

Association for Women in Mathematics

Volume 10, Number 5

NEWSLETTER

Sept.-Oct. 1980

++++++
+
+ DUES! DUES! DUES! DUES! DUES! +
+
+ Dues are due in October. Use the form +
+ on the back page. We are trying to get +
+ off the financial brink: please pay +
+ promptly and consider becoming a +
+ contributing member. +
+
++++++

AMS ELECTIONS

Candidates supported by a majority of the AWM
Executive Committee:

Vice President: MURRAY PROTTER

Member-at-Large: LINDA KEEN
MICHELE VERGNE
SCOTT WILLIAMS

This year we sent questionnaires to candidates for the following AMS offices: Vice President, Nominating Committee, Member-at-Large. In the Vice Presidential race, 1 candidate of at least 2 is to be elected; for the Nominating Committee, 4 of at least 8; and for Member-at-Large, 5 out of at least 10. Not all candidates were known at the time: there may be some candidates nominated by petition, and the AMS Council will fill any remaining slots at the summer meeting in Ann Arbor. You may wonder why we don't wait a little longer to send out the questionnaires: the answer is, there simply isn't time, even though ballots aren't due till November 15th.

That may sound a little strange, so I'll tell you the calendar. The ballots are due in Providence by November 15th, but they are mailed out around Labor Day. Since most of us mail our ballots back the week we get them if we vote at all, any information about the elections really needs to appear in the September-October Newsletter (we tried an election special one year, mailed a little later than the Newsletter, and it didn't work out very well). My editorial deadline for this issue is July 24th. And that's why candidates chosen in August cannot be queried.

Another problem arises because of the deadline. I asked the candidates to return their answers by July 1st. I gave them a couple of days grace and then mailed out the answers to the AWM Executive Committee members for their consideration. The candidates are not known till the beginning of May or so. I mailed the questionnaires on May 6th. Thus it is possible that some of the candidates did not even see the questionnaire until it was too late to respond. The timing also meant this year that 2 members of the Executive Committee were unavailable at endorsement time.

Now that I've given you all the caveats, I want to point out that the four endorsed candidates were approved by a majority of the Executive Committee, which this year means they received at least 6 votes from the 8 members available. This is strong support. And we still feel that it is important to get as much information as possible to you: you're not going to get it from the AMS.

QUESTIONS

1. What is appropriate business for the AMS Council? On what sorts of issues is it appropriate for the AMS as a body to take a stand?
2. What is your perception of the current position of women in the mathematics profession?
3. What efforts should be made to increase the percentage of mathematicians who are women, black, and Hispanics?
4. What responsibility does the mathematical community have toward recent Ph.D.'s (e.g., employability, research environment, tenurability)?
5. What responsibility do colleges and universities have toward students who come to them with inadequate preparation in mathematics?

CANDIDATES' STATEMENTS

VICE PRESIDENT (Paul R. Halmos, Murray H. Protter)

Murray H. Protter

1. The AMS Council should consider problems concerning the encouragement of mathematical research, including the publication of journals and books. Problems relating to the welfare of mathematicians, particularly those of employment, should always be an important agenda item.

With regard to issues for which the Council as a body might take a position, these generally should concern the well-being of the mathematical community. However, there are rare instances in which public concern over the welfare of the general population is so intense (as in the case of the Vietnam war) that a position by the AMS would be desirable.

2. As is well known, there are few women who occupy leading positions in the mathematics departments at major universities; also the percentage of women in mathematics is relatively small. The reasons for this situation are complex, since the evidence

indicates that girls do at least as well as boys in mathematics in elementary and high schools. Apparently there are still social pressures which turn women away from mathematics (as well as from other sciences and engineering) at the college and graduate school level. The mathematical community should encourage talented women to pursue a mathematical career just as it encourages talented men to pursue one. The broad educational problem of counteracting the social pressures which turn women away from the sciences is one in which the AMS should play an active part.

3. Mathematics departments throughout the country should be encouraged to admit qualified applicants regardless of sex or race. Departments which discriminate should be condemned by the AMS Council.

4. The AMS instituted an Employment Register and a publication list of jobs to aid in bringing employment opportunities to the attention of job seekers. Also, a small post-doctoral fellowship program has been instituted by the AMS to help with employment problems at the beginning Ph.D. level. The employment problem at the tenure track level is the most serious one and solutions seem to be elusive. One possibility, that of encouraging early retirement in order to open up jobs for young mathematicians, seems to have been scuttled by the Federal law which increased the retirement age to 70. It is important that mathematics departments give careful, honest and detailed advice to incoming graduate students about the employment situation in mathematics.

5. I believe that most colleges and universities already have pre-calculus courses to help incoming freshmen. For inadequately prepared beginning graduate students, mathematics departments must accept the responsibility for filling in gaps in the students' undergraduate education; to do otherwise would be an irresponsible act on the part of the admissions committee of that department.

NOMINATING COMMITTEE (Ronald G. Douglas, Jerome A. Goldstein, Reuben Hersh, Paul Meier, Ivan Niven, Michael Reed)

Ronald G. Douglas

1. The appropriate business for the AMS Council is everything that affects the mathematical profession and the people in it. Of primary importance is insuring as best possible, conditions and climate conducive to doing research in mathematics in the United States. This doesn't mean that conditions in the rest of the world should be ignored nor that other aspects of the mathematical profession such as teaching should be ignored.

2. I believe that women in the mathematics profession have made considerable strides in the last decade or so but that much remains before the encouragement and rewards for women are the same as those for men. Much of the change necessary would have to come in areas over which the AMS can exercise little control such as the attitude of society and the attitudes of junior high and high school students. (I have a mathematically talented daughter in the eighth grade so I see the latter problem first hand.)

3. I believe every effort must be made to identify all mathematically talented youngsters and then to provide encouragement and support. While this would undoubtedly aid a certain percentage of white males, the largest gains would be expected amongst women, blacks, and hispanics.

Also I believe every effort must be made to recruit qualified women, blacks, and hispanics to University and college positions. Unfortunately, current economic and demographic conditions make this difficult but I don't believe quotas are the answer.

4. I believe that the mathematical community has an important responsibility toward all recent Ph.D.'s since the future of the profession rests with them.

5. Once a university or college accepts a student, it has the responsibility to teach the student at the student's level. Moreover, before graduation the student should have attained the appropriate level; cheap degrees cheat the student.

Jerome A. Goldstein

General Comment: People's "principles" are generally time dependent. "Reasonable" people are usually good listeners and fairly flexible. Concerning your five questions,

I cannot give crisp, clean and brief answers that I know with 100% assurance I'll stand behind several years from now. With that caveat, here are the responses.

1. The Council's main business is to do as much as possible to promote the health of mathematical activity. It follows that the welfare of mathematicians is among the Council's concerns.
2. Mathematicians have recently become better informed about the significant contributions women have made and are making to mathematics. The atmosphere and the conditions for female mathematicians to secure faculty positions and to advance in them seem to be better now than previously. Women seem to be more prominent in mathematics now than at any previous time in my career.
3. Many professions, including mathematics, have (correctly) tried in various ways to increase substantially the number of their qualified female and minority practitioners. Mathematics has been much less successful than disciplines such as law and medicine for obvious economic reasons. The current efforts to remove psychological and social roadblocks should certainly be continued. We should continue trying to solve this problem in spite of the current state of our ignorance of how to do this effectively.
4. Plenty. But unfortunately mathematicians have little influence in university budgets. Recent Ph.D.'s should not be exploited with heavy teaching loads. Better to require less teaching for less salary. The mathematics community should do all it can to create and maintain an environment conducive to scholarship for all mathematicians, especially the young ones.
5. Mathematicians should be keenly interested in mathematical training at all levels. It is much more productive to work toward eliminating deficiencies than to assign blame to high school teachers and others. Mathematics departments should assume responsibilities in remediation matters, and university administrations should provide the essential financial support.

Reuben Hersh

1. Appropriate business for the AMS Council is any issue which is of serious concern to the members of the AMS as mathematicians.
2. In spite of improvements in the recruiting policies of graduate schools and industrial employers, women continue to be rarities among tenured faculty in most mathematics departments.
3. Good advising and financial aid at the undergraduate level would probably be the most productive way to increase the percentage of women, black, and Hispanic mathematicians.
4. The mathematical community has a responsibility to help recent Ph.D.'s survive and grow as mathematicians. We may not be able to do very much about creating more jobs, but at least we can be sure that those recent Ph.D.'s who are employed in mathematics departments are given reasonable working conditions. The burden of increased teaching loads and limited resources must not be thrown onto young, untenured faculty.
5. Students who come to the university with inadequate preparation in mathematics deserve help and encouragement to overcome their deficiency. However, this does not mean that college credit should be given for remedial work at the secondary or elementary level.

Ivan Niven

1. The AMS Council should be concerned primarily with furthering of mathematical research in the United States and Canada, and cooperating with organizations similar to the AMS in other countries. More specifically, this involves a publication program in mathematics, and the general dissemination of information on opportunities in mathematics: fellowships, scholarships, job opportunities in industry as well as in colleges and universities. The AMS should take stands on issues relevant to its purpose, including political matters relating to mathematics. On political matters not relating to mathematics, the AMS should not take stands, even though the matter may be of the greatest significance for the U.S. and Canada, or to some particular members of the Society.

2. It is clear that women could and should play a larger role in the world of mathematics. This can be achieved in a variety of ways, most of which involve the encouragement and support of women who want to move ahead in the field. (The Association for Women in Mathematics is an example of a supporting group.) "Equal opportunity" should be made a reality, not just an easy slogan to parry the issue. Encouragement entails a vigilant attitude to eradicate put-downs and other discouragements.
3. The answer to question 3 is similar to that of question 2, set forth in a broader context. However, since women are uniformly distributed throughout the population, but blacks and Hispanics are more heavily concentrated in certain areas, a special observation can be made. The universities and colleges in areas with large black or Hispanic populations should be pressed to encourage, through financial aid and other means, mathematically talented persons to pursue the study of the subject, and to provide positions on the faculty for such people. This is not to say that institutions in areas with smaller proportions of blacks and Hispanics should not participate in this effort: they should, especially on the job side.
4. Students should not be encouraged to pursue graduate work to the Ph.D. degree unless their professors are prepared to help them get located in satisfactory posts. (I have felt very strongly that for the past decade too many students were encouraged to continue to the Ph.D. degree. We scaled down, but not quickly enough.) The AMS should take the lead in seeking a balance between the production of Ph.D.'s and the availability of jobs.
5. Strangely enough, this is the most difficult of the questions. I lean toward the position that a college or university, especially a state school, should start with the students where they are, and move them forward. If the students haven't had some basic topic, provide it. However, secondary school teachers ask specifically that college courses covering essentially high school material should not be offered for credit. But if these elementary courses are offered without credit, the students rebel very strongly. Disadvantaged students feel that since it is not their fault that they lack the basics, they should not be penalized by having to learn elementary material without earning academic credit. Some compromises are clearly necessary. Nevertheless, if some of the students need some elementary instruction before they can succeed in the regular courses, it must be provided.

Michael C. Reéd (late)

1. I believe that the main business of the AMS and its Council is furthering research in mathematics. However, social and political issues affect the membership, so it is natural for the most pressing issues to come before the Council, particularly if they relate directly to the membership as mathematicians (for example: discrimination against groups of mathematicians on the basis of religion, sex, race, or national origin).
- 2-3. I think that the AMS should make a strenuous effort to fight discrimination and to ensure equal opportunity for all members of the mathematics community. Further, I think that it is appropriate for the AMS to spend some resources to let women and minorities know that they will be treated as equals within the profession. However, I am opposed to quotas (even when they are euphemistically described as "goals") and to all other forms of special treatment for religious, racial and national minorities and women with one exception: I support maternity leaves with automatic contract extension.
4. I do not think that the mathematical community has a responsibility per se to recent Ph.D.'s. Most recent Ph.D.'s are bright adults who could earn a living in many lines of work and who chose mathematics with full knowledge of the job situation. We do have a responsibility to mathematics which requires us to utilize our resources in such a way that the brightest young researchers are offered positions which allow them to develop their research potential.
5. It is clear that we support ourselves by teaching students and that if we can't teach them advanced things we must teach them elementary things. The extent to which a mathematics department sacrifices teaching to advanced students or normally prepared students so that it can devote more time to the inadequately prepared will, and should, vary from campus to campus depending on the mission of the college as defined by its students, faculty, and source of financial support.

MEMBER-AT-LARGE (Donald L. Burkholder, Eugenio Calabi, Alan J. Hoffman, Linda Keen, O. Carruth McGehee, Michele Vergne, Scott W. Williams)

Donald L. Burkholder

1. A member of the Council of the American Mathematical Society can play a key role in promoting the welfare of mathematics, mathematicians, and potential mathematicians. It is appropriate for the AMS to take a stand on any issue that affects this welfare.
2. The position of women in our profession has improved somewhat over the last twenty-five years but there is still a long way to go. There are more women now in mathematics, many of whom are making outstanding contributions, as women in the past have done, but without past and present hurdles to overcome, there would be a great many more.
3. The principal effort must be to encourage students at all levels to become mathematically alive so they can move freely into the sciences, high-technology industry, or into mathematics itself.
4. There is a great responsibility. For one thing, the mathematical community must help open up more mathematical jobs in industry, medical research, social research, and the like, where growth prospects of mathematics are excellent.
5. They have the responsibility of giving the students what they need. At most universities and colleges, much more could be done to help build the confidence of the student in his or her ability to understand, use, and enjoy mathematics.

Alan J. Hoffman

5. For each college there is a minimal set of mathematical facts and skills needed. If a college admits a student without the required preparation, the contract implied by the act of admission makes the college responsible to try to bring the student up to at least this level.
4. The Ph.D. advisor has a responsibility to help the student find a suitable job and to make the student aware of and capable to assume academic or industrial opportunities in mathematically-related fields. The mathematical community in general should of course discourage the game of musical non-chairs for non-tenured faculty, but its principal responsibility in this area is to work to increase the number of jobs. Even though this may depend mostly on demography and economics, it seems to me that in too many cases (1) instruction in mathematics has been surrendered to engineering and other faculties and (2) mathematical or mathematically-related areas (computer science, operations research, statistics) have been surrendered to new departments. Some of these surrenders were corollaries of pejorative distinctions between pure and applied mathematics popular in my generation. We should recapture what we can and resist further losses.
3. I am concerned not only about the low representation of women and minorities in the membership of AMS, but also (a) the fact that it epitomizes a low participation in the culture and jobs of a technological society, and (b) so few members of AMS are doing something about it. There exist a number of vigorous programs to make students aware of mathematics and its uses (like Women and Mathematics), to encourage scientists to spend sabbaticals at minority colleges (like the Faculty Loan program of several companies), to help students overcome fears of mathematics, to find and train specially gifted minority students, etc. While we cannot expect all AMS members to have the dedication and talent of (to cite two at the risk of slighting others) Eileen Poiani at St. Peters or Allan Gewirtz at Brooklyn, it is surely possible for the mathematical community to do much much more.
2. I assume the question asks my perception of the sign of the derivative in measures of accomplishment, status or power, but my personal perspectives don't indicate any sign. About 10% of my colleagues in the mathematics department at the National Bureau of Standards 25 years ago were women and the same is true of my colleagues at IBM; 2 of my 15 Ph.D. students have been women, and about 10% of my joint papers were written with women; I see no trend in my personal work. In my research interests (linear algebra, linear programming and combinatorics) there are outstanding women, one of whom (Olga Taussky-Todd) was a principal influence in my work, but again I see no trend in these

subjects. About the mathematical world generally, I have less information. But I do have a sense that women have not received a proper share of recognition in such ways as the awarding of research funds or selection for editorial positions on journals, and this is one of various inequities and flaws in the way honors are distributed in our profession. Although sexual bias may be one of the causes, clearly other mores are also involved.

1. The bylaws state that the Council can speak for the AMS on almost anything related to the profession. But it is ineffectual to speak too frequently on issues whose relevance to the profession is limited, no matter how passionate our personal commitment. Of course, there will be occasions for the AMS to express its collective outrage, but the tactics of effective protest require that we do not raise our voices too often.

So I would hope that most of the business of the Council would be concerned with advancing the art and science and uses of mathematics, the amount and distribution of research funds, the organization of periodicals and conferences, the abolition of intra-professional discrimination, broadening of skills and knowledge of our members into new areas, the training of students, special efforts for those handicapped by culture, poverty or physical disability, developing an accurate public view of mathematical work, etc.

Linda Keen

1. Appropriate business for the AMS Council consists of any issue which involves mathematics or mathematicians in their role as mathematicians. This definition is meant to be broad and to include questions involving arrangement of meetings, the publishing of journals, problems of employment and funds for research, as well as moral and political issues which affect mathematicians' ability to function professionally.
2. The number of women active in the mathematics community has increased perceptibly in the last fifteen years. For example, there are more invited women speakers at AMS meetings and more women serving on AMS committees. The pressures brought to bear on society in general, and on the mathematics community in particular, by the women's movement account for much of this change. However, there is still a long way to go. The economic and demographic situations have changed so that it is more important than ever for women's groups like the AWM to articulate the special problems women mathematicians face and to provide a network to help deal with them.
3. The greatest efforts to increase the percentages of mathematicians who are women or who belong to minority groups must be made at the elementary and high school levels. Since part of our role as mathematicians is to train prospective teachers, we should pay more attention to the problem of altering the attitude of these students. One way to do this is to provide more role models. We must also find new ways of discovering talent among minority students who are often very poorly prepared when they enter college.
4. The mathematical community has a responsibility to help its junior members deal with the problems of jobs, tenure, etc. Mathematics departments must take their role as service departments more seriously and teach more applied mathematics, computer science, and remedial mathematics. Ways must be found to maintain a research environment for faculty and colleges where graduate programs don't exist. There are also many possibilities for mathematicians in nonacademic positions, and these need to be explored to a greater extent than they have been.
5. We have a big responsibility to all our students, and this certainly includes those with inadequate preparation in mathematics. See (3) and (4) above.

O. Carruth McGehee

1. As for the Council, see Article IV of the AMS Bylaws; I interpret it broadly. I also take a broad view of what the AMS as a body can address; I suppose there are some subjects that ought to be excluded in principle, but it seems to me that the procedural restraints in Article X of the Bylaws are adequate for sorting things out.
2. In recent years, I have read hundreds of files of applicants for jobs in my department. My perceptions are based mostly on this carefully studied but limited

sample of reality. I perceive that the women in mathematics are doing good work and earning good reputations. But their number seems not to increase.

3. I don't know how to increase the numbers of women and minorities who enter the profession. Certainly where bias is at work to discourage or defeat their efforts, we ought to oppose it. We ought always to favor procedures that will counter discriminatory tendencies and promote fairness.

4. Departments owe graduate students good advice as to what to expect from the job market, how to prepare for it, and how to approach it.

The Society should be always making the case for research, and for mathematics education, and for the expenditures to support them properly. Whatever the profession's prosperity level at any given time, it is important that the job market should favor excellence and function as fairly as possible. I favor (for example) clear commitments by employers, minimal use of strictly-one-year appointments for new Ph.D.'s and reasonably high standards for tenure.

5. My University has open enrollment. We provide remedial courses for those who are not ready for degree-credit work, and it is certainly our obligation to do so. Remedial courses can only temper the effects of inadequate preparation by the schools; therefore we are obliged also to speak about the problem in a constructive and persistent manner to the public-educational establishment.

MARJORIE LEE BROWNE: In Memoriam

by Pat Kenschaft of Montclair State College, NJ

Until 1949 no American Black woman had received a Ph.D. in mathematics. That year there were two -- Evelyn Boyd Granville from Yale University and Marjorie Lee Browne from the University of Michigan. There have been about 15 more since then, and on October 19, 1979, Marjorie Lee Browne became the first of them to die, apparently of a heart attack.

Dr. Browne had several publications and had ambitious plans for her retirement, just begun at the time of her death, but most of her career was devoted tirelessly and effectively to helping her people share the joy and creativity of studying mathematics and to enabling them to use math for a rewarding career. Less than two weeks before her death she told me, "If I had my life to live again, I wouldn't do anything else. I love mathematics."

She taught at North Carolina Central University from 1949 to 1979 and was department head there from 1951 to 1970. For 25 years she was the only person in the department with a Ph.D. in mathematics. She taught 15 hours a week, both undergraduate and graduate courses. She served as graduate advisor for ten Master's degree theses in the Department of Mathematics. No wonder she had little time for research!

Under her leadership NCCU became the first predominantly Black institution in the U.S. to be awarded an NSF Institute for secondary teachers of mathematics. She directed the mathematics section of these Institutes for 13 years. Her summers were filled with teaching secondary teaching, and she wrote four sets of Lecture Notes for their use: "Sets, Logic, and Mathematical Thought," 1957; "Introduction to Linear Algebra," 1959; "Elementary Matrix Algebra," 1969; and "Algebraic Structures," 1964.

"Her manifestations of conspicuous attainment and scholarship, coupled with her dynamic academic leadership, inspired many high school teachers to receive graduate degrees or advanced training and, thereby, she contributed significantly to the improvement of the quality of Mathematics Education in schools and colleges throughout North Carolina and the South...

"Her thoroughness, demands for excellence and rigor, wisdom, vision and productive powers in the classroom have profoundly influenced not only the academic growth and development of countless students but also their aspirations to achieve and succeed in

the field of Mathematics. She helped students--many of whom came to her with less than adequate preparation--discover that mathematics was a challenging creative pursuit, and her encouragement and instruction equipped many to pursue the study of mathematics to the completion of the Ph.D. degree. Graduates of this department during her tenure have made significant achievements in the professions (industry and government) and have performed in the graduate schools of other universities with a high degree of success."

Thus wrote Dr. William T. Fletcher as he recommended her for the position of Professor Emeritus. Dr. Fletcher was one of Dr. Browne's many proteges. He earned his doctorate in mathematics from the University of Idaho and succeeded her as department head at NCCU; he holds this post at present.

In 1975 Dr. Browne became the first recipient of the W. W. Rankin Memorial Award for Excellence in Mathematics Education, given by the North Carolina Council of Teachers of Mathematics. The announcement says, "She pioneered in the Mathematics Section of the North Carolina Teachers Association, helping to pave the way for integrated organizations."

She was the principal writer for a proposal for a \$60,000 grant from IBM to fund the first Electronic Digital Computer at NCCU to be used for academic computing. In 1960 and 1961 she directed the installation of this computer laboratory at NCCU. During the academic years 1966, 1967, and 1973, she served on the Advisory Panel of the NSF Undergraduate Scientific Equipment Program. She was a Faculty Consultant in Mathematics for the Ford Foundation during the academic year 1968-69. In 1969 she obtained for her department the first Shell Grant for awards to outstanding students; these still continue.



Dr. Marjorie Lee Browne

1914 - 1979

She was born on September 9, 1914, in Memphis, Tenn., to Lawrence Johnson Lee, a railway postal clerk, and Mary Taylor Lee. Her only sibling was a brother two years older than she, who later taught physical education at Southern University in Louisiana and was head football and baseball coach there. His undergraduate degree was also in mathematics, but he then received a Master's degree in physical education. He predeceased his sister by a number of years.

Their father had also attended college for two years (which was extremely unusual at the beginning of this century) and was known as a "whiz" in mental arithmetic. He early taught his children about the fun of mathematics and kept up with their mathematical studies as long as he could.

Marjorie herself told me, "I always, always, always liked mathematics. As a child I was rather introverted, and as far back as I can remember I liked mathematics because it was a lonely subject. I could do it alone. I was privately educated after eighth grade and I had excellent teachers."

Her mother died before she was two years old, but when her brother began school, her step-mother was willing to respond to the little girl's request for real lessons at home. Later she too attended the LaRose Public School in Memphis.

Her family then sent her to LeMoyné High School, a private AMA school started after the Civil War by the Methodist and Congregational Churches to educate Negroes. The students were all Black, but the faculty was interracial. She credited much of her later success to her excellent preparation there. She was graduated in 3½ years and at this time also won the Memphis city championship for women's singles in tennis.

College funding was difficult during the Depression, but some combination of scholarships, working, and borrowing took her through Howard University. It is her cousins' impression that her father took very seriously his responsibility as one of the few steady earners in the community (with a Civil Service government job), and borrowed money not only for his children's education but also to help others. A much younger cousin who lived with him while Marjorie was at college remembers he would invite the

high school football team to his home for nourishing meals because they could get them no other way. From then on she didn't like spaghetti and meat balls because she had so much at that time!

Marjorie Lee contributed her fine singing voice to the Howard University choir. In 1935 she graduated cum laude.

Her teaching career began at Gilbert Academy in New Orleans, a Methodist secondary school for Blacks. During this time she lived with an uncle, and a cousin who lived in the same house still vividly remembers taking a course from her and at the end receiving one of the few "F's" of his career. "She was completely honest. It didn't matter what relationship you were to her. Once you portrayed an interest in mathematics she stuck right with you. Otherwise she had no time for you. That was her life-- mathematics and physics."

He tempers these remarks by remembering also how they bought a record player together. The payments were 50¢ a week, so they each contributed 25¢ a week. This purchase is indicative of her life-long interest in music. He described her as "a tremendous listener with an ear for the classics."

When she began to think of graduate education, she evidently talked with a man who lived across the street from her father, who had gone to the University of Michigan and who reported that the fees there were not too high. This was the most important consideration, and in 1939 she received her M.S. from that institution.

She then joined the faculty of Wiley College in Marshall, Texas, and began work toward her doctorate during summers. Eventually she took a leave from Wiley College; in 1947-48 she was a teaching fellow at the University of Michigan. Her dissertation, written under the supervision of G. Y. Rainich, was "On the One Parameter Subgroups in Certain Topological and Matrix Groups." In 1948 she was elected to Sigma Xi and became an institutional nominee for the AMS. The following year she received her Ph.D. in mathematics.

She joined the MAA in 1950. In August, 1955, her article "A note on the Classical Groups" was published in the American Mathematical Monthly.

She obviously believed in continuing education for herself as well as for her many students. She was a Ford Foundation fellow, sponsored by the Fund for Advancement of Education, in the academic year 1952-53, during which time she studied combinatorial topology at Cambridge University in England. She traveled throughout Western Europe during this year. In 1958-59 she was an NSF Faculty Fellow studying numerical analysis and computing at the University of California at Los Angeles. This time she seized the opportunity to travel in Mexico.

The academic year 1965-66 found her again an NSF Faculty Fellow, this time studying differential topology, especially Lie groups and Lie algebras, at Columbia University in New York City. She attended a Conference on Mathematics in the Behavioral Sciences at Stanford University in July and August of 1957 co-sponsored by the Social Science Research Council and the MAA. And in June, 1973, she went to the Georgia Institute of Technology to a Conference on Applications of Mathematics in Behavioral, Engineering, Medical, and Management Sciences.

My only conversation with Marjorie Lee Browne took place the first time I ever telephoned a stranger to ask about her own life. I was full of apprehension about my reception. But she had not responded to my written request for information about her to use in my upcoming talk on "Black Women in Mathematics" and since she was the first to obtain a Ph.D., I did not want to neglect her if I could help it. She was very kind to me, and gave me courage to telephone others and thus collect much varied information. However, she kept asking, "Why are you doing this now?" Somehow I couldn't bring myself to articulate the feeling beyond preparing for my speech--that she was a pioneer and no longer young, and I wanted to generate a primary source about her life while she was still alive and could check it. She offered to send me her complete resume, and it arrived promptly. The following week she died.

Her sonorous voice with its kindly but firm and businesslike tones impressed me even over the telephone. It seemed to me she could have made a career on the stage

with that voice, and I'm sure it was an asset in the classroom. She told me repeatedly, however, how much she likes working alone. "I do have plenty of friends, and I talk with them for hours at a time. But I also like to be alone, and mathematics is something I can do completely alone." Her resume says she was divorced with no children.

Her cousin told me, "Sometimes she tended to be introverted, but once she got out everybody enjoyed her and she enjoyed herself." She talked and gesticulated dramatically and had an excellent sense of humor. Often she was "the life of the party."

The conflicting demands of teaching and administration for the sake of others against the desire to develop fully her own intellectual gifts is clear in this account of her life, and is shared by the other Black women in mathematics that I have interviewed. There is little time for research and writing when one feels an urgent obligation to share one's own achievement--to the point of teaching fifteen hours a week, chairing a department, and teaching and administering a program for secondary school teachers in the summers. Dr. Browne planned a monograph on the real number system for her retirement, but again she did not have the time.

During the last part of her life she often gave financial aid out of her personal resources to gifted younger people so that they could pursue their education. To continue this part of her efforts, the Marjorie Lee Browne Trust Fund has been established. It will give scholarships each year to able students in the NCCU Department of Mathematics and support student-oriented programs in mathematics. Donations can be sent to the NCCU Department of Mathematics, P.O. Box 19796, Shepard Station, Durham, NC 27707. Checks should be made to the Marjorie Lee Browne Trust Fund, and all contributions are tax-deductible.

Sources

1. Telephone conversation on 10/6/79 with Dr. Browne and the three-page vita she subsequently sent me.
2. Telephone conversations and correspondence with Dr. William Fletcher in 1980.
3. Telephone conversation on 7/11/80 with Lavern Taylor Pierce, a first cousin.
4. Telephone conversation on 7/12/80 with Thaddeus Taylor, another first cousin.
5. Recommendation of Professor Browne for Professor Emeritus.
6. Appeal for contributions to the Marjorie Lee Browne Trust Fund.
7. "W.W. Rankin Memorial Awards," MATH NEWSLETTER, NC Department of Public Instruction (no date or volume number on newsletter).

Pat Kenschaft gave an invited talk on "Black Women in Mathematics" at the annual meeting of the AMTNE last fall and has submitted an article on this subject elsewhere. She has compiled a possibly complete list of black American women with a Ph.D. in pure or applied mathematics and a partial list of those with a doctorate in mathematics education. Vivienne Mayes of Baylor University will speak on "Black Women in Mathematics" in January, 1981, at the San Francisco meetings.

BUNTING INSTITUTE PROGRAM FOR SCIENCE SCHOLARS

The Program for Science Scholars is designed to enable postdoctoral scientists to conduct basic research of excellence in the most favorable academic research settings. Each scientist will receive a two-year Radcliffe appointment to undertake research in a laboratory or research group at a major research university in the Boston area. The stipend will be \$16,000 in the first year of appointment and \$16,500 in the second year; each year \$4,000 will be available for research expenses. The appointment deadline is October 1, 1980 for appointments from July 1, 1981 through June 30, 1983. Inquiries should be made to: Program for Science Scholars, The Bunting Institute, Radcliffe College, 10 Garden St., Cambridge, MA 02138. Phone: (617)495-8214.

THE NSF AND WOMEN IN MATHEMATICS

by Mary Gray, American University, AWM Affirmative Action Officer, June 26, 1980

Alice Schafer, chair of the AMS-MAA-NCTM-SIAM Committee on Women in Mathematics, Mary Gray, and Solveig Espelie met with the advisory committee and the professional staff of the mathematical sciences section of the National Science Foundation on June 10. The idea for the meeting arose with Richard Atkinson, retiring director of the NSF, when the same representatives of mathematical organizations met with him last fall. In both meetings the issues raised focused around two concerns:

- 1) How can the NSF support of research and education encourage, or at least not discourage, women in mathematics?
- 2) How can the NSF improve its own equal opportunity record in employment and committees?

There is apparently some support for the notion of channeling some money into grants especially for young (mathematically, not chronologically) investigators, particularly for travel and other out-of-pocket research expenses. The AMS Committee on Science Policy has formulated a similar, although very limited, recommendation, and in other sections of the Division of Mathematical and Computer Sciences, the NSF staff itself has promoted such a scheme. Concentrating on young researchers would have a heavier impact on women mathematicians because of the demographics of the mathematical research population.

There was also concern expressed that special NSF women-in-science programs were not supporting activities which would accomplish their alleged purposes. Most women mathematicians feel that enough time and energy has now been spent on finding out that there aren't many women in science and that now is the time for action programs. Such advice has not in the past been well received at the NSF. The new Women in Science bill (S. 568) would be a marked improvement, but the Carter administration, the science establishment and university administrators have been pressuring Congress, both directly and through the NSF, to defeat the bill. Anything that is to be done will have to be done outside the NSF and its advisory committees, as nearly as the delegation could tell.

The mathematical sciences section is hiring its first ever woman professional staff member (permanent or rotator). Some discussion centered on the fact that although the person's qualifications are not less than those of the male program directors, she is being hired as an associate program director. There are similar problems in the entire NSF hierarchy. Women in math, or more generally in science, should probably concentrate on recommending women and men with non-sexist perspectives for these positions, particularly at the level of White House appointees.

Some attention was also devoted to attempting to ascertain the sensitivities of the program directors to sexism in reviews (use of "investigatrix," "the lady," other patronizing or disparaging sexist comments). The staff and advisory committee claimed to be very sensitive to such matters and assured the delegation that such bias would disqualify a reviewer. The staff also asked for recommendations for reviewers, advisory committee members, prospective staff, etc. There is currently one woman (a statistician) on the advisory committee; she was not at the meeting.

That the math sciences section staff appeared unaware of its obligations with respect to advertising positions seemed startling to the women present. Assurances were offered that in the future at least the AWM and the National Association of Mathematicians will be contacted as well as ads being placed in obvious places like the AMS Notices and not only in the NSF Bulletin. (This is an in-house publication; apparently one must await the death of a current member of the mailing list in order to receive it.)

In general, while it is not clear that everyone on the staff or advisory committee understands or cares about the problems discussed, some aroused sensitivity appeared. In particular, in view of the fact that many women and minorities have in the past felt that funding agencies as well as the mathematical establishment in general have been inhospitable, one program director has offered to write something making clear NSF policies and extending a special invitation to apply for grants.

If contact with the section and its advisory committee is maintained, perhaps there will be some improvement. In particular, the meetings of the advisory committee are open: if you have any issue you want aired or if you just want to go and listen, contact Bill Rosen, head of the mathematical sciences section, NSF, Washington, D.C. 20550. If you want to support the Women in Science bill (S. 568), contact your Senator, Washington, D.C. 20510.

The same group of women will be meeting with the advisory committee for the science education directorate in October and would appreciate hearing from you if you have some suggestions as to issues we might raise or proposals we might make.

LETTER TO THE EDITOR

It was with great interest that I read "Climbing the Academic Ladder: Doctoral Women Scientists in Academe: part two" in the March/April, 1980 Newsletter. Since boys and girls perform in mathematics similarly in the early years and only begin to diverge at around age twelve, it is likely that this divergence has more to do with the socialization process rather than genetic endowment. As your article suggested, female students appear not to be motivated to take math courses and the attrition of female students rises with the difficulty of the courses.

Educators are becoming increasingly aware of the salience of sex-role stereotyping in textbooks that exists in all subjects and all grade levels, particularly in math and science. The most common stereotypes found show girls and women as passive bystanders and spectators who watch males performing some activity. In a grammar school science textbook boys were shown riding bicycles, throwing basketballs and pushing objects to demonstrate movement. A girl is shown with wind blowing her balloon--she is shown as not having control over the movement. In one textbook it was found that Madame Curie, one of the few women scientists pictured, was placed in the background watching males working on an experiment. In effect, she was reduced to the status of laboratory assistant.

While only 20% of the illustrations in these science textbooks are girls (and as noted there are great qualitative differences between boys' and girls' pictures) adult women are only 6% of the illustrations. While men are shown in many occupations, women are shown almost exclusively as housewives and mothers. Where women are shown working they are almost always shown in nurturing professions such as nursing and teaching. Some pictures showed girls as "objects of experiments, being injected or having balls thrown at them" (Weitzman and Rizzo, 1974:6). In mathematics texts boys and men are shown to be competent in math, but girls are shown being baffled by counting to 3 or 20! Even adult women are shown dealing with stereotyped math problems such as dividing pies or shopping. Math textbooks also use sex as a category for dividing people--girls are set off as people who sew or cry.

The samples above are from only two subject areas, but these patterns are found in all subject areas. The recent textbook evaluation that was conducted in our local school district has confirmed these findings.

As Bardwick and Douvan note, the young girl is socialized to be feminine but with only a vague image of femininity. Her response to achieve that goal is a withdrawal from "what is clearly masculine" (1971:232). The implicit messages conveyed by the textbooks clearly define math and science as masculine territories. The evidence your article presents that shows the positive effects of having female faculty members as role models for female students seems to confirm the negative results of a lack of female role models shown in the textbooks in the early grades.

Since women will be locked out of many of the science fields unless they begin taking math courses early it is imperative that this situation be altered at the early levels. Choosing not to study math is a handicap in many areas for women as well. What can your members do to help correct some of these deficiencies? Women scientists and mathematicians can visit local schools--elementary through secondary--and talk to students

about their careers. Also, pressure in the form of letters need to be applied to the publishers of textbooks to devote more space to providing both positive images of women and girls and images of women working in science.

Educational Equity Project is in the process of designing a program of supplemental instructional materials that are needed in all subject areas; however, this is a local project whose nonrenewable grant is soon to expire. It is my firm hope that I can inspire some of your members to put some of their efforts into this badly needed area of reform.

Sincerely, Nancie L. Merritt, Supplemental Materials Coordinator,
Educational Equity Project, 219 So. Orange Ave., So. Orange, NJ 07079

Bardwick, Judith M. and Elizabeth Douvan, "Ambivalence: The Socialization of Women",
in Woman in Sexist Society: Studies in Power and Powerlessness, eds. V. Gornick
and B. K. Moran. New York: New American Library, 1971

Weitzman, Lenore J. and Diane Rizzo, "Biased Textbooks". The Resource Center on Sex
Roles in Education, Washington, D.C.

CONGRATULATIONS!

Kathleen DeLello of Canton, MA, and Jane Chung of Hyde Park, MA were both participants in this year's Olympiad Training Session.

Dr. Cheryl Griffiths Tropf, a senior staff mathematician at the Applied Physics Laboratory of The Johns Hopkins University, has been awarded the third Congressional Science Fellowship to be sponsored by the AMS, MAA, and SIAM. She received her B.S. in physics from the College of William and Mary and her M.S. and Ph.D. in applied mathematics from the University of Virginia.

AWM BREAKFASTS

Jessie Ann Engle, Dept. of Math., The Ohio State University, Marion, OH:

Ten members and friends of the Association for Women in Mathematics met for breakfast at the MAA Ohio Section Meeting on 25 April 1980 at Wittenberg University in Springfield, Ohio.

Suzanne Damarin of the Ohio State University told us that she is exploring the possibility of starting the Women and Mathematics program (WAM) in central Ohio. WAM is an MAA-sponsored program of visiting lectures to 8th and 9th grades by women active in fields requiring mathematics training. It is paid for in part with local funds and in part nationally by IBM. The objective of the program is to increase the interest of young people, particularly young women, in mathematics and to encourage them to continue their study of mathematics. Everyone at the breakfast expressed interest in developing the WAM program here in Ohio, and Suzanne will distribute information about it.

The next Ohio meeting of AWM is planned for the fall meeting of the MAA Ohio Section at John Carroll University in Cleveland, October 17-18, 1980.

Violet B. Haas, Professor of Electrical Engineering, Purdue University:

I arranged a breakfast meeting of the AWM at the 1980 National Meeting of SIAM in Arlington, Va., on Saturday, June 7, 1980. Perhaps because of the time (starting at 7!) and because it was the last day of the conference, only three women showed up. (There were eight women giving talks at the conference and other women were also conference attendees.) We spent the time discussing how we got to be mathematicians and reminiscing about our lives as graduate students.

I will again call an AWM meeting in conjunction with the next SIAM meeting I attend. Only next time it will be a lunch meeting.

JILL CLAYBURGH, MATHEMATICIAN?

The following two articles are reprinted by permission of the copyright holder, The Daily Princetonian. Thanks to Jill Mesirov for sending them in.

Clayburgh visits math classes in preparation for new movie, Nov. 27, 1979, by Phil Walzer

The woman who straggled into assistant professor Benedict H. Gross' Mathematics 106 class five minutes late yesterday morning received more notice than the average tardy student.

As she scribbled down the solution to an integration problem in the back row of the room, some students turned around to catch a quick glimpse of her. Others smiled among themselves.

The cause for the commotion in the normally tranquil calculus class was no ordinary Princeton student; it wasn't even a Princeton student at all. The latecomer was actress Jill Clayburgh.

Clayburgh, who was nominated for an Academy Award for her performance in the film "An Unmarried Woman," visited Princeton yesterday to research her upcoming role as a mathematics professor in a film scheduled for release next October.

Math Anxiety Clayburgh, who sat in on two math classes yesterday, said she has no background in the field.

"I hated math when I was going to school," she said. It's "all very new to me."

Although Clayburgh did not get a chance to speak with any female math professors--"there aren't any here at the moment," she noted--she said the mathematicians she did encounter on campus were "very funny and outgoing."

They were "nothing like the stereotyped mathematician," she added.

180 degrees, in fact The character she will portray is by no means your everyday mathematician, either. In fact, she is "just the opposite," Clayburgh said.

The role is "flamboyant, elegant, glamorous and delightful," Clayburgh said, "the kind of teacher (where) everyone wants to take her course."

That's not the limit of the character's variance with the average Princeton math professor.

During the movie, Clayburgh is living with one man when she begins an affair with a second and falls in love with a third--all in the span of a weekend. "Pretty racy," she noted.

Clayburgh said she decided to do her research at Princeton because the scriptwriter for the film, Eleanor Bergstein, is the wife of Princeton English professor Michael Goldman.

"An Unmarried Topologist?" Claudia Weill, who directed the critically acclaimed film "Girlfriends," will direct the movie, which is as yet untitled. Michael Douglas, a star of "The China Syndrome," will co-star in it, Clayburgh said.

Commenting on Clayburgh's visit, Gross said he had "a delightful day. It wasn't any disruption to the class at all."

Although calling it "not inconceivable" for a math professor to live such an active sexual life, Gross said his own private life bears little resemblance to that of the character which Clayburgh will portray. ...

The actress reminisced about Princeton reunions her father, Albert H. Clayburgh '31, attended, as well as the collection of Princeton T-shirts she has at home.

"If my old Princeton boyfriend could see me now..." she mused.

Professor Benedict Gross takes "The Road to Hollywood", Feb. 15, 1980, by Michael Tyler

Math professors do not often lead exciting lives; as a rule, they are not sufficiently engrossing subjects for a movie. So says one who should know--assistant math professor Benedict H. Gross.

But Gross had hardly been living the typical professor's life. In fact, last Friday he flew off to Hollywood to advise in the filming of actress Jill Clayburgh's new movie.

Gross's involvement with the cinema began last November, when Clayburgh and math professor Hale F. Trotter decided that Gross would provide a good model of a young math professor, the role Clayburgh plays in an as yet untitled movie. ...

California, here he comes When Clayburgh left that day, Gross may have thought that his involvement with the movie had terminated. But last Friday a long limousine arrived at Fine Tower to take him to New York's Kennedy International Airport, where he caught a plane that took him to Hollywood and the movie business.

"We went to the set, which was a soundstage, all indoors," he said. "I checked over the classroom set and the mathematicians' apartments," to insure their realism.

"I also wrote out some mathematical gibberish for them."

While Gross was on the set, he had the chance to see some scenes filmed. With all the tinkering on the lighting and sound, and endless takes of the same scene, a typical shooting session took longer than Gross expected.

"They'd spend three hours shooting the same scene, which would probably be only 20 seconds of film," he said.

Gross was invited to the set to ensure the mathematical accuracy of the film.

Don't take notes Even though Gross did eliminate the mathematical flaws in the script--"there were a lot"--the movie still isn't completely accurate. "There are times when you have to sacrifice some mathematical correctness for the sake of the movie," Gross explained. He added that no mathematicians seeing the film would be distressed by those minor inconsistencies.

While the math may seem a minor part of the movie, which is concerned with the love life of Clayburgh's character, Gross noted that there are reasons for the stress on technical perfection.

"It's supposed to give her an intellectually impressive veneer," he said, and convince the audience that she really knows her math. To establish her credentials, Clayburgh proves a lemma to her graduate algebra class as the opening credits roll.

Gross said that he taught Clayburgh the lemma, which she memorized. "I coached Jill and (co-star) John Shea for two hours," he added.

Going incognito For all his efforts on the movie, Gross said, he is being paid little. The whole escapade "is being taken as a joke by all of my friends," he explained. "I asked not to have my name in the credits."

The modest professor further disclaims his efforts in the movie, saying that he was "never that involved." Instead, Gross said he worked as a favor to the scriptwriter.

As a result, while he was in Los Angeles Gross felt no qualms about spending his time away from the set, visiting friends at UCLA. Still, the studio treated him royally.

EDUCATION DEVELOPMENT CENTER

The Education Development Center (55 Chapel St., Newton, MA 02160) is working closely with the Wellesley College Center for Research on Women to review, publish, and disseminate materials developed through funding made available from the Women's Educational Equity Act Program. Some of its newest materials deal directly with mathematics and women. Two films and a booklet are designed to help educators and community people encourage young women to consider science- and math-based careers. Expanding Your Horizons in Science and Mathematics: A Handbook for Planners details how to plan, conduct, evaluate, and follow-up conferences designed to increase young women's interest in mathematics and science. The Math-Science Connection: Educating Young Women for Today, a film for parents, educators, and other concerned adults, presents four examples of exemplary programs for girls and women who are considering scientific or technical study. Sandra, Zella, Dee, and Claire: Four Women in Science, a film for junior and senior high school students who have an interest in science, explores the work and lives of four women: an astronomer, a mechanical engineer, a veterinarian, and a laser physicist. These materials were developed by the Center for Career and Life Planning and Department of Mathematics/Computer Science, Oakland, CA. Project director is Lenore Blum, long active in AWM; and the film producer and director is Peter Abramowitsch.

HISTORY OF WOMEN ENGINEERS

Martha M. Trescott is a historian of technology and research associate in the College of Engineering at the University of Illinois. Very little has been written about the history of women engineers in the United States, and no comprehensive history on this subject is to be found. The objectives of her project are:

- 1) to locate and disseminate information on the history of women engineers in the U.S., 1850-1975 (the overarching objective);
- 2) to arrange and analyze the data for the compilation of a scholarly history of women engineers in the U.S.;
- 3) to assist in the preservation of archival materials and in the recording of the oral recollections of many women engineers;
- 4) to assist in providing role models, through the medium of history (both recent and the more distant), for women considering engineering careers;
- 5) to assemble data and information which would be useful in conferences, workshops, and lectures; and
- 6) to provide information and impetus for a history of the major American professional society in this area, the Society of Women Engineers.

She would like to administer a questionnaire to as many women engineers as possible. If you are a woman engineer or know some, write to Martha M. Trescott, 112 Engineering Hall, University of Illinois, Urbana, IL 61801.

NEW REPORT ON ACHIEVEMENT AND PARTICIPATION OF WOMEN IN MATHEMATICS

reprinted from the CBMS Newsletter

The Education Commission of the States has recently issued Achievement and Participation of Women in Mathematics: An Overview by Jane M. Armstrong, the report of a two-year study funded by the National Institute of Education. The purpose of the study was to identify the most important factors related to the problem of women's participation in mathematics and to determine the relative importance of those factors to guide future research and intervention efforts. The vehicle for the study was a national survey of 1452 thirteen-year-olds and 1877 high school seniors. The data collection centered upon achievement in mathematics, participation in mathematics, sex-role stereotyping, career and academic plans, the student's attitudes toward mathematics, parental influence and the influence of significant other people in the student's lives.

The large sex differences found for mathematics participation in previous studies were not found in this national survey. It was also found that most of the factors which seem to affect participation for the older group are the same for males as well as females. The results of the study indicate that thirteen-year-old females start their high school mathematics career with at least the same ability as their male contemporaries. In fact, thirteen-year-old girls are better at computation and spatial visualization than males. Their problem-solving skills are nearly equal. By the twelfth grade, males have overtaken females. Males excel in problem-solving but have abilities in spatial visualization and computation comparable to those of their female counterparts. The hypothesis that males dominate mathematics because they have a superior ability in spatial visualization is not supported by the study results.

The results indicate that certain groups of variables open to intervention strategies are related to participation and that these variables predict participation. Three groups of variables were found to have the greatest effect on participation: positive attitudes toward mathematics; perceived need for mathematics for future career and educational plans; and influences of significant others, including parents, teachers, and counselors. Thus intervention strategies aimed at instilling and sustaining the

positive influences of these factors are good prospects for maximizing participation in mathematics. Copies of the overview report are available free on request from Education Commission of the States, 1860 Lincoln St., Suite 700, Denver, CO 80295.

OF POSSIBLE INTEREST

In Vol. 2, No. 1 of The Mathematical Intelligencer, p. 5, is a letter from Else Hyrup of Denmark describing a bibliography she wrote titled "Women and Mathematics, Science & Engineering." A note adds that copies are available free to libraries and individuals.

According to an article in the Journal of Diseases of Children, immunoregulatory genes located on the X chromosome may explain why women live longer than men and are less frequent carriers of viruses.

The National Council on Family Relations (1219 University Ave. S.E., Minneapolis, MN 55414) will hold its annual meeting in Portland, Oregon, October 22-25, 1980.

Women & Literature: journal published annually by Holmes & Meier Publishers, Inc., 30 Irving Place, NY, NY 10003. They also publish a series of women's studies books.

Feminist Studies: published by Women's Studies Program, University of Maryland, College Park, Maryland 20742.

Feminist Issues: triannual journal published by Transaction Periodicals Consortium, Rutgers-The State University, New Brunswick, NJ 08903.

Write to The National Institute of Education, Washington, DC 20208 for "Grants for Research on Desegregation" or "Grants for Research on Institutions of Postsecondary Education."

DEADLINES: Sept. 24 for Nov.-Dec., Nov. 24 for Jan.-Feb., Jan. 23 for Mar.-Apr.

ADDRESSES: Send all newsletter material except ads to Anne Leggett, Math. Dept., Western Illinois University, Macomb, IL 61455. Send everything else, including ads, to AWM, Women's Research Center, Room 204, Wellesley College, 828 Washington St., Wellesley, MA 02181.

JOB ADS

Institutional members of AWM receive two free ads per year. All other ads are \$10.00 apiece and must be prepaid. The vacancies listed below appear in alphabetical order by state. All institutions advertising below are Affirmative Action/Equal Opportunity employers.

Dartmouth College. Office of Instructional Services & Educational Research. Opening for Assistant Director, Educational Research & Evaluation. Requirements: Ph.D.; well trained in educational research and evaluation with skills in statistical analysis and computer utilization. Interest in instructional technology is highly desirable. Salary \$17,000 - \$20,000 - 11 mo. appointment for 2 years. Contact William M. Smith, Dir., OISER, Dartmouth College, Hanover, N. H. 03755. Tel: 603-646-2631.

University of Florida. Dept. of Mathematics. 2 tenure track asst. professorships beginning 8/81. Applicants should have demonstrated research potential. Each salary for academic year will be between \$16,129 & \$18,212. By 11/5/80 please send resume, list of publications & have 3 letters of reference sent to Mark L. Teply, Chmn., Search & Screen Comm., Dept. of Math, Univ. of FL, Gainesville, FL 32611.

University of Hawaii. Dept. of Mathematics. Assistant Professorship in a research-oriented mathematics department. Ph.D. & evidence of research potential required. Send vita and at least 3 references to Prof. Tom S. Pitcher, Chairman, Dept. of Mathematics, University of Hawaii at Manoa, 2565 The Mall - Keller 401A, Honolulu, HI 96822.

University of Maryland. Dept. of Mathematics. Anticipate positions at all ranks in math and statistics beginning Aug., 1981. Outstanding research credentials required. Vita, brief description of current research & 3 letters of recommendation should be sent to W. E. Kirwan, Chmn., Math Dept., University of Maryland, College Park, MD 20742 by 1/30/81 to guarantee full consideration.

University of North Carolina, Chapel Hill. Dept. of Mathematics. Possible tenure track positions for Aug., 1981. Rank & salary dependent on qualifications. Possible joint appointments with other Departments in Mathematical Sciences. By 1/1/81 have 3 letters of recommendation and vita sent to Chmn., Dept. of Math, University of N. Carolina, Chapel Hill, Phillips Hall 039A, Chapel Hill, N. C. 27514.

University of Pennsylvania. Dept. of Mathematics E1. Several tenure positions for academic year 1981-1982 or 1982-1983. Preference for one of these may be given to candidates in general area of Algebra. Candidates in all areas should apply. Write to Prof. Stephen S. Shatz, Chmn., Personnel Committee, Dept. of Math (E1), University of Pennsylvania, Philadelphia, PA 19104.

University of Pennsylvania. Dept. of Mathematics E1. Limited number of positions for academic year 1981-1982. Effective date of appointment 7/1/81. By 1/1/81 send resume & 3 letters of reference describing both research & teaching ability to Prof. Stephen S. Shatz, Chmn., Personnel Committee, Dept. of Math (E1) University of PA, Philadelphia, PA 19104.

Stanford University. Dept. of Mathematics. Two senior appointments for Fall, 1981, one in analysis (PDE, geometric measure theory etc.), the other in geometry (algebraic, differential, topological). Please send vitae and bibliography to Hans Samelson, Chmn., Dept. of Math, Stanford University, Stanford, CA 94305.

ASSOCIATION FOR WOMEN IN MATHEMATICS
MEMBERSHIP APPLICATION

The AWM membership year is October 1 to
October 1.

Name and
Address _____

New _____ Renewal _____

Individual \$10.00 _____

Family \$15.00 _____

Retired, Student, Unemployed \$5.00 _____

Institutional affiliation, if any _____

Institutional \$25.00 (Two free advertisements
in the Newsletter) _____

Contributing Member \$20.00+ _____

Make checks
payable to: ASSOCIATION FOR WOMEN IN MATHEMATICS

and mail to: Association for Women in Mathematics
Women's Research Center, Wellesley College
828 Washington Street
Wellesley, Massachusetts 02181

Association for Women in Mathematics
Women's Research Center, Wellesley College
828 Washington Street
Wellesley, Massachusetts 02181

September - October, 1980

NON-PROFIT ORG.
U. S. POSTAGE
PAID
BOSTON, MASS.
PERMIT NO. 12548