D. required. Salary from \$21,000 depending on experience. Send vita, transcripts of graduate work & 3 letters of recommendation to Chmn.

U. S. Naval Academy. Dept of Math, Annapolis, MD 21402. Prof. F. I. Davis, Chmn. Three year tenure track Asst. Professorship 1/1984 or 8/1984. Ten month salary: \$21,000-\$28,000 commensurate with experience & qualifications. Research opportunities exist for augmenting salary during summer. Specialization in applied math is desired but not essential. Required: Ph.D. by date of appt; commitment to excellence in teaching & research. Send resume, 2 transcripts & 3 letters of recommendation to Chmn.

University of Maryland. Dept of Math, College Park, MD 20742. Prof. John Osborn, Chmn. Possible tenure or tenure track positions 8/1984. Rank & salary depend on qualifications. Joint appts with other units are possible. Required: exceptionally strong research program. By 2/1/84 send vita, description of current research & at least 3 letters of recommendation to Chmn.

Smith College. Dept of Math, Northampton, MA 01063. David Cohen, Chair. Tenure track Asst. Professorship, fall, 1984. Required: evidence of sound scholarship (Ph.D. required) & excellence in teaching. Send vitae & 3 letters of reference to Chair.

Worcester Polytechnic Inst. Mathematical Sciences Dept., Worcester, MA 01609. Tenure track Asst. Professorships requiring strong commitment to scholarship, excellent classroom teaching & project advising. Desire applicants' research interests to parallel current work in Dept which includes discrete modeling, computer math, applied analysis, differential equations, mathematical physics, operations research, statistics & applied probability. Send applications to Bruce C. McQuarrie, Math Sciences Dept.

Michigan State University. Dept of Math, East Lansing, MI 48824. Prof. Kyung Whan KWUN, Chmn. (1) Two postdoctoral fellowships in math. Appt. for one year with a possible second year. Teach one course each term & devote rest of time to research. These fellowships are normally offered to persons (regardless of age) who have had their doctorate less than 2 years. (2) Several tenure system openings 9/1/84. Expect these to be at Asst. Prof. level, but may be at Assoc. or Full Prof. level. Required: Ph.D. in math, excellence in research & in teaching. For all positions send resume & have 3 letters of recommendation sent to Chmn.

Michigan Technological University. Dept of Mathematical & Computer Sciences, Houghton, MI 49931. Dr. Richard Millman, Head. Several tenure track positions in applicable math (e.g. probability, fluid mechanics, ODE, PDE etc.) statistics, differential geometry, operations research, numerical analysis & computer science, as well as visiting positions are available. Asst. or Assoc. Profs preferred. Required: excellent research & teaching. To apply, write to Head.

Wayne State University. Dept of Math, Detroit, MI 48202. Togo Nishiura, Chmn. Several positions Fall, 1984. Ph.D. required. Excellence in research & teaching expected. Send application, resume & name of 3 academic references to Chmn.

College of St. Catherine. Dept of Math Sciences, St. Paul, MN 55105. S.M. Molnar, Chairperson. One math & one comp. sci. position 9/1984. Both tenure track with rank & salary dependent on qualifications & experience. Teaching load 6 courses per year. One position requires Ph.D. in math with interest in area of applied math or comp. sci. The other position requires M.S. (Ph.D. preferable) in comp. sci. By 2/1/84 send resume, transcripts & 3 letters of recommendation to Chairperson.

Dartmouth College. Dept of Math & Comp Sci., Hanover, N.H. 03755. Martin Arkowitz, Chmn. (1) John Wesley Young Instructorship. Two-year, nonrenewable, postdoctoral appt. for Ph.D.'s with strong interest in research & teaching. Teaching duties average less than 6 hours per week. Academic year stipend of \$19,500. (2) Professorship in Comp. Sci. Qualifications: established record in research, strong interest in teaching & ability to lead growing program in comp. sci. For both positions write to Chmn.

Wells College. Dept of Math, Aurora, NY 13026. Tenure track position fall, 1984. Nine hour teaching load. Excellence in undergraduate teaching required. Ph.D. & experience with computers desired. Rank & salary open. Screening will begin in Jan, 84 and will continue until position is filled. Send vita, transcripts & 3 letters of recommendation to Prof. Arnold Shilepsky.

Ithaca College. Dept of Math & Comp Sci, Ithaca, NY 14850. Dr. Eric E. Robinson, Chairperson. Two tenure positions at level of at least Asst. Prof, Fall, 1984. Want applicants able to teach lower level computer science courses & who will prepare to teach upper level comp. science courses in future. Although Ph.D. is preferred, will consider those with relevant background or experience. By 12/15/83 send vitae to Chairperson.

Queens College. Div. of Natural Sciences & Math, Charlotte, NC 28274. Dr. Jack Fehon, Chmn. Teaching position in math. Required: minimum of a Master's degree. Ability to teach comp. sci. is highly desirable. Courses are in both introductory & advanced math & introductory comp. sci. Rank & salary dependent on experience & educational background. College owns & operates a Vax-11 750 & has access to computer resources at N. C. Research Triangle Park. Submit vita & have 3 letters of recommendation sent to Chmn.

University of North Carolina, Chapel Hill. Dept of Math, Chapel Hill, NC 27514. Fixed term (2 year) Lecturer & Asst. Prof. positions anticipated, fall, 1984. Required: demonstrated exceptional potential in research & commitment to excellent teaching. Send vita, 3 letters of recommendation & abstract of current research program to Chairman, Dept of Math.

University of North Carolina, Greensboro. Dept of Math, Greensboro, NC 27412. Two or more positions fall, 1984: assistant professor, tenure track and full professor tenured, in Comp. Sci; teaching (mostly undergraduate), program development, and research. Qualifications: Ph.D. in CS, or Ph.D. in math with MS in CS; for senior position strong research record & potential for leadership. UNC-G has a VAS 11/780 running VMS, on campus connection to USENET through the Triangle University Computation Center. By 1/15/84 send resume & 3 letters of recommendation to CSC Committee, Dept of Math; inquiries to mcnc!ecsvax!bsmith.

Cleveland State University. Math Dept, Cleveland, OH 44115. T. W. Hungerford, Chmn. Tenure track position fall 1984. Rank Open. Required: Ph.D. & established record and/or strong potential in research, & commitment to excellence in teaching. Prefer applicants in fields of partial differential equations, numerical analysis, statistics, operations research. Normal teaching load 2 courses per quarter. Competitive salary & excellent fringe benefits. By 1/6/84 send vita & 3 letters of recommendation to Chmn.

Miami University. Math & Stat. Dept., Oxford, OH 45056. Two tenure track Asst. Professorships, Aug., 1984. Required: Ph.D. in math, statistics or operations research & interest in teaching & scholarship. Duties: teaching average 8 to 9 hours per week, continuing research & departmental service. For one position we prefer applicants in operations research; second position is unrestricted. By 2/1/84 send vitas, graduate transcripts & 3 letters of recommendation to Prof. Fred Gass, Math & Stat. Dept.

Ohio State University. Dept of Math, 231 W. 18th Ave., Columbus, OH 43210. (1) Several positions at all ranks, both visiting & permanent, fall, 1984. Prefer candidates in pure & applied math. Expect significant research accomplishments or exceptional research promise & evidence of good teaching ability from successful candidates. (2) Research instructor in math 84/85. Required: Ph.D. (or equiv) in math & strong research potential. Position renewable up to 2 additional years. Send credentials & have 3 letters of recommendation sent to Prof. Alan Woods, Dept. of Math.

University of Pennsylvania. Dept of Math (E1), Philadelphia, PA 19104. Prof. Jerry L. Kazdan, Chmn, Personnel Comm. (1) One or more tenure positions 7/1/84. Seeking candidates with significant recognized research achievements who are successful teachers of undergraduate & graduate students. Prefer candidates in algebra. Rank & salary will depend upon experience. Write to Chmn, Personnel Committee. (2) Several faculty positions July 1, 1984. Candidates should have strong research credentials & potential for teaching graduate & undergraduate students. By 1/1/84 send resume & 3 letters of reference to Chmn, Personnel Committee.

Vanderbilt University. Dept of Math, Nashville, TN 37235. Prof. R. R. Goldberg, Chmn. Senior position in applied math or classical analysis 9/1984. Required: international reputation in research as well as a record of excellence in teaching. Have a curriculum vitae and at least 4 letters of recommendation sent to Chmn.

Texas A & M University. Dept of Math, College Station, TX 77843. Prof. H. E. Lacey, Head. Several tenure track positions available. Candidates must demonstrate active research program. Please contact Head.

University of Texas, San Antonio. Division of Math, Comp. Sci. & Systems Design, San Antonio, TX 78285. Prof. Stanley G. Wayment, Director. Several tenure track Asst. or Assoc. Professorships 9/1984. Required: Ph.D. & interest in teaching and research. Prefer applicants in math, statistics, comp. sci, systems design or math education. Send vitas to Director.

University of Utah. Dept of Math, Salt Lake City, UT 84112. (1) Three or four nonrenewable 3-year instructorships. Persons of any age receiving Ph.D's in 83 or 84 are eligible. Applicants to be selected on basis of ability & potential in teaching & research. Starting salary: \$21,500 & cost of living increases are contingent on action of State Legislature. Appointees will teach two courses per year. (2) One visiting position of one year or less. Selection criteria are teaching ability & potential research contribution. (3) May have permanent senior level positions. Selection based on availability of funds, research expertise & teaching ability. By 3/31/84 send vita, bibliography & 3 references to Committee on Staffing, Dept of Math. Applications for instructorships must also include abstract of thesis and a list of graduate courses completed or transcripts.

University of Wisconsin, Madison. Dept of Math, Van Vleck Hall, 480 Lincoln Dr, Madison, WI 53706. Prof. J. Marshall Osborn, Chmn. We solicit applications from Logicians of established excellence for a possible Asst. Professorship commencing in the Fall of 1984. By 12/1/83 contact Chmn.

Late Arrivals

University of Michigan. Dept of Math, Ann Arbor, MI 48109. F. W. Gehring, Chmn. (1) At least one T. H. Hildebrandt Research Asst. Professorship 9/1984. Three year appointment. Reduced teaching load. Prefer persons of any age having Ph.D. less than 2 years. By 1/2/84 send application to Chmn. Salary: at least \$23,000 for academic year plus possible additional in summer. (2) One tenure track Asst. Professorship in one of following areas: applied math, numerical analysis, combinatorics, differential geometry or Lie representation theory. Salary: \$26,000. Starting date: 9/1-84. Apply by 1/2/74 to Chmn.

University of Rochester. Dept of Math, Rochester, NY 14627. Two, possibly three, Asst. Professorships (tenure track) 9/1984. Initial appt. for 3 or 4 years. Required: Ph.D., outstanding research promise & excellence in teaching. No restriction on field, but prefer those in fields of probability or applied math. Send resume & names of 3 references to Chmn., Math Dept.

SUNY - Stony Brook. Dept. of Applied Math & Stat., Stony Brook, NY 11794. Prof. R. P. Tewarson, Acting Chmn. (1) Senior & Junior positions in operations research; applications experience very important. (2) Senior positions in statistics; theoretical or applied. Distinguished research record needed for senior positions; evidence of research potential needed for junior positions. Send resume to Acting Chmn.

Bryn Mawr College. Dept of Mathematics, Bryn Mawr, PA 19010. Tenure track Asst. Professorship, Sept., 1984. Required: Ph.D. in math, demonstrated strong research potential and excellence in teaching. By 1/15/84 send application, resume and 3 letters of recommendation to M. Martelli, Acting Chmn.

Late Arrivals (contd)

California State University, Chico. Dept of Math, Chico, CA 95929-0525. Jim Jones, Chair. Four full-time, tenure track, Fall, 1984 Asst. Prof.-Professorships (\$22,000-\$38,000 yr.) depending on qualifications. 12 units semester, committee work, mathematical activity. Required: Ph.D. in math, stat or math educ, teaching excellence. By 2/1/84 send resume, supporting documents & 3 letters of reference to Chair.

University of Tennessee. Math Dept., Knoxville, TN 37996-1300. John S. Bradley, Head. One or more tenure track Asst. Professorships. Our priorities are: Probability including probability measures on algebraic structures, structural & sample path properties of stochastic processes & applied probability; Ordinary Differential Equations including functional differential equations, spectral theory control theory, stability theory, mathematical physics. Want applicants with research interests compatible with those of present faculty. Contact Head.

University of Minnesota - Duluth. Dept of Math Sciences, Duluth, MN 55812 (218)-726-8254. (1) Math Position: tenure track Asst Professorship 9/1/84 to teach 6-10 hours/wk and conduct research. Competitive salary, excellent benefits. Required: Ph.D. or ABD in math. Send vita, transcripts & 3 letters of recommendation to Joseph A. Gallian by 2/15/84. (2) Computer Science: Two tenure track Asst. or Assoc. Professorships 9/1/84 to teach 6-8 hrs/wk and conduct research. Facilities include a local CYBER 170/815, micros, and access to CRAY & VAX computers. Required: Doctorate in Comp. Sci with substantial CS background. By 1/31/84 send vita, transcripts & 3 letters of recommendation to Max Benson. Interviewing at Louisville.

BALLOT

President-Elect:
(vote for one)

Linda Keen

Treasurer:
(vote for one)

Lynell Stern

Member-at-Large:
(vote for two)

Vivienne Malone-Mayes
 Evelyn M. Silvia

Editorial changes
in bylaws:

For
 Against

Changes to fit present
election procedures:

For
 Against

Changes to establish new
appointive office of
Meetings Coordinator:

For
 Against

Changes to make the terms
Officers and Executive
Committee synonymous:

For
 Against

See article beginning page 4 for detailed explanations of the Bylaws changes and for statements of the candidates.
Ballot is due at the Wellesley address by December 1, 1983.

ASSOCIATION FOR WOMEN IN MATHEMATICS
MEMBERSHIP APPLICATION

Name and Address _____

Institutional affiliation, if any _____

Make checks payable to:

ASSOCIATION FOR WOMEN IN MATHEMATICS

and mail to: Association for Women in Mathematics
Box 178, Wellesley College
Wellesley, MA 02181

The AWM membership year is October 1 to
October 1.

New _____ Renewal _____

Individual \$15.00 _____

Family \$20.00 _____

Retired, Student, Unemployed \$5.00 _____

New Member Rate: (Individual) (Applicable
only to those who are joining AWM
for first time.)
for each of 1st 2 yrs. \$10 _____

Institutional (2 free advertisements per
year in Newsletter.)

Sponsoring, Category I: \$65 _____

Sponsoring, Category II: \$45.00 _____

Regular: \$25.00 _____

Contributing Member \$20 or more in
addition to regular dues _____

Association for Women in Mathematics
Box 178, Wellesley College
Wellesley, MA 02181
November-December, 1983

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