File

Association for Women in Mathematics

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DUES! DUES! Please remember to pay your dues. Convince a friend or colleague to join. Get your department to become an institutional member. DUES! DUES! DUES!

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PRESIDENT'S REPORT

As my term as president comes to an end, I have been thinking about the future of our organization. Many of our mathematical colleagues, male and female, feel that AWM no longer has the clear set of purposes it had at its inception. Certainly there is some truth in this. When AWM was founded thirteen years ago women rarely held positions in mathematical organizations. Women speakers were uncommon at most meetings and conferences, and editorial positions were held almost exclusively by men. More seriously, employment opportunities were often very limited. Even women who had managed to gain international prominence in their fields often held insecure positions at low pay.

Today the situation is different, although some might say that the difference is still at the token level. Nevertheless, it is harder to rail about the lack of women speakers at a meeting where one in five of the invited speakers is a woman than at one where the number is zero in five.

AWM's membership has continued to grow, with an increase of almost fifty percent in the last few years to a high of more than fourteen hundred members, including women, men, and institutions. What should be our objectives in this new age where we are part of, rather than opposition to, the "mathematical establishment"? I feel that our primary purpose should remain the same: to try to ensure that women mathematicians are accorded equal opportunities in employment and research opportunities and to encourage and support all women who are working in the profession. Many battles remain to be fought against injustices; we can support each other through our organization.

A second objective for AWM is to serve the mathematical community by providing programs and information to the mathematical public supplementing what is available through the larger mathematical organizations. The themes of the programs need not pertain directly to women.

Another important task AWM must take on is the larger one of encouraging all women to study mathematics to expand their career opportunities as well as their intellectual horizons. Perhaps this is our most difficult mission.

For all these purposes the regional groups, such as those that meet in Boston, Chicago, Florida and New Jersey will become more important.

Since AWM has become a larger, more established organization, we must change some of our casual ways in order to increase our effectiveness. We must publish a

booklet to introduce our organization to potential new members and contributors. We need some kind of annual report. We should create the office of Secretary to handle some of the correspondence. We will have to study our finances with more care. We can become a more professional organization without losing touch with our members.

Linda Preiss Rothschild
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University of California, San Diego
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LETTER FROM THE EDITOR

Recently I read the new Kovalevskaya biographies. I enjoyed reading both of them. Pat Kenschaft's review appears in this issue.

Barriers to Equality in Academia: Women in Computer Science at MIT was prepared by female graduate students and research staff in the Laboratory for Computer Science and the Artificial Intelligence Laboratory at MIT, 545 Technology Square, Cambridge, MA 02139. I think it's $5 a copy. It is a well-written report detailing the kinds of subtle discrimination women may experience in academic computer science. Many of the incidents will strike a chord with women in any technical field. From the introduction:

The obstacles described above sometimes are manifested through overt discrimination, for example explicit verbal comments that convey negative attitudes about women. Most of this report addresses more subtle behavior. Often, subtle behavior is not recognized as discriminatory, for two reasons. First, the actions often are not intended to be discriminatory; the people who convey biased attitudes toward women may be well-intentioned. Nevertheless, the effect of their behavior is to undermine the professional image of women held by their colleagues and the women themselves. Second, any particular incident might appear trivial when viewed by itself. However, when women experience such incidents daily, the overall effect of the environment is much greater than the sum of the individual incidents.

Here are some examples from section two of the report:

* I was told by a secretary planning a summer, technical meeting at an estate owned by MIT that the host of the meeting would prefer that female attendees wear two-piece bathing suits for swimming.
* I know men who ignore my questions about their work, but respond to a man who asks the same questions.
* Often, when I ask a male graduate student how to do some task, particularly something on the system, he will do it for me rather than explain to me how I can do it for myself.

University-Industry Research Relationships: Selected Studies (government publication NSB 82-2) has been put together by the National Science Board for the National Science Foundation. A related volume is University-Industry Research Relationships: Myths, Realities and Potentials, the Fourteenth Annual Report of the National Science Board to the President and Congress. The quote which follows, found on page 8 of the first volume mentioned, gives a good idea of the issues investigated by the NSB.

A number of national concerns arose just prior to the establishment of this study relating to the health of our overall technical enterprise that give the subject of effective utilization of our technical resources a certain level of urgency.

Among these national concerns are the following:

(1) There has been a growing belief that basic research conducted by universities is being weakened by a decline in Federal support, obsolescence of research equipment and shortages of new faculty in specific areas such as computer science, electrical and chemical engineering.

(2) There has been a genuine concern with the innovative capability of U.S. industry, leading to a major Presidential study of the subject and which included among its premises:

   a. The belief that U.S. industry was devoting a decreasing share of its R&D resources to long-range research, and

   b. The fear that the international competitive status of the U.S. would decline by placing too great an emphasis on short-term product development.

   c. There has been increasing emphasis on the financial difficulties of universities, the decline in academic openings for Ph.D. researchers outside the fields of critical shortages and their potential consequential effects on the innovative process.

There are many questions that can be raised with regard to the data behind these concerns, and with their interpretation. The issue of importance to this study is that university/industry research interactions bear upon all of these concerns, and thus is a subject for examination in its own right. The general line of thought is that, if we understand more about the nature of these interactions, and how their functioning could be of benefit to both university and industry, then some of these national concerns might be addressed by encouraging particular mechanisms.

For example, closer relations might lead to expanded research by universities in areas of basic science and engineering that could be built upon by industry for future growth. Greater rapport between industrial researchers and faculty could strengthen support for graduate students and, presumably, increase industry funding for university research. Cooperative programs might provide leverage for further grants, and thus expand the level of basic research generally. Programs encouraging equipment donations might reduce critical instrument shortages.

Problems related to academic freedom are discussed in both these volumes. Even so, I find these volumes disquieting. The NSB recommends much more industry funding of specific university research. I don't have much faith that the needs of industry and the needs of science will coincide. And it is hard to see what industries will fund pure mathematics. [See Murray Gerstenhaber's article "On the Status of the Mathematics Profession", pp. 467-469, August 1984 AMS Notices, for some interesting views related to this latter point.]

I do like Virago Press. Recently I read an import from Virago/London called Alice Through the Microscope: The Power of Science over Women's Lives by the Brighton Women & Science Group. From the book jacket:

Science exerts immense power in our society. The scientific and technological revolutions have altered our lives dramatically. But while there is a growing body of literature on the sociology and politics of science, there is very little written on its effect on women. Science wields great influence over women's lives, yet they have little or no control over what is done in its name. This book sets out to look at why

this is so, presenting a unique analysis of a powerful social force. The authors examine the profound effects science has had in familiar areas such as contraception, mental health, childbirth, as well as in the less familiar--selective breeding, psychological testing, theories of evolution. The resulting information is both startling and disturbing.

Science, it is often said, is neutral, offering only facts to the world. This book shows clearly that scientists do not work in a social and political vacuum. While the authors in no way criticise the scientific method per se--indeed, they are committed to it--they show that its applications have more often been destructive than humane in their effects--that distortions of scientific method can be used to manipulate, and to establish power over others. And they say more: that the uses and abuses of science must be urgently re-examined if we are to retain control of our bodies and minds, our private and our public lives.

The chapter I found most thought-provoking was "Reproductive Engineering: The Final Solution?" by Jalna Hanmer and Pat Allen. Aided by the memory of a piece of fiction in Ms. magazine about the Reproduction Police, I can become paranoid thinking about society taking control of my body during pregnancy. This chapter contains some misogynist scenarios beyond my wildest nightmares. The authors suggest that the Brave New World (where women can be eliminated, not just subjugated) is nearer than we think. The remainder of the book is much less radical.

I had hoped to use my new letter-quality printer for this. The dot-matrix printing just doesn't photograph all that well (trust me, the originals look pretty good). However, the new printer went berserk (just before a slightly different version of this paragraph!) on my attempted final printout. Maybe next issue.

Anne Leggett
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Chicago, IL 60626

AMS ELECTIONS

This year's deadlines permitted sending requests for statements only to candidates for vice-president and members-at-large of the Council in the fall election of the American Mathematical Society. I asked candidates for general statements in support of their candidacies. A specific topic I suggested was to give their reactions to the recent decisions of the AMS Council to raise dues, cancel summer meetings, and require an abstract fee.

Our own president is a candidate for vice-president. The other three respondents are candidates for members-at-large of the Council.

Daniel M. Burns, Associate Professor, University of Michigan

I think the problem of women and minorities in mathematics, more specifically research and academic mathematics, is a problem of recruitment. If the general recruitment situation really is beginning to improve, as I feel it is, we should address ourselves to young women and minority members especially as part of an effort to draw talented young people back to mathematics. In specific terms, this would involve visits at the college and high school level and perhaps the development of publicity materials for students.

Once into the field, I believe there is enough pressure on the promotion/tenure process from outside to safeguard the career development of these young people.

On the issues you raise, without knowing the specific ledger books of the AMS, I can only say that an increase in dues or the addition of abstracting fees are not very surprising. Hopefully the abstracting fees could be removed. As to the general Summer Meeting, I find the Winter Meeting sufficient, and feel the AMS's first responsibility is to the various research meetings during the summer.

Harvey B. Keynes, Professor, University of Minnesota, Minneapolis

I believe that the main purpose of the AMS is to encourage excellence in mathematics research and education. This includes monitoring the working environments at colleges and universities, financial support for mathematics, and supporting an educational atmosphere which encourages superior students to become mathematicians. Particular attention should be given to minority groups which are underrepresented, and extensive encouragement should be given to the current increased interest in females to become mathematicians. The AMS should actively involve itself with the quality of mathematics at all levels of education, including more programs for gifted and talented students and more direct participation in programs which support and encourage precollegiate female students to consider careers in the mathematical sciences.

Linda Preiss Rothschild, Professor, University of California, San Diego

While the main goal of the AMS is to promote and support mathematical research, the means for accomplishing this must go beyond merely publishing journals and organizing meetings. Among the many issues to which the Society must give its attention are the following: preventing reduction in the support of mathematical research and graduate education, understanding and documenting changes in the patterns of academic and nonacademic employment of mathematicians, encouraging the use of computers in mathematical research and education, promoting mathematics as a profession to counteract the decline in the number of graduate students, encouraging women and minorities to enter the profession and assuring equal opportunities.

It is difficult to address the question of whether the AMS is right in raising its dues. I do think that the members need to know more about the finances and expenditures of the AMS.

Audrey Terras, Associate Professor, University of California, San Diego

I believe that the AMS should attempt to stay in touch with the problems and concerns of all of its members--no matter what their race, sex, mathematical specialty, age, position. In particular, it should attempt to be aware of the specific problems of young mathematicians of all types and be part of the solution rather than part of the problem. For example, I do not approve of the recent decision to require an abstract fee for the Notices. At the very least, the society should exempt retired or unemployed mathematicians and students from paying for publication of their abstracts. Furthermore, I do not approve of the choice of cut-off salary for the membership dues. For example, the Association for Women in Science has a more refined schedule of dues that looks much more equitable:

Income	Dues
<10,000	$5
10,000-19,999	10
20,000-29,999	20
30,000-39,999	35
>=40,000	50

I think that the AMS should continue to hold summer meetings.

However, the AMS is in the red and steps should be taken to end this situation; e.g., economies in the organization itself and fundraising of various types. One idea that I have heard is that the AMS should put out some of its books on consignment at university book stores.

Another concern of mine is the recent cutbacks in NSF support of individual researchers. I have heard that these cutbacks have occurred at a rate of about 100 researchers a year for the past several years (a situation which harms younger mathematicians, especially minorities and women, more than older tenured people). Instead the NSF should be increasing the number of researchers at a time when many people are saying (e.g., the David report) that the U.S. is underfunding mathematics. I have a drastic idea in this regard. The NSF grant should have a fixed rate for summer salary support--a rate based on the salary of an average assistant professor. That would free a large amount of money. Moreover the overhead rate for mathematics should not be over 35%.

Let me end by mentioning a few final problems that have been worrying me.

(1) There are many first-rate mathematicians who obtained their Ph.D.'s in the early 1970's who are still untenured. This is a situation that the society should work to rectify.

(2) The number of minorities obtaining Ph.D.'s in science has been dropping. Steps should be taken to reverse this trend.

(3) The AMS should, in general, put more effort into public relations. I have in mind the sort of activities carried out by the American Association for the Advancement of Science.

(4) When mathematicians are the objects of political oppression, the society should speak out to insure that they are allowed to live and work in freedom.

HONORS AND AWARDS

Congratulations to Mona Jean Guzman, who has earned an NSF Minority Graduate Fellowship to study at the New Mexico Institute of Mining & Technology.

Congratulations are also due to Margaret M. Napolitano, who has earned a Sloan Foundation Predoctoral Award to complete her dissertation at Brown University.

Sister Helen Sullivan, O.S.B., of Mt. St. Scholastica Convent, Atchison, Kansas, has been honored at the 1984 biennial convention of the American Benedictine Academy held at St. Benedicts Convent, St. Joseph, Minnesota, August 11-14. Sister Helen was nominated a Fellow in the American Benedictine Academy for her active participation in and many contributions to the Academy since its founding in 1948: she has contributed ten papers to the various biennial meetings and has also served as Secretary and Chairperson for some of the sessions of the Mathematics and Natural Science Section of the Academy. In 1981, Sister Helen was honored by the Smithsonian Institution in Washington, D.C., for being among the 100 women in the United States who earned doctorates in mathematics before World War II. She received her doctorate in mathematics from Catholic University of America in 1934. Also in 1981, Sister Helen was honored at the 50th anniversary celebration of Kappa Mu Epsilon, national honorary mathematics society. She is associated with the Jesuit School of Theology in Berkeley, California, where she does freelance grant-proposal writing.

The Mary Ingraham Bunting Institute of Radcliffe College provides fellowship opportunities to women in academic or professional fields, creative writing, science, or the arts. The following women mathematicians will be starting their second year at the Institute: Pamela Coxson, Beth Ruskai, Naomi Jochnowitz, and Gudrun Brattstrom.

Office or studio space, auditing privileges, and access to libraries and other resources of Radcliffe College and Harvard University are provided. Residence in the Boston area is required during the fellowship appointment. A description of the different fellowship programs follows.

I. The Bunting Fellowship Program, 1985-1986
    Eligibility: Women scholars, professionals, creative writers, poets, visual
        artists and musicians at various levels of career development. Receipt of
        doctorate at least two years prior to appointment, or equivalent
        professional experience for non-academic applicants.
    Terms: $15,250; one-year appointment.

II. The Non-Tenured Women Faculty Fellowship Program, 1985-1987
    Eligibility: Non-tenured women faculty members in a tenure-track position
        from a major US research institution; self-nominated or nominated by the
        President/Provost of the institution. Receipt of doctorate at least two
        years prior to appointment. Tenure review date may not be in 1985-1986.
    Terms: $16,500 plus research expenses; one year appointment; semesters can
        be sequential or non-sequential over a two-year period to accommodate
        teaching schedules.

III. The Science Scholars Fellowship Program, 1985-1987
    Eligibility: Women scientists at any level in their careers in the following
        science fields: physical and mathematical, environmental, engineering,
        biological, and psychological. Receipt of doctorate at least two years
        prior to appointment.
    Terms: $18,000-$20,000 plus research expenses; two year appointments for
        recipients affiliated with a laboratory; one year for recipients who do
        not require a laboratory affiliation.

IV. Affiliation, 1985-1986
    Eligibility: Same as Bunting Fellowship.
    Terms: Appointment is without stipend; one or two semesters with office/
        studio space and other resources available to all fellows.

Deadlines:
    October 1, 1984. Institutional nominations for the Non-Tenured Faculty
        Fellowship Program.
    October 15, 1984. Applications (postmarked) for all Fellowship Programs.
    November 1, 1984. Recommendation letters.

For information and further inquiry:
    Bunting Institute, 10 Garden Street, Cambridge, MA 02138   (617)495-8212.

        November 1, 1984 is the next closing date for submitting preliminary proposals
to the Ethics and Values in Science and Technology program of the National Science
Foundation.
        EVIST supports research and related activities to help to answer the question:
How can the ethical problems and value conflicts associated with current
scientific, engineering, and technical activities be better understood and more
effectively resolved, by scientists and engineers, scholars in the humanities,
persons making science policy, and members of affected groups?
        Projects focus on the activities of scientists (including social scientists)
and engineers in areas of social or professional concern. They are intended to
clarify the ethical implications or value assumptions of those activities and to
contribute to improved policies and practices affecting and affected by them.
        EVIST makes awards for research, individual professional development, and
dissertation support.
        For further information, contact: Rachelle Hollander
                                           . EVIST, NSF
                                           Washington, DC 20550
                                           (202)357-7552.

LETTER TO THE EDITOR

July 20, 1984

To the editor:

I hope that your readers will be interested in the letters which follow. I would like to publicize my concerns with the finances and mismanagement of the American Mathematical Society to as wide a public as possible, since I believe that they affect the health of our subject, and trust that I may use the AWM Newsletter as a forum.

The chronology of events is as follows: I first became involved in Society affairs in 1960 when I began to serve as an editor of the Proceedings. For the next 23 years, I was continually involved in Society affairs. I was elected to the Board of Trustees in 1973 and 1978, as is usual, for two consecutive 5-year terms. As a Trustee, I became increasingly convinced, after about 1977, that the affairs of the Society, especially those relating to computerization, are being mismanaged. After repeatedly presenting these views to the Board of Trustees and meeting with no willingness to take corrective action, I resigned my position as Trustee in October of 1983. This resignation was largely symbolic since my second term expired on December 31, 1983. The Martin-Leibler Report is a report prepared for the AMS Council and refutes all my charges. I am totally unconvinced by this report. By not paying my 1984 dues, I have resigned from the AMS. I continue to be deeply disturbed by the situation.

The issues involved are extremely complex and I certainly do not claim infallibility. However, the mathematical libraries all over the world have to pay a price for what is, in my opinion, incompetence and research and development in mathematical computer typesetting carried out by unqualified people with no hope of recovering the costs.

A few words of explanation: In my letter of 20 October 1983, I refer to the "Atre Report". Atre is the last name of a consultant brought in, in 1983, to advise the AMS about setting up a data base management system for all its operations. In October or September 1983, I received, as a Trustee, a preliminary version of what Ms. Atre's firm has to say. "The MRDB" is the Math Reviews Data Base which was put in place at a cost of $803,000 (sic) and whose putting in place took at least twice as long as predicted. I also want to emphasize that when I use the word "Providence" I am talking about Professor LeVeque and not the staff who have to carry out his directions.

Sincerely, Alex Rosenberg, Department of Mathematics,
        Cornell University, Ithaca, NY 14853
from August 15, 1984 to August 15, 1985:
        Mathematisches Institut, UniversitéRt Dortmund,
        Postfach 50 05 00, D 4600 Dortmund 50,
        FEDERAL REPUBLIC OF GERMANY

January 30, 1984

Professor E. Pitcher
American Mathematical Society
P.O. Box 2767
Lehigh Valley, PA 18001

Dear Professor Pitcher:

Please be kind enough to distribute this letter to the 1984 Council as soon as you can.

I understand there was extended discussion of the Martin-Leibler report at the January 24 Council meeting. I wish the Council to know the following facts and have them become part of the permanent record.

(1)   Although I did, at the November meeting of the Executive Committee, to which the committee invited me, suggest that an investigating commission be set up, I was never informed that the Martin-Leibler committee had been created and had no idea that an investigation was in progress until January 24, 1984.

(2)   The only information on my views that Professors Martin and Leibler had is contained in my letter of October 20, 1983 to the Council and of October 20, 1983 to Professor Thomas. Professors Martin and Leibler did not see fit to communicate with me in any way. My letter to Professor Thomas, of which I hereby request Professor Pitcher to enclose a copy, was written under the assumption that the reader was intimately acquainted with a complicated series of events, and thus my reasons for resigning could not possibly be completely clear to Professors Martin and Leibler since, even if they saw all documents I consider revelant, they were in no position to weigh my interpretation of such documents, nor could I relate to them the various non-recorded events that forced me to resign. Nor could they know, as I had every reason to believe Professor Thomas and the other recipients of my letter of resignation knew, that I used the circumlocution "Providence" or "top-management" to mean Professor LeVeque and Mr. Whidden in my letter of resignation.

(3)   My copy of the Martin-Leibler report arrived in my mailbox at Cornell on January 24, 1984 at about 1 p.m. Since our Spring semester began on January 23, 1984, I was particularly busy that day and did not even open my mail until about 8 p.m. Thus it was impossible for me to contribute my views on the report to the Council before it debated it.

(4)   It seems to me to be a sine-qua-non that if a neutral committee is asked to adjudicate a dispute and express opinion on charges leveled against individuals, it consult fully with all parties to the dispute. Since this committee did not do so I cannot accept the statement on p. 3 of the report that my charges are not warranted.

(5)   In my long association with the AMS as Editor, Council Member, and Trustee, the office of the Secretary as well as the Headquarters, found no difficulty in achieving speedy communication, if it seemed necessary. This became especially routine after the establishment of such firms as Federal Express, Purolator, etc., not to speak of Alexander Graham Bell's invention of the telephone. I therefore regard the fact that I did not receive the Martin-Leibler report until January 24, 1984 as a conscious and deliberate effort to prevent my communicating my opinion of that report to the Council before it debated it.

(6) I realize that the matter is a dead issue and I do not wish to reopen it, because I consider the chances of achieving meaningful reforms as nil. However, I want it clearly understood that I reject the Martin-Leibler report in toto and object strongly to being deprived of an opportunity to inform the Council, before it debated the report, of my views.

Sincerely, Alex Rosenberg, Professor of Mathematics

October 20, 1983

Professor E. Thomas
Department of Mathematics
University of California
Berkeley, CA   94720

Dear Professor Thomas: .   .

I am resigning from the Board of Trustees effective immediately. I will therefore not attend the November meeting.

Since my term ends on December 31, 1983, anyhow, the net effect of my resignation will be small but I can no longer continue to support what I believe to be irresponsible policies.

It is my firm opinion that the top people in ISD are incompetent and have wasted about $1,000,000. I can no longer reconcile my fiduciary responsibility as trustee with allowing this state of affairs to continue. The whole history of the second DEC 2060 illustrates my concerns. We were pressured into buying it and, as Attachment 72 of the November 1982 agenda clearly shows, told not to worry about lack of DEC support and certainly not told that if we spent the quarter of a million in 1982, we would still need new hardware within 18 months of November 1983. Yet the Atre report of September 23, 1983 states that we need this new hardware and makes clear that we cannot count on DEC support. Since all the points that the ATRE report now makes, were made in November '82 only to be dismissed by the senior Society employees, I can not possibly trust these people's professional judgment. As long ago as 1981 John Selfridge and Bill Woolf warned us about the danger of sticking with DEC and predicted correctly the excessive length of time and huge cost overruns that the MRDB would take. Again, the people who are supposed to know dismissed these warnings. The evidence for incompetence at the top level management in Providence is, to my mind overwhelming and since the rest of the Board made it quite clear in May that it was not willing to take serious measures to correct the situation, I have no choice but to resign.

I strongly disagree, furthermore, with Section 3 of the Atre report: In 1983, 1982, 1981, 1980 we have run deficits of $546,000; $870,000; $314,000; $410,000 respectively. Under these circumstances to so airily dismiss what was clearly a bad decision is, in my opinion totally irresponsible, and makes me distrust the whole Atre report. Moreover, as some of the trustees know, an Atre employee had a conversation with one trustee which made that trustee think that our people should have known in November 1982 that buying the DEC 2050 was a bad recommendation.

I can go on at much greater length citing reasons why I believe the Providence top management to be incompetent and no longer worthy of the Board's support. I will, however, only cite a few more points:

-1. A letter of July 12, 1983 from J.P. Kahane which shows that AMS books are not reaching France. The reply to Prof. Kahane of August 23, 1983 is, to me, unsatisfactory. It is high time that our prepayment policy be reexamined. Surely, competent people could devise a better system.

-2. At least three of the organizers of the 1983 Summer Research Conferences were very unhappy with what they regarded as totally unnecessary complications forced on them by Providence.

-3. The whole way the Hoffman issue was handled. It originated in Providence and was pushed by that office. It nearly didn't reach the Council. Competent staff would have avoided the whole problem.

-4. The report by Lilian Malt reproduced on pp. 5-9 of Attachment 15 of the October 1983 Agenda certainly, in my eyes, is a damning indictment since it makes it clear that the most obvious steps toward improvement in our keyboarding procedures have not been taken.

As I believe you know, the May 1983 meeting made my disagreement with the rest of the Board obvious. The reason for the delay in my resignation is that I had hoped to make a positive contribution to a possible merger of MR and ZBL. Unfortunately, this did not happen due, in part, to the intransigence of the Providence staff. I take this opportunity to sharply disassociate the top Ann Arbor management from the Providence one. While I disagree with some views held by the former, if Providence were managed as well as Ann Arbor is, I would not feel it necessary to resign. I have no doubts whatsoever on two points: If the Board had listened to Ann Arbor on the MRDB and DEC we would have saved several hundred thousands of dollars; and if Ann Arbor had been allowed to run without incompetents constantly interfering, the MR budgetary situation would have been much better.

My resignation is, to me, a very serious and painful step. However, my disagreements with the rest of the Board are so deep that I have no other choice.

Yours truly, Alex Rosenberg

February 16, 1984

Dear Council Member:

    If you wade through the enclosed, you will see that I wanted you to have my reaction to the Martin-Leibler fairy tale and to set the record straight about when and how I found out about it. Professor Pitcher seems to be stonewalling, so I am, after spending $14 for a 1984 Administrative Directory, bothering our secretaries, and mailing it directly to you.
    The whole affair disgusts me and I am very fed up with the high level big shots of the Society. Perhaps some of you will be able to clean up a bit of the mess, but as for me, I won't be an AMS member for some time to come.

Sincerely, Alex Rosenberg

SOME STEPS TOWARD MATHEMATICAL LITERACY IN THE CALIFORNIA STATE UNIVERSITY SYSTEM

by Leonard Feldman, Department of Mathematics and Computer Science, San Jose State University, San Jose, CA 95192

    The encouragement of young women to study mathematics beyond minimal requirements is a challenge well known to members of AWM. Concurrently with efforts that we make to convince young women that they should continue their study of mathematics, we should ensure that they have adequate information about the amount of mathematics needed for various goals.
    One approach, which provides an opportunity to do both, is to raise the level of required mathematics. This not only increases exposure to the subject, it also provides occasion to let them know its value for them in our society, and gives women a chance to have more positive experiences with mathematics. In particular, a college entry requirement sets conditions for additional high school involvement and better preparation for the college study. A required course in college could then build upon a reasonably sound foundation.
    With recent upgrading, the mathematical requirements for The California State University (CSU) are designed to bring about a minimal level of mathematical literacy for all students. The impact upon women, as a group, is significant because they are seriously underrepresented in mathematics courses.
    For the past few years, there has been a CSU General Education graduation requirement in the area of Quantitative Reasoning. At San Jose State University, the description of a Quantitative Reasoning course emphasizes that the "major goal [is] to make the student competent to use numerical data in personal and professional judgments and in coping with public issues. Valid judgments and conclusions require an understanding of relevant mathematical concepts and procedures and their application." Such courses need not be part of the Mathematics Department offerings, but all have an Entry Level Mathematics (ELM) exam as a prerequisite.
    As of September, 1983, any student entering The California State University must take an ELM exam before enrolling or during the first semester in the University system. The following comments appear in a brochure describing the ELM exam:

        The ELM exam will test for skills which should have been attained in
    two years of rigorous college preparatory mathematics...Its main purpose

is to assure that students are ready for college level work. It may be used for diagnosis of mathematics deficiencies and for prescribing work that students must do before they can begin the study of college level mathematics...

Those students who may major in fields requiring calculus (this includes business) should prepare to meet more than this minimum requirement. Such students should take 4 years of mathematics. All others would be well advised to take 3 years of math in high school. All students should take some math in their senior year.

Advice such as this offers tangible support for those who are encouraging young women to keep their options broad and to consider careers in mathematically related fields.

In the first year of this requirement, approximately 40% of the entry students did not pass the test, or were not exempt on a pre-established basis of equivalence (such as a 530 score on the Scholastic Aptitude Test-Mathematics). They are offered remedial assistance and allowed to repeat the exam.

One side effect of the ELM exam can be a real, if slight, decrease in anxiety; students who pass can feel more confident that they are ready for a required college level course. Furthermore, if they realize that they have some elementary mathematical skills, they are more receptive to a recommendation that they continue their study of mathematics and science so that it fits their career and societal aspirations.

The administrative structure is now in place; the next step is for the faculty to use it effectively. Effectiveness includes using the opportunity to encourage more women to reach a level of mathematical literacy higher than that which they may have already considered.

Further information can be obtained from: Academic Program Improvement Office of the Chancellor, The California State University, 400 Golden Shore, Suite 314, Long Beach, CA 90802 (213)590-5714.

FUTURES UNLIMITED VIDEOTAPE

press release

The myth that only muscular males can fly huge commercial airlines is gradually being debunked by such women as Captain Lynn Rippelmeyer, a petite pilot for People Express. She and five other New Jersey women speak openly of their experiences in previously male-dominated technological fields on a new videotape produced by Rutgers University and designed to be shown to junior and senior high school girls. Titled "Futures Unlimited," it is an outgrowth of the award-winning Futures Unlimited conferences designed and coordinated by Arlene Chasek, project director with the Consortium for Educational Equity at New Jersey's State University. The 30-minute tape extends the message of that program: There is a critical connection between the mathematics and science studied in high school and students' chances of entering high technology careers.

"Interest in the conferences was so great that we had to return applications from hundreds of students in scores of school districts," explains Chasek. "The videotape was created to help meet this unprecedented demand."

The women featured on the tape are six of the female role models who spoke around the state, encouraging young women to overcome the fearful avoidance of math and science that often prevents them from even considering economically rewarding non-traditional fields.

"I've gained a lot of satisfaction from trying things I used to think only boys could do," said Rippelmeyer. "So I was happy to take part in Futures Unlimited and tell girls that they don't have to be big and strong; they just have to exercise their mental muscles."

Formerly a flight attendant with TWA from 1972 to 1976, the Sparta resident used her leave time to learn to fly. Math and science courses were important to her in understanding aerodynamics, meteorology, aeronautical systems such as hydraulics, pneumatics and electronics, as well as the physics of weight and balance.

The videotape also profiles Donna Archibald of Jersey City, a generating plant technician for Public Service Electric and Gas Company, whose background in mathematics was the key to a technical job with management potential; Rachel Jenkins of East Orange, an equipment engineer for New Jersey Bell Telephone Company, who uses her engineering expertise after working hours to design and build theater sets; and Elizabeth Robinson of East Brunswick, data processing director at Ortho Pharmaceuticals Corporation, who combines her computer know-how with an interest in people. Also featured are Judy Vanderstar of Metuchen, a former nurse who is studying biomedical engineering at Rutgers University with the goal of designing health care equipment such as pacemakers and heart-lung machines; and Mary Ward-Callan of Chatam, a district manager for Bell Communications Research Inc. (formerly AT&T Bell Laboratories), whose love of problem-solving extends to creating systems and seeing them work.

Produced by Linda Susswein of the Office of Television and Radio at Rutgers, the videotape may be ordered for a fee by any school or community organization. For further information, contact Arlene Chasek, Consortium for Educational Equity, Rutgers University, 4090 Kilmer Campus, New Brunswick, NJ 08903 (201)932-2071.

HOW SCHOOLS PROGRAM GIRLS

press release

The Project on Equal Education Rights (PEER) of the NOW Legal Defense and Education Fund announces the release of a new report, "Sex Bias at the Computer Terminal—How Schools Program Girls." This publication is the first in a series of computer equity reports to be released by PEER this year.

"Sex Bias at the Computer Terminal..." looks at a wide range of computer equity issues—from the gender gap in the classroom to the role of teachers in the computerized classroom.

As Dr. Leslie Wolfe, Director of PEER, points out, "the technological revolution is overtaking our schools. In 1983 alone United States schools spent nearly $500 million on computers and programs. Yet in the midst of this new and exciting technological change, an old familiar story is emerging. Once again, the schools are becoming a breeding ground for a pattern of opportunity based on sex, race and class rather than on abilities."

Copies of the report are available for $3.00 from PEER, 1413 K St., NW, 9th Floor, Washington, DC 20005.

PURDUE CONFERENCE PROCEEDINGS

Women in Scientific and Engineering Professions, Violet B. Haas and Carolyn C. Perrucci, editors, has been published recently by the University of Michigan Press. The Purdue University Conference on Women in the Professions provided an exchange of employment experiences, statistics, and strategies. Sixteen papers present the views of women from a variety of scientific disciplines. The contributors to this volume agree: by examining the training, employment, and status of women within science-based professions, we obtain a critical measurement of our progress toward the equality of the sexes in this technological society.

SOFIA KOVALEVSKAIA:
BIOGRAPHIES OF A MATHEMATICIAN

by Pat Kenschaft, Montclair State College

Ann Hibner Koblitz, A Convergence of Lives, Sofia Kovalevskaia: Scientist, Writer, Revolutionary, Birkhäuser of Boston, 1983

Don H. Kennedy, Little Sparrow: A Portrait of Sophia Kovalevsky, Ohio University Press, Athens, Ohio, 1983

Beatrice Stillman, translator and editor: Sofya Kovalevskaya, A Russian Childhood, Springer-Verlag, New York, 1978

Whole books devoted to a single woman mathematician are beginning to appear for the first time in the twentieth century. Unfortunately the first five are about only two women. Two are about Emmy Noether and are reviewed in the December, 1983, Monthly. The other three are about Sophia Kovalevskaia, who in 1874 became the first woman to receive a doctorate in mathematics since Renaissance Italy.

Kovalevskaia's forty-one years, beginning in Russia in 1850, provide appealing material for a biographer. Her mathematical achievements, although not comparable with those of Emmy Noether, continued far beyond the doctorate. In 1888 she won the Prix Bordin of the French Academy of Sciences, even though the Academy would not elect a woman to full membership until 1979. [Kennedy, 303] The award she received was raised from 3000 to 5000 francs because the same topic had been given three times before without being solved. [Stillman, 227] Her research on partial differential equations is basic to that field, and her work on the revolution of a solid body about a fixed point is considered classic. She also worked on the theory of Abelian integrals and investigated the form of Saturn's rings. (Her research is described in an article by AWM member Karen Rappaport in the October, 1981, Monthly and in the last section of Stillman's book.)

Kovalevskaia was the first woman in modern times to obtain a university position of any kind in any field, and after five years at the University of Stockholm her chair became permanent. As editor of Acta Mathematica, she was the first woman to become an editor of a major scientific journal. She was the first woman to be elected a corresponding member to the Russian Imperial Academy of Sciences, and in the last year of her life had reason to hope that her candidacy for full membership would soon be seriously considered.

Her "Memories of Childhood" was highly acclaimed as a literary piece in its time, and now provides vivid insight into life in a different time and place. An outspoken advocate of equality for women and other disadvantaged groups, she encouraged numerous young women who aspired to high academic achievements, even lending her passport at times to those in need. Furthermore, her personal life might generate good profit for Hollywood.

Kennedy's book, titled Little Sparrow after her childhood nickname, weaves these various themes into a unified whole. Her early involvement in the Nihilist movement, culminating in a "fictitious" marriage (arranged so that she could escape her parents' home for advanced study), the frustrating attempts later to create a "real" marriage, her husband's suicide, and her mature love life provide plenty of drama. Kennedy consolidates numerous secondary sources into an appreciative and readable story that one could happily give to a young person who fears that the life of a mathematician might be dull. Praise for this perfectly adequate book, obviously a labor of love, might be greater if Kennedy had not had the misfortune of having, unknown to him as he wrote, formidable competition.

In Koblitz' work mathematical biography becomes not only meticulous history but also an art. Almost every page of her biography is peppered with numbers referring to footnotes on the same page, but the main text has the charm and style of an absorbing novel. Koblitz had full access to the archives and libraries of Stockholm, Leningrad, and Moscow; she used at least five languages to accumulate a bibliography with over 450 entries. She treats her reader to an evaluation and explanation of many of these, sometimes unobtrusively in the text, but mostly in

the footnotes and in a four-page summary of the sources available to American readers. Some footnotes provide merely references, but many are fascinating commentary.

Her plethora of information enables Koblitz to write concisely, packing interest into each sentence, and omitting many details that Kennedy conscientiously includes. For example, she writes merely "...Kovalevskaia spent the rest of the summer of 1890 traveling through Europe with Maksim. Her mood vacillated, and there were disagreements with Kovalevskii, as her letters and diaries attest. Most of the time, though, she seems to have been happy." Kennedy reports these travels for more than two pages, telling us what she did on June 21, 23, 26, 27, July 3, 10, and August 6 -- more of a travel log than even an enthusiast like me cares to read.

Koblitz uses her varied resources to portray not only Kovalevskaia's life, but also the social and political milieu in which she lived. She tells about the other ambitious women who formed Kovalevskaia's peer support group, the loyalty of Weierstrass in privately helping a gifted woman prepare for a doctorate, and the courageous determination of Mittag-Leffler in arranging for her appointment at the University of Stockholm. The continuing friendships of these two men for her are depicted, as are those of many other mathematicians who shared their professional lives with Kovalevskaia and tried to gain appropriate recognition for her. Kronecker, Hermite, Poincaré, Picard, Chebyshev, are among those often mentioned, but no doubt is left (as in some secondary sources) that Kovalevskaia's research was hers alone. Indeed her frequent travels provided cross-fertilization of mathematical concepts for others throughout Europe.

Koblitz documents, on the negative side, so much discrimination against women in mathematics a century ago that even the most cynical modern reader might marvel at the progress in a mere hundred years. The German University of Göttingen conferred a degree on a woman only after extensive pleading by Weierstrass. [p. 122-123] Later when she wanted to leave Stockholm, Hermite wrote that there was such great prejudice in France that no Parisian faculty of mathematicians would consider any woman. [p. 216] The Secretary of the Russian Academy of Sciences wrote, "...access to teaching in our universities is completely closed to women, whatever their capabilities and knowledge..." [p. 221] Koblitz reports the social, as well as professional, prejudice faced by nineteenth century women mathematicians; not until 1886 would the French wives of mathematicians even invite Sofia to their homes. [p. 198]

The differences between a female and a (very well-meaning) male writer are perceptible. On page 234 Kennedy comments, "...Sophia united, along with a masculine energy and often tough inflexibility, a very feminine helplessness in many things..." His traditional attitude toward sex roles again surfaces when he reports Sophia's reaction to rejection by the man who, Kennedy knows, would become her fiancé shortly before her sudden death. "The once proud woman lowered herself to beg for a continuation of his friendship and correspondence." [p. 300] Apparently striving for money and knowledge is more acceptable in a woman than seeking love.

Koblitz makes no such comments but includes observations about housekeeping, totally absent in Kennedy's book. Kovalevskaia complained in her letters about the time consumed by domestic activities. She threw covers over the holes and worn spots in her parents' furniture, and invited shocked society into her shabby home. Her guests criticized her standards and warned her that her daughter (her only offspring) would "never learn domestic virtues." [p. 200] Despite their open disapproval of her informality, they continued to accept her invitations because she herself was a delightful hostess. Koblitz' conclusion mentions that Kovalevskaia's daughter had a long and successful career as a medical doctor.

Stillman's slightly older book is hardly comparable to the other two. By far the largest of its four parts is Stillman's translation of Kovalevskaia's own childhood memoirs. It is delightful reading simply as a well-told, informative story, but especially valuable for its insight into a person who would later challenge societal values. It is followed by a brief autobiographical sketch of

Kovalevskaia's life and preceded by a longer biographical introduction by Stillman, also very brief compared to the two more recent books. The volume concludes with a summary of Kovalevskaia's mathematics by P.Y. Polubarinova-Kochina translated by Neal Koblitz, Ann's husband.

The paucity of biographies of mathematicians of either sex is partially due to the lack of public comprehension of our endeavors. Even research mathematicians cannot understand the precise contributions of most other mathematicians without extra preparation. Although one might hope that earlier mathematics, having less to build upon, would be more accessible, the constantly changing notation, vocabulary, and abstractions can make it difficult for later readers to decipher the ideas, even readers who know them well. Thus biographies of mathematicians tend to lack detailed explanations of the mathematical achievements of their subjects.

It is doubtful, however, that the superficially more comprehensible goals of military generals justify the inordinate amount of attention they receive. That a description of professional achievement is not a necessary component for good biography is indicated by the number of biographies of musicians, none of which include any music whatsoever. Probably more people derive direct pleasure from music than from mathematics, but the general acceptance of mathematicians and their vocation would be served by a greater access to their lives through biographies. Perhaps the existence of such books, if they receive adequate publicity, will generate interest in more. Surely there is value in increased public understanding of who "does" mathematics and why and how.

Kovalevskaia lived at an excellent time for comprehensive biography. Trains and telegraphs were commonplace so it was far easier than in the previous century for adventurous people, especially women, to journey forth in the pursuit of knowledge and stimulating friends. On the other hand, Kovalevskaia antedates telephones, those time-saving devices that menace the art of letter-writing. The disappearance of letters thwarts biographers' attempts to probe the most personal of human thoughts and feelings. Kovalevskaia had friends in many countries, including such luminaries as Dostoevskii, George Eliot, Mendeleev, and Helmholtz, and she kept up a voluminous correspondence at various levels of intimacy. Koblitz' access to such detailed records of a complex human life may be rare in human history, and she has done a superb job of integrating her data into a gripping, significant tale. It is a book that AWM members should try to recommend to as many libraries as possible.

ISABELLA GRIGORYEVNA BASHMAKOVA: ON THE OCCASION OF HER 60TH BIRTHDAY

On January 3, 1981, Isabella Grigoryevna Bashmakova, one of the most prominent historians of mathematics in the Soviet Union today, celebrated her 60th birthday. She was born into an Armenian family with long-established ties with Russian culture in Rostov-on-Don. Her father, Grigory Georgiyevich Bashmakov, was an extremely cultured, well-educated person, a lawyer famous for his oratory. In 1932 the Bashmakovs moved to Moscow where Isabella finished secondary school and enrolled in the Mathematics Department of Moscow University. For some time during World War II she was evacuated along with personnel from the University, and worked as a nurse in Samarkand.

On her return to Moscow in 1943 she became the favorite pupil and then the colleague of Professor S. A. Yanovskaya. Yanovskaya's influence indubitably makes itself felt in the precision and consistency of all Bashmakova's mathematical formulations, in her constant urge to analyze old ideas from the standpoint of the present state of the problem. She delivered her first reports on the history of mathematics at a seminar at Moscow University conducted jointly at the time by S. A. Yanovskaya and A. P. Yushkevich. Her subsequent work was largely connected with this seminar (later she became one of its tutors). Her work has invariably been associated with Moscow University, where she is still a professor in the Department of the History of Mathematics headed by Professor K. A. Rybnikov. The above-mentioned reports, prepared with the participation of A. I. Lapin, subsequently an eminent specialist in the algebraic theory of numbers, soon attracted attention. On finishing her postgraduate course in 1948, Bashmakova defended her "Candidate's" thesis, "On the History of the Theory of Divisibility," with A. O. Gelfond and A. P. Yushkevich as official opponents. In her thesis she evinced two basic and in many ways closely interconnected trends, which long prevailed in her work: the history of ancient mathematics and the history of algebraic numbers. The main conclusions drawn in her thesis were published in Istorikomatematicheskie issledovania (Historical-Mathematical Studies, hereafter referred to as HMS).

Continuing the earlier studies by O. Becker (1933), Bashmakova produced an original analysis of Euclid's Elements (HMS, 1948). Drawing a distinction between arithmetical numbers and segment numbers used in these books, she demonstrated that Euclid's theory of divisibility of segment numbers is as rigorous as the geometrical books of the Elements. However, even such an eminent authority on ancient mathematics as H. G. Zeuthen believed that this theory was incomplete and caught in a vicious circle. Comparing the theory of ratios of integers in the seventh book of Elements, undoubtedly the oldest of all, with the general theory of ratios and proportions in the fifth book which was worked out later, most probably by Eudoxus, Bashmakova came to the conclusion that the latter theory also embraces integers as a particular case. She explained the presence of the separate theory in the seventh book by the fact that this theory is quite adequate and particularly convenient for the theory of numbers set forth in the seventh to the ninth books. Afterward, she made a detailed comparison of Eudoxus' general theory of ratios with Dedekind's theory of cuts (HMS, 1958).

The main content of Bashmakova's Candidate's thesis, however, was a thorough analysis of E. I. Zolotaryov's theory of algebraic numbers as compared with the almost synchronous but substantially different theories of Dedekind and Kronecker (HMS, 1949). She stressed the importance of Zolotaryov's so-called local methods, which are to this day underestimated abroad. Bashmakova has repeatedly returned to the wide range of questions connected with this. Mention should be made of her analysis of the arithmetical part of N. I. Lobachevsky's Algebra in an article written jointly with A. P. Yushkevich (HMS, 1949); her article about algebra and the theory of numbers in M. V. Ostrogradsky's lectures written with L. A. Sorokina (1962); and the very subtle remarks about the problem of the reducibility of algebraic equations over some quadratic field in Newton's Arithmetica Universalis, whose ideas were further developed by Waring (HMS, 1959).

In 1948 and 1949 Bashmakova prepared and read her first course of lectures on the history of mathematics, which she continues to give to this day, as well as various special courses. These all required a more serious study of a number of classical works among which she was at first attracted most by those of Archimedes. Although there is an extensive literature on the development of ancient infinitesimal methods, Bashmakova has uncovered completely new aspects of it. Particularly noteworthy is her analysis of the "differential methods" of Archimedes, who used the so-called (Leibniz) characteristic triangle and some propositions equivalent to the simplest theorems of the theory of limits to find tangents in his work on the spiral. Solving one geometrical problem for which, in modern terms, the maximum of some polynomial of third degree has to be found, Archimedes reduced the matter to finding the common tangent to two plane curves in their common point. Bashmakova demonstrated that his rule is equivalent to the

differentiation of the product of two functions. Along with this she traced the influence of his work on spirals for mathematicians of the 16th and 17th centuries, beginning with Viète. This is a typical pattern of Bashmakova's tendency to reveal in old methods the modern mathematical equivalent which at times may be well concealed behind archaic terminology and form. The latter results were not included in her excellent "Lectures on the History of Mathematics in Ancient Greece" (HMS, 1958). It would be very desirable to issue these lectures, supplemented by the author's subsequent studies of ancient mathematics of the early centuries A.D., in an independent form.

In 1961 Bashmakova defended her Doctor's thesis, which summed up all her studies on ancient mathematics. Her official opponents were A. I. Markushevich, B. A. Rozenfeld, A. P. Yushkevich, and V. P. Zubov. In 1968 she became a professor. At that time her merits won international recognition, too, when the International Academy of the History of Science elected her a Corresponding Member in 1966 (in 1971 she became an Effective Member of this Academy).

Among Bashmakova's studies on Greek mathematics of the first centuries A.D., the most prominent are her studies on the history of Diophantine analysis and, above all, her publication in 1974 of a Russian edition of Diophantus' Arithmetic (translated by I.N. Veselovsky and edited by Bashmakova, who also supplied extremely detailed comments and an introductory article). In fact, Bashmakova devoted a large cycle of works, written between 1966 and 1980, to Diophantus. Until recently it was generally accepted that Diophantus did not possess sufficiently general methods to find the rational solutions of indeterminate equations. The only person of a different opinion was the famous C. G. Jacobi, but he did not motivate his belief in detail (Bashmakova drew attention to a wholly forgotten article on this subject by Jacobi). She showed that the essence of Diophantus' methods was concealed by the fact that he solved only separate problems with given numerical data, but without formulating his methods in general. In reality, these numbers played the role of parameters. Putting the methods of the Arithmetic into geometrical language, Bashmakova compared them with the methods of the modern arithmetic of algebraic curves and established their close affinity, which had previously escaped historians of mathematics. She traced the spread of Diophantus' ideas in the Middle Ages and the more recent period to Jacobi and finally, to Poincaré and Mordell. This suggested to her the idea that Diophantus' method of finding rational points of third-degree curves led Fermat to elaborate his method of tangents and extremums for algebraic curves and functions (HMS, 1966).. Her book Diophantus and Diophantine Equations (Moscow, 1972; German translation, 1974) was highly successful. In these studies she had the benefit of I. R. Shafarevich's consultations.

While studying the works of Viète, Bashmakova made the noteworthy discovery (the article was written jointly with E. I. Slavutin, HMS, 1976) that the special transformations of the triangles proposed by him could be interpreted in terms of the arithmetic of complex numbers.

The recent discovery of the Arab translation of three lost books by Diophantus (actually, of three books fully consonant with seven books preserved in Greek by Diophantus) has confronted scientists with a number of new and, often, rather complex problems. These are now being studied by many specialists, including R. Rashed in Paris, J. Seziano in Lausanne, I. G. Bashmakova and her pupils, and B. A. Rozenfeld in Moscow (cf. HMS, 1979). It is too early to sum up the results of these studies.

Among Bashmakova's pupils are E.I. Beryozkina, S.S. Glushkov, Jamal al-Dabbagh (Iraq), Leyla Mohammed (Egypt), A. P. Kauchikas, N. G. Krotkova, E. I. Slavutin, and L. A. Sorokina. Bashmakova's teaching has also attracted some gifted young mathematicians to historico-mathematical studies, e.g., A. N. Parhsin and A. N. Rudakov. S. A. Yanovskaya, Bashmakova's teacher, also fostered one more quality in Bashmakova--an unusually solicitous, almost maternal attitude toward her pupils; she gives them all the help they need.

Bashmakova has participated in many scientific conferences in the USSR and abroad. In her scientific work she is closely associated with the Institute for

History of Science and Technology (Academy of Sciences of the USSR) and is a co-author of the Source Book in the History of Mathematics, edited by A. P. Yushkevich (Moscow, 1976), a book particularly popular among secondary school teachers and pupils. She has also contributed to the three-volume History of Mathematics from Ancient Times to the Beginning of the Nineteenth Century, edited by A. P. Yushkevich (Moscow, 1970-1972), and the first volume of the work Mathematics of the Nineteenth Century, edited by A. N. Kolmogorov and A. P. Yushkevich (Moscow, 1979). All of these works, it should be noted, are published in Russian. I. G. Bashmakova is marking her 60th birthday full of energy and ambitious plans, sincerely and warmly esteemed by her colleagues throughout the world.

OF POSSIBLE INTEREST

The CBMS report, "New Goals for Mathematical Sciences Education," was published in the AMS Notices. Copies may be obtained by sending a self-addressed mailing label to: New Goals, CBMS, 1529 Eighteenth St., NW, Washington, DC 20036.

Women and culture series. The University of Michigan Press, 839 Greene St., P. O. Box 1104, Ann Arbor, MI 48106.

Women's studies and family studies. Human Sciences Press, Inc., 72 Fifth Ave., New York, NY 10011.

Women's studies. Routledge & Kegan Paul, 9 Park St., Boston, MA 02108.

Humana Press, Crescent Manor, P.O. Box 2148, Clifton, NJ 07015.

Most American women continue to ignore the importance of breast self-examination (BSE) for early detection of breast cancer, even though they believe it has value in controlling breast cancer, according to a survey conducted by the Gallup Organization for the American Institute for Cancer Research. Two-thirds of American women (63 percent) do not perform monthly breast self-examination, despite the fact that 95 percent report they have heard of BSE. Eighty-eight percent of women agree there is a lot of value in early detection of breast cancer, and 81 percent report they have practiced breast self-examinaton at least once, the survey found. Only 30 percent of women report they have practiced self-examination at least once a month during the past year, which is the recommended frequency for practicing BSE.
In response to these findings, the American Institute for Cancer Research has launched a public education campaign designed to encourage and remind women to perform regular BSE. AICR has developed a universal symbol--a stylized woman with one hand held up as a reminder--and slogan--"Keep In Touch With Yourself"--and will promote this symbol widely. Easy-to-use peel-off stickers can be placed in lingerie drawers, inside medicine cabinets, on calendars or any other location. Individuals may request free sets of stickers carrying the universal reminder symbol by writing to BSE Campaign c/o AICR, Washington, DC 20069.

For nearly a decade, hundreds have worked to advance awareness of women's history. The Women's History Network now makes it possible for those who work in different arenas to gain from and to complement each other's efforts, by providing a central link and resource exchange. Services include a quarterly newsletter which provides information dedicated exclusively to women's history topics; clearinghouse referrals in response to individual requests from Network participants; an annual directory of Network participants and other resources; and

technical assistance in planning and implementing women's history activities. Individuals and organizations interested in becoming members of The Women's History Network should write the National Women's History Project, Box 3716, Santa Rosa, CA 94052 or phone (707)526-5974.

DEADLINES: Sept. 24 for Nov.-Dec., Nov. 24 for Jan.-Feb., Jan. 24 for Mar.-Apr.
AD DEADLINES: Oct. 5 for Nov.-Dec., Dec. 5 for Jan.-Feb., Feb. 5 for Mar.-Apr.
ADDRESSES: Send all Newsletter 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 Polytechnic State University. San Luis Obispo, CA 93407. Applications and nominations are invited through 1/15/85 for position of Dean of the School of Science & Mathematics. Qualifications: doctorate in Biological Sciences, Chemistry, Mathematics, Physics, or Statistics; strong concern for academic excellence; demonstrated evidence of academic leadership; professional achievement; administrative experience; and excellence in teaching. Appt date: 7/1/85. Contact Dr. Tomlinson Fort, Jr., Provost.

University of CA, Los Angeles. Dept. of Math, Los Angeles, CA 90024. Yiannis N. Moschovakis, Chair. (1) A few Asst. Professorships especially for candidates in applied math, algebraic number theory/modular forms, several complex variables & topology. Strong research & teaching background required. Will also consider outstanding candidates in other fields and/or at higher levels. Salary $24,500 for academic year. Teaching load: 5 quarter courses per year. Also several positions for visitors & lecturers. Write to Chair. (2) Subject to administrative approval, a few adjunct Asst Professorships; 2-year appt. only; strong research & teaching background, no restriction as to field. Salary $24,500 for academic year. Teaching load: 5 quarter courses per year. Write to Chair. (3) 3 or 4 E. R. Hedrick Asst. Professors. Applicants must show strong promise in research & have received the Ph.D. after 1/1/84 (but may be of any age); no restrictions as to field; salary $30,800. 3 year appt; research supplement of $3400 first summer. Teaching load: 4 quarter courses per year, including one advanced course in candidate's field. By 1/15/85 contact Chair.

National Science Foundation. Division of Computer Research, Washington, DC 20550.

The Directorate for Mathematical and Physical Sciences is seeking qualified applicants for the position of Deputy Director, Division of Computer Research. This position is in the Senior Executive Service with a salary currently ranging from $59,223 (ES-1) to $64,008 (ES-3) for new SES appointment. Appointment may be on either a career or two- or three-year rotational basis. Applicants must have a Ph.D. or equivalent professional experience in computer sciences or related field, substantial research experience and strong evidence of

National Science Foundation. (contd)
scholarship in computer research, and supervisory/managerial experience involving the achievement of organizational objectives through subordinates. Applicants should contact Margaret Cademartori on (202) 357-7857 to request announcement EPS 84-24WB (career appointment) or announcement EPS 84-34WB (limited term appointment). Announcements contain complete qualification requirements and application procedures. Applications must be received by October 5, 1984.

Georgia State University. Dept. of Math & Comp. Sci., Univ. Plaza, Atlanta, GA 30303. Anticipated tenure track positions for mathematician, statistician & computer scientists with Ph.D's beginning 9/1985. Required: strong research potential & commitment to teaching. In math prefer fields of numerical analysis, numerical linear algebra, discrete math, linear & matrix algebra. In statistics prefer applied statistics, linear models & statistical computing. In Comp. Sci. prefer theoretical comp. sci., artificial intelligence, operating systems, software engineering, data communicators, networking & analysis of algorithms. Send application by 1/31/85, vita without birthdate, but including citizenship status, 3 letters of reference & transcripts of all graduate & undergraduate work to Chairman.

University of Idaho. Dept of Math & Applied Statistics, Moscow, ID 83843. James Calvert, Chmn. Two tenure track Asst. Professorships in math. Ph.D. in math required. One position requires specialization in combinatorics, graph theory, and finite group theory with interest in Turan & Ramsey theorems, & nilpotent injectors in solvable & nonsolvable groups. Demonstrated achievement in research & teaching necessary. Duties: research & teaching undergraduate & graduates through the Ph.D. level. Send vitae, list of publications & 3 letters of reference. Recent graduates should include transcripts. Closing date: 2/1/85, then monthly until search is ended.

University of Iowa. Dept of Math, Iowa City, IA 52242. Robert H. Oehmke, Chmn. Tenure track, tenured positions & visiting positions at all levels for academic year 1985-86. Send application, vita & 3 letters of recommendation to Chmn. Selections begin 12/18/84 & will be based on evidence of applicants' effective teaching & research achievements & potential; instructional needs of dept; and potential for interaction with faculty at research level. Special attention will be given to applicants in differential equations.

University of Illinois, Chicago. Dept of Math, Stat & Comp Sci, Box 4348, Chicago, IL 60680. Louise Hay, Head. Anticipated positions in pure math; applied math & numerical analysis; probability & statistics; computer related math & theoretical comp sci; mathematics & computer education. Required: excellent research record & ability to direct graduate students. Salary & rank commensurate with qualifications; prefer applicants with postdoctoral experience seeking a 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 two letters of reference & a letter of support from a Dept member at UIC.

Purdue University. Dept of Math, West Lafayette, IN 47907. Joseph Lipman, Acting Head. (1) Several tenure track or research asst. professorships 8/1985. Exceptional research promise & excellence in teaching required. (2) Possibly one position at assoc prof/professor level 8/1985. Excellent research credentials required. For all positions send resume & 3 letters of recommendation.

University of Maryland. Dept of Math, College Park, MD 20742. John Osborn, Chmn. Tenure or tenure track positions 8/1985; rank & salary dependent on qualifications. Joint appts with other units are possible. Exceptionally strong research program necessary. By 2/1/85 send vita, description of current research & 3 letters of recommendation to Chmn.

Brooklyn College (CUNY). Dept of Math, Brooklyn, NY 11210. Tenure track professorial positions for Feb. or Sept., 1985. Ph.D. required; also commitment to research & teaching. Rank & salary dependent on qualifications. Send vita & 3 letters of recommendation to George Shapiro, Chairperson. Applications for Feb., 1985 must be received by 9/28/84.

Cornell University. Math Dept, White Hall, Ithaca, NY 14853. Six visiting teaching appointments for Mathematics professors on sabbatical from private Liberal Arts Colleges in the East. Salary: Up to $15,000 for academic year, plus fringe benefits. Duties: Teaching two identical freshman calculus courses back-to-back. Advantages: Those receiving support should have time to attend courses and seminars at Cornell. Two such courses a semester may be taken for credit without cost; others may be visited. Cornell is especially strong in pure and applied mathematics, statistics, computer science, and operations research. This opportunity is being provided to give college teachers a chance to upgrade their skills. For the preceding summer, the program will provide a living allowance and tuition. This will allow participants to take up to three courses in the Cornell Summer Session over nine weeks and to participate in a one-week training session before the fall semester. To apply, send two teaching references, a curriculum vitae, and evidence of how such a visit would benefit your home institution. This program is sponsored by the DANA Foundation.

Cornell University. Dept of Education, Stone Hall, Ithaca, NY 14853. Prof. Joseph Novak, Chmn., Search Committee. Asst. Professorship in Math Education, tenure track. Required: Ph.D. in education and/or math with teaching experience in math & research in math education. Active involvement in a cognitively oriented math & science education program. Teaching & supervision in a basic college math course. Supervision of graduate students in math education. Time distribution: 2/3 teaching, 1/3 research & graduate student education. Salary competitive & commensurate with experience. Send application, vita & 3 letters of reference to Chmn, Search Committee.

SUNY - Buffalo. Dept of Math, 106 Diefendorf Hall, Buffalo, NY 14214. Dr. Zbigniew Zielezny, Search Committee Chmn. At least one asst. professorship 9/1/85. Salary competitive. Prefer outstanding applicants in all fields of math; priority will be given to applicants in numerical analysis, algebraic topology, and analysis. Important: high research potential & strong commitment to teaching. By 12/1/84 send supporting information & have 4 letters of recommendation sent to Search Comm. Chmn.

University of North Carolina, Chapel Hill. Math Dept, Chapel Hill, NC 27514. (1) Non-tenured, tenure track asst. professorships, effective Fall, 1985 for applicants with Ph.D.'s & strong research programs in P.D.E; applied & computational aspects of analysis or algebra. Exceptionally strong candidates in other fields will be considered. By 1/10/85 send application, vitae, abstract of current research & 4 letters of reference to Chmn, Math Dept.

University of North Carolina, Chapel Hill (contd)
    (2) Two year, fixed term, appt. as Lecturer in Math 8/1985, for applicants with Ph.D.'s & research programs in Algebraic Geometry or Singularities. Dept will conduct special research year in Algebraic Geometry and Singularities with distinguished visitors during 1985-86. Send applications, vitae, abstract of current research & 4 letters of reference to Chmn., Math Dept.

Bowling Green State University. Dept of Math & Stat, Bowling Green, OH 43403. Vijay K. Rohatgi, Chair. (1) Tenure track Asst. Professorship. Required: Ph.D. by 8/15/85(date of appt), strong research record or evidence of strong research potential. Preferred area of interest is analysis. Candidates should have graduated within last five years. It is anticipated another Asst/Assoc. Professorship will be approved. Duties: research, undergraduate & graduate level teaching & active participation in our Ph.D. program. By 1/21/85 send curriculum vita, graduate transcript & have 3 letters of reference sent to Chair.

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Sept. - Oct., 1984