

ASSOCIATION FOR WOMEN IN MATHEMATICS

NEWSLETTER

Volume 5, number 6

September - October 1975

REPORT FROM THE PRESIDENT

AMS Elections and AWM Executive Committee Endorsements

Two positions of vice-president of the AMS (and member of the Council ex-officio) for a term of two years, and five positions of member-at-large of the Council for a term of three years, are to be filled in the October election.

Judy Roitman has asked the candidates to submit positional statements. These statements are published elsewhere in the Newsletter. We appreciate the cooperation of all the candidates who responded.

Based on the candidates' statements and past positions the Executive Committee is endorsing the four candidates for contested offices listed below. Ballots should arrive by mid-October (see article on what to do if your ballot does not arrive on time).

Endorsement for Vice President of AMS

The Executive Committee endorses Mary W. Gray, founder and first president of AWM for vice-president of AMS. Mary is presently a member-at-large of the Council, but cannot succeed herself in this position. Mary's election to the vice-presidency will be an important step in the advancement of women in mathematics. We urge all of you who are AMS members to vote for Mary.

Endorsement for Members-at-Large of the Council of AMS

The Executive Committee endorses candidates Joan S. Birman, Ed. L. Dubinsky and Harriet N. Lord for members-at-large of the Council.

Kalamazoo Meeting

There was much AWM activity at the Kalamazoo meeting centering about the panel and business meeting, the open executive committee meeting (see Evelyn Boorman's Report), a session "On Doing Research" organized by Ruth Silverman, and a half-day press conference (an article, "Woman Mathematicians Battle to Upgrade University Roles," appeared in The Kalamazoo Gazette, Aug. 22). The AWM table was a focus of much informal activity; many thanks to Ann Calloway for setting it up in prime location.

As noted below, various issues were raised, many areas of AWM interest and concern were pinpointed and a number of people offered to help coordinate AWM efforts.

Panel

The thing that struck me most about the Kalamazoo panel discussion was the wide variety of personal and professional life styles and experiences (reports to appear in the Newsletter). My own position on the panel is best summed up by the following paragraph from the recent AAUP Committee W Suggestions for Implementing Affirmative Action:

"Affirmative action does not require that underqualified candidates be hired, but if the candidates are essentially equivalent, preference should be given to women or minorities if the effects of past discrimination have not been overcome. It is recognized that candidates are never "equally qualified," but it is also foolhardy to imagine that the hiring process can make as fine distinctions between candidates as it attempts to do, particularly at the entry-level positions when the "promise" of the individual is given much weight. Usually a pool or group of well-qualified candidates can be established and from those a woman or minority candidate, if included in the pool, will be sufficiently well qualified to permit selection. The pitfall of looking for the "super-candidate" from minority and/or women applicants, while accepting something less from white males should be avoided. In particular, one should not hire males on expectations and females on accomplishments."

Broadening the Scope and Effectiveness of AWM

AWM now has over 1000 members. We are an affiliate of the Federation of Organizations of Professional Women (comprising over 60 organizations) and we are included in AAUW's list of Professional Women's Groups. We have had a direct influence on the mathematical community, e.g. in terms of the increased numbers of women speakers at math meetings, women members of AMS committees and Council. See Mary Gray's report in this Newsletter documenting AWM

influences and effects on the mathematical community at large.

Nevertheless, AWM remains an organization geared primarily for a small group of academic women. To be a really effective and viable organization we must broaden our scope to include women interested in the mathematical sciences in general and related fields (e.g. computer science, mathematical education) in both academic and non-academic situations. Thus, this Fall we will begin a campaign to increase our membership. Letters will be sent to various academic departments, industries, journals of professional organizations (e.g. SIAM, NCTM) describing AWM and our activities and encouraging women staff and students to apply.

You can help by posting a Newsletter and some information on suitable bulletin boards. A supply of membership forms can be obtained by writing the Wellesley office. For another idea, Alice Schafer suggests that a Newsletter subscription (i.e. AWM membership) would make a good holiday gift this December.

#### Special Interest Sub-Groups

We hope to coordinate efforts of the various special interest subgroups of AWM. The Newsletter can then act as an effective communication network linking people with common interests.

An effective way to start a group is to plan a session in conjunction with other professional or regional math meetings. Announcements may be placed in the Newsletter, in the Notices of the AMS, or in the formal program (check deadlines for news items); meeting rooms can be requested.

#### Computer Science

Professors Karen Mackey (School of Advanced Technology, SUNY - Binghamton, Binghamton, NY 13901) and Susan L. Gerhart (Dept. of Computer Science, Duke University, Durham, NC 27706) are interested in coordinating AWM activities related to computer science and in compiling a list of women in this field. Please get in touch with them if this is your interest. Susan has also offered to advise women mathematicians who are interested in re-orienting to careers in computer science.

#### Education

Many AWM members are interested in educational programs and research efforts aimed at increasing the flow of women into mathematical and related fields. Last month I attended an all day meeting on this topic at The Lawrence Hall of Science in Berkeley. A formal statement resulting from this meeting urged governmental and foundational funding agencies to give top priority to action oriented programs. Rita Liff and Nancy Kreinberg, organizers of the meeting, have offered to run a clearinghouse for relevant information and resources; a report from their group will be published in the Newsletter. Rita and Nancy can be reached at: The Lawrence Hall of Science, U. C. Berkeley, Berkeley, CA 94720. Prof. Shirley Hill (U. of Missouri at Kansas City, Kansas City, Mo. 64110) is also interested in coordinating efforts in this area.

#### Speakers Bureau

Many members, as well as myself, have expressed great enthusiasm at the impressive group of speakers (and topics) listed in the Speakers Bureau (see the July-August Newsletter). If you would like to join the Speakers Bureau, please submit your name, topics, and audiences for which suitable to the Wellesley office. All AWM members and friends are urged to encourage their institutions to invite these women to speak.

#### New Job Services and Job Monitoring

If you are in the job market, send a set of stamped self-addressed envelopes to the Wellesley office. Then, as soon as a page of job ads is available, a xerox copy will be sent to you. This should help to alleviate problems due to the delays caused by sending the Newsletter bulk mail. Susan Montgomery has suggested that we also accept "job wanted" ads. This service will now be available on an experimental basis.

We will try to more closely monitor the job ads appearing in the Newsletter, to follow up on how the jobs eventually get filled, and to appraise the effectiveness of our services. Please let us know if you, or anyone you know, has secured a job through the Newsletter or these other services; let us know if you have reason to be suspicious of any of the ads. Harriet Lord (C.P. 9751, Ste. Foy, P. Q., Canada) has offered to coordinate this monitoring effort.

#### Continuing Investigations of Discrimination

The Executive Committee now has a number of discrimination cases in its files and is continuing its investigations. Here, we are attempting to coordinate efforts, where feasible, with other groups: e.g. AMS Committee on Academic Freedom, Tenure and Employment Security;

Joint Committee on Women in Mathematics; AAUP Committee A. If you have a discrimination complaint we urge you to contact us as well as the other groups.

We will not, in general, be publicizing individual cases. However, a composite report resulting from our investigations is being prepared. This report will document patterns of discrimination, the history of these cases, the actions taken and their effectiveness, and suggestions for further courses of action. Alice Schafer is coordinating the preparation of this report. Mary Gray will be presenting testimony in Washington next month to the Department of Labor on behalf of AWM.

AWM Finances and the New Dues Structure

It is generally agreed that AWM needs money to support its various activities. A new dues structure will go into effect February 1, 1976: \$8 (individual), \$10 (family), \$3 (student or unemployed), \$20 (institutional including 2 free ads), \$5 (ads). More details will appear in the November-December Newsletter.

It is hoped that increased membership and the new dues structure will produce useful revenue. Prof. Christine Stokes (U. of Mississippi, P. O. Box 278, University, MS 38677) has offered to investigate the possibility of AWM applying to governmental and foundational funding agencies, especially for money for research and travel grants. Please contact Christine if you wish to help in this area, or if you have ideas and suggestions.

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The above is an outline of various AWM projects getting under way. I greatly appreciate the many offers of assistance. Further comments and suggestions for other possible AWM endeavors and directions are welcome. Please let me know if you are interested in working in any of these areas.

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SPEAKERS BUREAU

The July-August issue of this Newsletter, pp. 10-12, carried a list of the AWM members who have joined AWM's Speakers Bureau. An addition and a correction to that list are given below. Any member wishing to join the Speakers Bureau should write to the Editors, AWM Newsletter, c/o Mathematics Department, Wellesley College, Wellesley, MA 02181, giving name, topics and audiences for which suitable.

Institutions, industries and organizations wishing to invite any of the speakers listed with the AWM Speakers Bureau should contact the individual speaker directly. Anyone desiring a list of speakers registered with the Speakers Bureau should write to the Editors at the address given above.

Correction: Professor Violet Haas' address should have been given as:

School of Electrical Engineering  
Purdue University  
West Lafayette, IN 47907

Addition:

Speaker  
Lynn M. Osen  
Author WOMEN IN MATHEMATICS  
University of California Ext.  
Irvine, CA 92664

Topic  
History of women in mathematics

Audiences  
Any level

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REPORT ON THE AMS COUNCIL MEETING AT KALAMAZOO  
by Mary Gray

The Council of the AMS met on 19 August at the Summer Meeting at Kalamazoo. Several important committees made their reports:

1) The Nominating Committee completed its report. R. H. Bing is the only candidate for President-Elect (to become President in 1977). Cathleen Morawetz is the only candidate for Trustee. The names of candidates for the other offices will appear on the ballot to be mailed on or before 10 October. Instructions on what to do if you do not receive a ballot appear elsewhere in this issue.

2) The Committee on Academic Freedom, Tenure and Employment Security obtained permission to file an amicus brief in a case in which it has been involved. Chairman Paul Mostert (Kansas) reported that if Lehigh University does not satisfactorily resolve several cases involving violations of the AMS-endorsed AAUP 1940 Statement of Principles and charges of discrimination, then he will introduce a resolution at the January Council meeting calling for AMS censure of the institution.

3) The Committee on Committees presented a report on the reorganization of the AMS; most of its proposals were referred back to the Committee for further study. There will, however, be direct election of some members of the Nominating Committee. To obtain details or to offer suggestions contact the chairman, Emery Thomas (University of California, Berkeley).

4) The committee charged with drawing up implementation plans for a new category of external membership to replace reciprocity agreements with foreign math societies reported but its report was rejected. The situation currently is that the AMS has agreements with all of the societies it did before, except the South African (that was cancelled by the AMS).

The Council passed the following resolution: The AMS shall not hold meetings at hotels or other places where facilities are administered or designated in a discriminatory fashion.

Quote from the Trustees' minutes when they considered this issue

..."the FBI will investigate complaints of discrimination and assigns high priority to them..."

The issue of blind refereeing was reopened primarily because one associate editor of the Proceedings, Norman Blackburn, (Manchester) refuses to comply with the Council's directive and Saunders MacLane has refused to serve as a referee. There was a proposal that the procedure be abandoned, but it was defeated. However, Blackburn is to be allowed to continue as is so as of now the Proceedings has blind refereeing except for group theory.

The general tone of the Council was one of failure to take action. AWM members would find it instructive to attend AMS Council meetings.

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BLACK AND FEMALE

by Vivienne Malone Mayes

Talk given at the AWM summer meeting in Kalamazoo, 1975

When one is both Black and Female, it is difficult to distinguish which of these traits may account for the way you are received by others. I shall briefly review my career as a student and as a professor in an attempt to use hindsight as a tool in determining the influence these traits may have had on my professional growth. In many instances, it will be quite difficult to conclude whether these events happened because I am Black or because I am a woman or because I am both Black and Female.

My pre-college education took place in Waco, Texas in strictly separate and strictly unequal schools. The law dictated that separate but equal educational opportunities be provided for both races. The separation provision of the law was rigidly enforced, but the "equal" provision was conveniently ignored. I shall not detail the inherent educational disadvantages of a separated school system. These details are available in the text of every lawsuit filed by the NAACP in their fight to abolish a dual school system. Read these texts and, where appropriate, insert my name as the plaintiff, for each of us was victimized educationally by the segregated schools.

Despite the intellectual setback Blacks suffered in the segregated schools, within these

schools certain strong, positive impressions were made. Although the faculty was predominantly female, there was variety in the make-up of these women: some were beautiful and others were plain, some were mothers and some were not, some dressed well and some didn't, some were rigid disciplinarians and dogmatic in their views while some were tolerant. In every Black school I've attended there's always been at least one Black woman teacher or professor with whom I could identify and as a Model I'd like to emulate. Black girls were expected to excel in their studies. No difference was made between boys and girls. The moral lectures given by teachers and designed to stimulate students to aspire to high and lofty careers were directed equally to boys and girls. Girls were conditioned from my earliest recollection to prepare to WORK. Every girl expected to work. Her hope was that through education she could escape the extremely low paying jobs designated for Black women. Boys expected girls to work. Within our homes were working mothers. My father's most affectionate name for my mother was "partner".

Today Black men select wives who can help increase the family income. There is no loss of status because a man has a working wife. A few of these men have Middle Class incomes, but their heritage has approved and accepted the concept of the working woman. Historically, the acceptance of the working wife was imposed on Black men by the discrimination they suffered on the job market. But acceptance of this arrangement has become entrenched and is no longer related to the historical reason.

Perhaps I was personally influenced most by a Black professor I had at Fisk University, Evelyn Boyd Granville, a graduate of Smith and a Ph. D. from Yale University. Her dissertation advisor was Emil Artin. She was no more than six years older than the students she taught. But she set high standards and demanded a quality performance from her students. She was a 'lady' in the traditional sense, yet had superb credentials. I believe that it was her presence and influence which account for my pursuit of advanced degrees in Mathematics. I am also deeply indebted to Lee Lorch whose superior teaching skills made my pursuit of a Ph. D. a successful one.

Girls held the majority in my upper level math classes at Fisk. I recall only two men graduates in Mathematics my senior year out of a total of 18 students. After Fisk, I taught at two Black colleges. In both instances, girls outnumbered boys in every class. Today, this trend continues in Black colleges.

Lest you believe there is complete acceptance of women in all areas by Black people, I'd like to point out one occupation in which the Black woman is still not accepted by the community. This occupation is that of preacher. There are a few exceptions, but by and large, no denomination has encouraged or supported giving women an equal opportunity to serve as pastors in Black churches.

I have given details of some experiences I have had in an all Black situation so that you may get some feeling for the cultural shock I received in my transition from an all-Black to a predominantly white institution.

My first recollection of my tenure as a graduate student at the University of Texas was a summer class which met at 7 a.m. in which I was the only Black and the only woman. For nine weeks thirty or forty white men ignored me completely. I never initiated any conversations as there was no encouragement to do so. It seemed to me that conversations before class on Mathematics between classmates quickly terminated if it appeared that I was listening. My rapport with students in the other two classes was not much better. This was my first experience attending school in a vacuum. My mathematical isolation was complete in that I was not acquainted with any Blacks who had interest in these subjects. My teachers were fair and did not give me any preferential treatment.

For years I felt this initial response to my presence was because I was a Black attending a predominantly white school in the south. However, other Black women have told me they received similar treatment in northern schools. Was my vacuum created because I was Black or female or both?

Friendships eventually developed after several semesters had passed, in which time a group of us had taken the same courses. Most of my classes had two women in them. She and I became very good friends.

In spite of the growing acceptance of me by classmates, certain privileges or opportunities which would have accelerated my mathematical maturity were withheld:

1. I could not become a teaching assistant. Why? Black.
2. I could not join my advisor and other classmates to discuss mathematics over coffee at Hilsberg's Cafe. Why? Because Hilsberg would not serve Blacks. Occasionally, I could get snatches of their conversation as they crossed our picket line outside

the cafe.

It was only after Hilsberg was required by law to serve Blacks, that I noticed that women were seldom included in these informal over-coffee problem solving sessions.

3. I could not enroll in one professor's class. He didn't teach Blacks. And he believed that the education of women was a waste of the taxpayer's money.

After graduation from graduate school, I joined the faculty of a predominantly white university. By this time I expected to have classes with a male majority. The students have never shown any prejudice toward me as a Black or as a female. As evidence I submit the splendid cooperation I have received in their response as students and of those who have worked as my assistants.

I have never had any complaints about salary or promotions. I have received financial support from the administration for innovative and experimental projects under my direction. An additional safeguard of my welfare has been yearly visits by representatives of the government. They have checked salaries and promotions to determine if I was being subjected to any discrimination. These reports have always been encouraging to me.

One area in which I have been most frustrated is in counseling of gifted women students. Fortunately, the situation is changing. But until recently, their response to my enthusiastic encouragement of what they could accomplish was met with apathy. Their response was a complete puzzle to me. One girl revealed quite frankly that she didn't want to have any special plans for her life so she'd have no difficulty in accepting the plans her husband would have for their lives. Perhaps the greatest service the women's movement will give is to awaken women that they should participate in the decisions which shape their destiny.

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#### HAVE WE COME "A LONG WAY"?

At the Kalamazoo meeting someone remarked that in spite of all the hullabaloo of the past few years there had been very little change in the AMS. I do not think that this is true; moreover, what changes there are, are due at least in part to AWM. When we organized ourselves nearly five years ago, there was no woman on the Council of AMS, nor had there been within the memory of very senior mathematicians; the last woman speaker at an Annual Meeting was over a generation ago; there was no Committee on Women; there was no committee to consider action in cases of sex discrimination; Council meetings were closed (by "gentlemen's agreement") to the AMS membership; activists were unable to get their resolutions through the Business Meetings of the Society; the Council membership was determined by a small Nominating Committee appointed by the President.

All these conditions have been changed. It is not that women are being elected to the Council because they are women; it is that they are not not being elected because they are women. Why was Olga Taussky Todd only suddenly discovered in 1971 to be qualified to be a Council member-at-large and in 1975 to be qualified to be an editor? Since 1971 there have been nine women members of the Council--next year the first woman trustee will serve--and I hope that enough people will vote for me that the AMS will have its first woman Vice-President.

The number of women invited speakers and special session organizers at Annual, Summer and Regional meetings has increased spectacularly. The AMS Committee on Women has put out its Directory and now has become part of a joint AMS-MAA-SIAM Committee on Women which has a whole list of projects underway. The Committee on Academic Freedom, Tenure and Employment Security has well in hand the cases of several women (see report of the Kalamazoo Council meeting elsewhere in this issue). Anyone can come to a Council meeting to see how her/his elected representatives carry out the business of the Society. Business Meetings have passed resolutions opposing discrimination and calling for action (rather than just reports) on problems of employment, teaching loads and class size.

Candidates for Council member-at-large and Vice-President can now be nominated by petition and five such have been elected; the Nominating Committee will be elected at least in part by the membership. The Council has given its attention to employment problems, discrimination issues; blind refereeing has been instituted for one journal. Admittedly, much more work is needed on democratization; especially to insure the continued attention of the Society to pressing problems facing mathematicians.

There are those who feel that AWM should give up on the AMS and work in the society with

a small "s." There is a lot to be said for this, and we have tried to reach out--with our panels, our Speakers' Bureau, through our Newsletter. However, we need help--every complainant about too much focus in the Newsletter on PH.D.'s, or on employment, or on the AMS, or on any other topic, is asked to contribute her/his own article. We have members with various interests, various levels of consciousness, various needs, and we have tried and will continue to try to have a varied program for them.

We cannot claim credit for the increased percentage of women among graduate students in math, except as we have tried individually and collectively to see that they are encouraged and not discouraged and to make them feel that they are not alone. In spite of our efforts and federal and state laws against discrimination, the percentage of women on math faculties has declined. One thing we need to do is to make others aware of continuing problems in this area--how many times have you been told about the unqualified women flooding university faculties--when in fact there is not a flood of any kind of women? I shall be testifying at Department of Labor hearings very shortly on the failure of so-called affirmative action plans to increase the number of women and minorities on university faculties, using math as a horrible example.

#### The Future

We have some short-term goals--an investigation of the hiring and grant-awarding policies at the NSF, further democratization of the AMS, increased use of the Speakers' Bureau. We also have long-range possibilities in mind--establishment of AWM fellowships and research grants, conferences on various topics, publication of a journal. All of these require more money than we currently have available; we can and will apply for grants, but also we need your help--contributions to AWM are tax-deductible and you can remember AWM in your will.

But not to end on a morbid note--

I think that the best thing AWM has done is to bring women mathematicians together--to engender some feeling of sisterhood. It is really good to have a place to gather at the AMS-MAA-AWM meetings--to sit and exchange problems, advice, points of view. As women recognize and value the work of other women mathematicians in research and teaching, so will their male colleagues.

Mary Gray, American University

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#### SURVIVAL OF THE FITTEST

by Everywoman, Ph. D.

So finally you become an Assistant Professor, the first female, the only female in the department. The men who hired you are of conscious good will. Regularly you fantasize them saying, "Mea culpa! We have discriminated in the past, but now we have a woman in the department!"

Well, never mind the sarcasm. You are brave and strong and determined. After all, you've come a long way, haven't you? The department you're in isn't so bad for women; I mean, at least they hired one. The question is how to survive once you've gotten through the door.

For example, despite conscious good will, there are those whose unconsciousness could use a little liberating. You're pretty sure no one'd dare ask you to make coffee or take minutes at a department meeting, but still....

One evening at five, a colleague says in a friendly tone, "How can you bear to go home and cook dinner after working all day?" One response is to gulp and smile (and go into your office and cry). Another is to say, "Oh, I've hired a wife to do that for me!" (And hope he thinks you're very witty.) Another is to say, "My husband (or some other man) is cooking tonight." (And leave the colleague there to pick up his teeth and count his blessings that he's "hired" a wife!) And the last response: "Good Lord, yes, don't you find it miserable too?"

In defense of the last response, I have to admit I've become a gamesperson in the face of chauvinism. I recommend turning the chauvinistic line 'round and making the guy who said it the reference point. This technique is especially useful because it is easy enough to learn even if you don't think too quickly on your feet. Another example: He says, "May I help you on with your coat?" You say, "Thank you, may I help you on with yours?" (If you're quick, you can slip into your coat as you answer. If necessary, you can even help him on with his.)

The other advantage of the technique is that your line is probably humorous due to its sexist nature. Hopefully the raising of his consciousness becomes grin-and-bearable.

Another common pitfall is being mistaken for a secretary when you are in the departmental office. This situation is tricky because while you may be offended, an icy "I'm not a secretary" will not enamour you to the departmental secretaries. (Recall that they not only serve a vital function but are discriminated against much more so than you and also are your most accessible sisters at work.) Usually the people will be asking for information and that they think you're a secretary will not be entirely obvious to everybody watching. If I know the information, I usually end up giving it tersely, and if I don't know it, I find myself saying, "I don't know, you'll have to ask a secretary." An alternate and better technique is not to look up from whatever you're doing; few strangers address you when you seem unaware of their presence. A corollary is don't hang around the office too much unless you're feeling especially masochistic.

The major professional hurdle is becoming a real part of your department, that is, much as I dislike the phrase, becoming "one of the boys". In most departments disregarding the accepted rituals will be detrimental, though the converse isn't necessarily true. Many departments have some kind of lunchtime ritual, whether they eat bag lunches together in the lounge or go off to the faculty club. It is advisable to join them some of the time no matter how much you detest the experience.

For several months I forced myself to lunch with my department twice a week (as often as I could bear). I felt somewhat like a peacock and somewhat foolish being told chivalrously to go first, having my chair held, even having my cafeteria tray carried for me once. (The second time someone tried to carry my tray I was quicker. "Thanks, I can manage" I said nonchalantly whisking my own tray away.) As we got to know each other better, we all relaxed a little, and today I am treated like a person rather than a lady. In fact, I now feel free enough to take my turn along with the others in bringing coffee to the table.

The primary rituals of one department I know of are tennis in summer and basketball in winter. It is no surprise there are no women in that department. Even if affirmative action catches up with them, it is my thesis that any woman hired will have a hard time surviving, unless she happens to be named Billie Jean. Well, at least she could still join "the boys" for lunch.

Another ritual involves language, the type that is "unladylike". The double standard still prevails and we are all losers. One group of us had best get over any hangups we have about hearing "bad" language. The fact that our male colleagues feel they must be careful about what they say in our presence can only act as a detriment to our acceptance.

The other group of us needs to worry about the men accepting our "bad" language. Upon hearing an expletive from a woman, a male colleague of mine once said, "Please! There are gentlemen present!" I laughed in spite of myself, but made a note to control my language in his presence from then on.

There is also a kind of male dialogue which is foreign to women. I've never heard one woman say to another, "How are you, you old bastard?" I don't suggest we pick up this mode of communication in the struggle for equality. It is just another example of how difficult it is to become a peer.

Well, if all of this doesn't get you too depressed and you're feeling especially successful, try to make friends with the guys on the committee on promotions and tenure. Or better yet, write another paper. By the time you come up for tenure you might actually be evaluated on your merits.

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#### SECTIONAL MEETING IN SHREVEPORT

An informal meeting of the AWM was held at Centenary College, Shreveport, Louisiana, in conjunction with the MAA Louisiana-Mississippi Section in February and was attended by eight members. A discussion of the AWM organization and its participation in academia served as our program. Professor Kathleen Ann Drude, Northeast Louisiana University, Monroe, will serve with me as co-chairman of this group. We plan to have our next meeting in February 1976. All AWM Members in this two-state region are urged to attend.

Christine Boyd Stokes



## AMS CANDIDATES ANSWER OUR QUESTIONS.

The AWM sent a questionnaire to candidates for contested AMS office and also one to the sole nominee for president, R.H. Bing. The questions were: 1. What should the AMS do about the unemployment problem? 2. What should the AMS do about political, sexual, and racial discrimination in the mathematical community? Specifically, what do you see as the role of the Mostert \* committee? 3. Should the AMS concern itself with other social and political issues? Under what circumstances? 4. For what offices of the AMS should there be nomination by petition? Do you have any other suggestions about making the structure of the AMS more or less representative? (\* AMS Committee on Academic Freedom, Tenure, and Employment Security)

The answers follow.

### CANDIDATE FOR PRESIDENT

R. H. BING: 1. No one should pursue the Ph.D. in mathematics without being advised before he starts that the future job market is bleak and that he or she will likely have to compete with others for less than enough jobs to go around. For those that choose to follow mathematics in spite of this warning, we should do our best to get them good jobs.

Hence, AMS committees should continue to monitor the situation and keep the mathematical community informed. Oncoming students should be advised of opportunities and hazards.

The few post-doctorate fellowships that AMS sponsors are just a drop in the bucket but show our sympathies. They should be continued.

We should continue to urge NSF and other agencies to sponsor more post-doctorate fellowships. Self-serving arguments that stress the value of these to young mathematicians will not be effective but we will have to show that more post-doctorate fellowships are in the public interest--in fact even more in the public's interest than other worthwhile projects which will be proposed and with which this idea of fellowships will be competing.

Thought should be given to shifting people who have gone stale at mathematics into non-teaching positions. Younger people still active in mathematics would be more stimulating teachers. Early retirement is one possibility. It would even be better to find alternate positions for those being replaced but past attempts to think of non-teaching positions of service that either the public or private sector will support, have not been encouraging.

Do not build expectations of students higher than likelihood of fulfillment. It is simplistic to think industry will welcome all those with training in applications and the government will create free universities to employ the rest.

Departments and individuals (as well as AMS) have a role to play. The number of doctorates will decrease as students learn that other areas offer more security. However, we should not eliminate good programs so as to featherbed for ourselves by eliminating competition from the wave of the future.

We should not sell mathematics short. It has a charm and challenge that makes some willing and eager to pursue it even when it does not carry the cloak of security. If I were a student, I would jump at a chance to become a mathematician.

2. AMS opposes unfair discrimination. We have concern for mathematicians in difficulty and AMS should have committees to decide what is to be done in individual cases.

Sexual and minority discrimination has abated and in some cases is in reverse. I would prefer to see preferential treatment now being given to certain female and minority mathematicians not as unfair competition but as evidence of a special need for viable mathematicians who can better relate to certain students.

3. The historic goal of AMS is to promote mathematics. Some members of AMS want to move toward political and social action but others do not. I would prefer to let mathematics remain the thread that holds us together.

4. I feel a bit uncomfortable in my sheltered position and in this particular election would have preferred additional candidates for president-elect if a change is going to be made soon.

However, in general I lean toward only one candidate. Also because of their special responsibilities, I favor only one candidate for each position of editor or trustee.

I do not think nomination by petition is the ultimate solution to getting representative slates, but it is a start. Some organizations who have used it have put restraints on its use. We do not get an input from much of our membership and those that do exercise an input are likely to have more than their fair share. In practice, it violates one person - one vote. Here is another method of getting outside input. AMS asks its membership each year for advice as to the nominees in the next election. It might help to make the structure or AMS more representative if its membership were advised as to how the advisory information is used. Perhaps in addition to making suggestions, the members might cast one brownie-point toward some candidate for election (or divide the point among several candidates) with the understanding that the n people with the most points are put on the next slate.

It is also important to have AMS committees reflect membership's views. I regard the move to have a committee recommend members for inclusion on committees as a step in the right direction.

#### CANDIDATES FOR VICE PRESIDENT

MARY GRAY: 1. The AMS should improve EIM and the register it operates at meetings in a number of ways. The Society should also look to non-traditional funding sources (e.g., Dept. of Labor under the Manpower Training Act) to retrain Ph.D. mathematicians currently unemployed. Finally the AMS should work for redirection of Federal and state funds to educational programs and other services to the people which require trained mathematicians.

2. The AMS should take firm stands in favor of non-discrimination and affirmative action. It should expose discriminatory practices of employers, in particular academic institutions and government agencies with whom it has close relations. Possible actions in support of those discriminated against include financial and legal aid, provision of expert witnesses, independent investigations and consultation (particularly in the affirmative action area), and censure of recalcitrant institutions. The Mostert committee should continue to operate essentially as is, with increased membership and support, but the whole task should not be left to it. The entire Society is responsible for the insurance of non-discriminatory treatment of its members.

3. The Society should concern itself with those issues which have an impact on mathematics and on mathematicians in their professional capacities. Amnesty is an example of such an issue, although it is only one aspect of the problem of mathematicians' being able to travel freely to pursue their research.

4. There should be nomination by petition for all non-editorial offices - i.e., the process should be extended to the offices of President, Trustee, Secretary and Associate Secretary, Treasurer and Associate Treasurer. Failing this, there should be more than one candidate proposed for some of these offices by the Nominating Committee, which should itself be elected. There should be more input from the membership into the selection of members of committees to insure a broader representation of the kinds of institutions and non-academic employers at which AMS members are located, as well as better representation of those who hold varying points of view regarding the role the AMS should play in society. Only one member of each Editorial Board should serve on the AMS Council, the committee structure should be reorganized and some limitation devised on the number of committees on which one member may serve as well as the length of service in any AMS position. The Council should take over more policy decisions from its Executive Committee and from the Trustees.

STEVEN C. KLEENE: 1. I cannot answer Question 1 without knowing what the AMS has already done, and what the range of possibilities is. I do think one of the lines of approach to the employment problem should be to encourage graduate students to devote some attention to applied fields of mathematics, more than in the past, so they may be better able to exploit the job openings other than in colleges and universities.

2. I oppose political, sexual, and racial discrimination in the mathematical community, and this should be the position of the AMS. I am not acquainted with the Mostert Committee. I do not know when or by whom it was appointed or with what charge.
3. It would depend on the circumstances. I am not ready to try to catalog, in advance and without reference to a specific proposal for AMS action on a social or political issue, what circumstances would justify action (and "concern" without action, at least the action of trying to influence some event, would of course be empty).
4. I do not now have at my elbow (if elected I presumably would then have) the constitution and bylaws and other resolutions (if any) governing nomination by petition. Is there nomination by petition for some or all offices now? In any case, without knowing more about the existing situation than I do now (as I should come to know if elected), I have no suggestions.

Remark: I will mention that recently I served five years as Dean of a liberal arts and science college with over 15,000 students and close to 2,000 faculty. During my tenure in this office, I believe I had good rapport with virtually all the women, and minority members (principally Blacks and Chicanos), of my faculty. Of the jobs offered to outsiders during my Deanship, the percent of the offers which went to women was several times as great as the percent of women on the existing faculty, and this without, in any way, compromising quality standards. We identified this many top-quality women candidates. Of the job offers accepted, the percent that were to women was not as good, since evidently there was extraordinary competition (by institution after institution attempting to increase its proportion of women) for the same pool of outstanding women candidates. Similarly, the College tried very hard to hire in the two minority categories mentioned, and with a degree of success, though it tended to be more difficult to find minority candidates than women candidates.

As a teacher, I have never discriminated against students on political, sexual, or racial grounds. Normally, I would not even know the politics of my students. Of the two women who worked for Ph.D.'s with me, one received the degree and has been continuing to produce mathematically, though she is married and has children; the other married when she had made only a small beginning on her thesis, left the campus, and never made the slightest effort to continue the work on her thesis. One of my Ph.D.'s is part Native American, another is Chinese. (A Black or Chicano candidate never presented him/herself to me for Ph.D. work.

G.D. MOSTOW: 1. The AMS should have a standing Committee on Employment whose charge is to solicit initiatives, study proposals, and make recommendations to the Society for action. Once such recommendations, if any, are approved by the Council, the AMS should use its offices to help implement the recommendations.

2. Abuses in this area are legal problems.
3. Normally, social and political issues are not the business of the AMS. However, whenever the issues reach such large proportions as to interfere with the mathematical activities in the country, the AMS may properly become involved.
4. All offices except the presidency.

LOUIS NIRENBERG: While the AMS has been traditionally an organization devoted to the promotion of mathematics, we have moved into a time when large numbers of mathematicians have serious employment difficulties. Consequently the society must devote more of its energy in looking after some of the problems of its members such as unemployment and discriminatory practices.

M.M. SCHIFFER: Since it is difficult for me to answer specifically the four questions you mentioned, let me answer frankly and in my own way.

I am in the first place a mathematician and love my science and research in it. I respect every good mathematician, regardless of sex, race, or political views and have done so all my life. I must confess that I am not very experienced in actions outside my own field of competence, and I am also quite skeptical about the chances of fighting stupidity and bigotry by organizational action. I would do my best to follow my convictions in every special case which would need action, but in all honesty I should state that my main interest would be the development and stimulation of research and teaching in mathematics and its applications.

#### CANDIDATES FOR COUNCIL

JOAN S. BIRMAN: These questions involve, in my mind, exceedingly complex matters which I find it difficult to answer by stating a "position". With that introductory qualification, let me attempt to give you some of my opinions on the matters raised.

Regarding employment, I feel that the AMS has already taken a number of sensible steps, but that the matter is basically one we are powerless to alter. I think that graduate students should be fully informed as to the seriousness of the job crisis, and should know in detail the situation they will probably face on obtaining their Ph.D's. Statistics on employment of new Ph.D's, on vacancies in permanent positions, on academic and industrial opportunities, are all helpful. I support (with qualifications) the Bers plan to lengthen and broaden the traditional Ph.D training, so that new Ph.D's will be more adaptable and flexible when they seek employment. My qualifications regarding that plan are that it seems to me that it would increase the period of dependency at a time when students are ready to do independent work, and also that it would have the effect of bolstering the stronger schools (which have the resources to offer such a program) at the expense of those with smaller faculties and more marginal operations. Traditionally, one of the strongest aspects of the American educational system has been its diversity, and I would be sorry to see that watered down.

I am in general opposed to the politicization of the AMS. I find it to be divisive and counterproductive. We have one genuine tie with one another--we are all mathematicians, and that is what the AMS is all about. I am also opposed to the "quota system mentality", because I believe that in the long run it is counterproductive. On the other hand, there are times when social or political issues arise which are of such unique concern to us as mathematicians that I feel that it is right and appropriate for the AMS to take a stand. Cases which have come to the attention of the Mostert Committee appear to be of that nature--for example, cases where racial or sexual overtones may have played a decisive role in hiring or tenure decisions. Another example where I feel that it is right and proper for the AMS to take a public stand is if a mathematician is imprisoned or incarcerated in a mental institution, and prevented from working, because his or her politics are unacceptable.

With regard to your question about making the AMS more representative by opening new offices to nomination by petition, I cannot at this moment see that such a need exists. The duties of most of the offices appear to be primarily of a scholarly or administrative nature, and for positions of that type it is not clear to me that it is appropriate to ask that the officeholders be representative of all aspects of the mathematical community. I will, however, keep an open mind on this matter (and others), since up to now I have not had any real experience with the inner workings of the AMS, and perhaps I do not fully appreciate all of the factors that are involved.

ED DUBINSKY: 1. I think that the AMS should become intimately involved in working to alleviate some of the suffering caused by the employment problem. For two years I have been trying to convince people that the NSF research money could and should be used to increase research through supporting un- and underemployed mathematicians. At the last AMS business meeting at Kalamazoo I successfully proposed the formation of a committee which will look for ways to help unemployed mathematicians come to the Winter Meeting. I hope that these ways will include car pools and provision for subsistence living. I support other proposals which have been made such as government sponsored work projects. Finally I think that the AMS should take strong stands against the tendency of Universities to exploit mathematicians during these hard times by reducing salaries and increasing work loads. We should expose situations in which part-time salaries are given for full time work, teaching loads are increased and the road to tenure is artificially cut off.

2. The Society should play a watchdog role over affirmative action programs and publicize cases in which discrimination occurs. We should not only consider specific atrocities but also work

on cases in which racial and/or sexual oppression takes the form of bad working conditions as described above. The Mostert committee along with the committee for legal aid should be given the means for taking an active leading role in finding cases, gathering and publicizing facts, and aiding in court work. Strong support from the Council, as opposed to the wishy-washy actions in Kalamazoo, is essential.

3. The main business of the AMS is to further mathematical activity. It is also true that when a system is riddled with injustices of various forms that lead not only to the disruption of individual lives but the oppression, if not destruction, of entire groups, then it becomes necessary for each human being to use every energy, every organization, every means to struggle against these injustices. These problems can only be dealt with if we become so serious about them as to acknowledge their existence in every aspect of our lives--including mathematics.

It is with this in mind, and with full knowledge of the fact that many members of the AMS do not want these issues discussed in our meetings, and with sincere regrets about the necessity of acting against the wishes of these members, that I and others have worked for many years to force the Society to consider these issues.

4. All offices except the President should admit nomination by petition. The reason for the exclusion is that this position is based on both administrative and scholarly activity. The best way of making the AMS more representative would be to eliminate racial and sexual discrimination and elitism. In the offices of the Society there is a preponderance of white males from prestigious institutions. It is important that the AMS take the lead in redressing the balance and in realizing that today more and more of our best mathematicians have positions at institutions which have been little known in the hierarchy of the AMS.

Regarding structures, I have hopes for the recent proposals coming from the Committee on Committees.

EDWIN E. FLOYD: Frankly, I have not in the last several years had a sustained involvement with national mathematical organizations. I therefore do not have a prepared position on your questions, and do not feel at this stage that I know anything like final answers to your questions. I would of course undertake seriously to involve myself with the full range of matters of interest to the council.

HARRIET LORD: 1. The current employment crisis that the mathematical community is experiencing is an extension, to white males, of the problems that many female and minority-group mathematicians have been facing for some time, i.e. unemployment, underemployment, denial of tenure, and widespread exploitation. It is important that when this problem is eventually solved, it is solved for all mathematicians. In order to solve the unemployment problem, the leadership of the AMS must care enough to take some positive actions. For example, the Council could take a strong position for the adequate funding of existing programs so that current class sizes and teaching loads are not increased. Also, the Society should investigate the use of some types of censure against departments that exploit mathematicians in today's job market. These are two conservative, but concrete, suggestions. The AMS leadership (past as well as present) must recognize its obligation to do something, besides talk, about the job crisis.

2. The existence and purpose of the Mostert committee should be frequently advertised so that more AMS members will become aware of its existence, and how it functions. This advertisement will obviously increase the committee's work load, necessitating its expansion. The expanded committee should include at least one woman and one minority-group member (not just one Spanish-surnamed Black woman.) Since some AMS members consider this to be a radical suggestion, it should be pointed out that one current member of the committee has stated, in print, that one effect of having more women in Mathematics classes is that standards will have to be lowered. The committee can help mathematicians who are victims of discrimination not only by awarding them loans for legal fees and by filing amicus curiae briefs in court cases, but by also taking a role in procedures (departmental and institutional) which the mathematician will go through before taking the case to court.

3. As an individual member of the AMS, I hope that others would agree with me that many social and political issues are the proper business of the Society. The specific issues with which the AMS should concern itself must be decided by the members of the Society.
4. We must have nomination by petition for President, Secretary, and members of the Board of Trustees. These are powerful positions in the AMS. For this reason, those who are elected must truly be representatives for the entire membership. To deny nomination by petition is to imply that the membership is unable to make intelligent choices.

Another way in which the AMS's structure could be more representative is to include more mathematicians on the various Society committees. (There are now relatively few members who serve on many committees.) This should be done in a way to have not only new committee members, but also to have members from institutions and groups of mathematicians (i.e. Blacks, women, unemployed) which have been inadequately represented in the past. For example, there are no unemployed mathematicians on any of the various committees of the Society which are working on the employment situation.

LEE A. RUBEL: 1. A large part of the employment problem is rooted in national and international economics and is beyond the influence of the AMS - besides, I do not see economics as a proper sphere for the AMS to operate in. A central aspect of the employment problem is the priorities given by our society to intellectual, cultural, and scientific values, namely low priorities. I think the AMS should try to change this by a publicity campaign to instruct people that mathematics can be beautiful, important, and valuable. Another aspect of the employment problem is that some mathematicians themselves have hurt the profession by doing silly, ineffective, or overspecialized research. The AMS can help counteract this by tightening its standards of what is published in its own journals, and by discouraging overspecialization in what it publishes, what hour speakers it selects, and what it sponsors conferences on.

2. I think the AMS should generally leave such questions to organizations like the AAUP and ACLU. The only valid role for the Mostert committee would be to set up panels in individual cases to try to give a fair evaluation of the research accomplishments of someone whose research credentials are in dispute.

3. I think the primary concerns of the AMS should be research and scholarship in mathematics, and that it should steer clear of political and social issues, except where there is a clear and direct connection with mathematical research, and where the AMS by taking a professionally informed stand can contribute to a resolution of the issue. All possible protection should be given to political minorities within the AMS who want it to be their voice on mathematical issues but not on political or social ones.

4. I believe that all offices of the AMS should be open to nomination by petition.

Additional Comment: There is one central issue not included in your questionnaire that I want to address - the crisis in mathematical research and what the AMS could try to do about it. Fields are proliferating and splitting off, and mathematicians are overspecializing, all at a great rate. I think the AMS should encourage conferences in interdisciplinary areas and discourage those in minute corners of mathematics. I think the editors of its journals should do everything to keep papers from being published whose only interest is that they are connected with a clique or with papers already published. I think consideration should be given to prizes for people who have contributed most to the broad spectrum of mathematics. I think panels and committees should be set up to study ways of unifying mathematics, and connecting it with the other sciences. Finally, I deplore the great rushes to work in fashionable areas, and feel that more people should be encouraged to work in areas that are unfashionable or "old-fashioned".

BARRY SIMON: I would like to make the following statements in preference to individual answers to the questions raised. Let me first emphasize that one must never lose sight of the

fact that the primary function of professional societies is to meet professional functions (publication of journals, arrange meetings, etc.). Involvement in "political and social issues" should be limited to those of direct relevance to the profession (for example, small minority representation among professionals) and those issues where the professional expertise of the society is of some relevance. The American Physical Society has a division on "Physics and Society" and I see no reason in principle why such a group under American Mathematical Society auspices on "Mathematics and Society" could not be formed. On the other hand, it is not clear to me what societal issues there are where mathematical expertise would be of relevance.

I am concerned about the small number of women and racial minorities among mathematicians. My impression is that the problem is most serious in that the training of these groups is on the whole not as high as that of professional mathematicians because of various subtle prejudices at the student level. It is not clear to me what the AMS can do about this but I would be interested in looking into the matter.

I see no reason why all AMS officers should not be nominated by petition as well as by committee. However if there were too many candidates for the major offices, I would suggest the possibility of a run-off election after the initial balloting.

There is a last issue that has concerned me although again it is not clear what the AMS can do about this. Basically it seems to me there has been something of an imbalance in the research versus teaching aspects of our profession. I am deeply committed to research myself and feel that the AMS must regard its primary function as encouraging first class research. However it seems to me that too many institutions have been promoting second class researchers in preference to first class teachers. This is obviously a very sensitive issue, and I despair on any solutions being found that would improve the situation; but I would regard this as the place where I would attempt to concentrate my effort if I were elected.

D. WATERMAN: 1. The AMS maintains an employment register and has considered the effectiveness of various programs, e.g., the replacement of assistants by new faculty on a limited scale, but it can have little effect on increasing the number of faculty positions. Its efforts would be better directed to programs to provide part-time teaching employment to mathematicians while they retrain themselves in related areas in which employment still exists, as computing science, statistics, operations research, and actuarial science. Further efforts should be made to find ways to make the training in higher mathematics more relevant to non-teaching employment and to curb the production of Ph.D.'s.

2. The question cites three types of discrimination. In my experience I have seen others which were more prevalent in the matter of employment, namely discrimination on the basis of national origin, religion, age, physical appearance, and physical handicaps. Most of these are still with us. It seems clear that there has been a traditional bias against women in the matter of promotion: men with insubstantial research records have seemed to fare better than women with similar records. Individuals now have recourse to state and federal agencies for protection against some of these forms of discrimination, and their willingness to use these agencies seems to be bringing about a substantial change in the sensitivity of university administrations to evidence of such complaints. I would not like to see the AMS involved in these matters except in a case in which the individual cannot obtain redress through usual procedure.

3. In a referendum, the members of the AMS have voted overwhelmingly against the involvement of the AMS in social and political issues. I would think the matter to be settled. There is no consensus in the Society on such issues, nor do most members believe such involvement to be the Society's legitimate function.

4. I should like to wait and see the effect on the Society of the various recent changes.

### AMS ELECTION ENDORSEMENTS

The AWM Executive Committee wishes to express its appreciation to the candidates for AMS offices to be filled in the October election for their cooperation in answering AWM's questions. Nearly all candidates responded to our questions: the candidate for president, the five candidates for vice-president, and seven of the eleven candidates for member-at-large of the Council. The Executive Committee finds itself in agreement with some of the statements of several of the candidates. However, its overall endorsement of candidates for contested offices, based on the statements above and past positions, goes by majority vote of the Committee to Mary Gray for vice-president of the AMS, and to Joan Birman, Ed Dubinsky, and Harriet Lord for member-at-large of the Council of the AMS.

As the Newsletter went to press we heard from Chandler Davis that he has been nominated for the AMS Nominating Committee, as have Phyllis Cassidy and J. Ernest Wilkins.

### BALLOTS FOR THE AMS ELECTION

Last year some members of the AMS did not receive their ballots in time to meet the deadline date for return of the ballots. The Secretary of the AMS, Everett Pitcher, has informed us that the ballots will be sent by third class mail by October 10 with a return date of November 10. If you have not received your ballot by October 24, please notify AMS Secretary Pitcher, Lehigh University, Christmas-Saucon Hall #14, Bethlehem, PA 18015. Under the By-Laws of the Society, he cannot send you a new ballot, but he can keep a count on the number of people who did not receive ballots. If there are members of the AMS who do not receive ballots, we should try to change the By-Laws before the next election.

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### REPORT ON THE OPEN EXECUTIVE COMMITTEE MEETING AT KALAMAZOO

The Executive Committee of AWM and about ten other participants met on August 19. The following is a brief account of the meeting.

It was agreed that AWM needs money for research and travel grants, legal and political activity, and part-time clerical help. Membership dues are going up to \$8 (individual), \$10 (family), \$3 (student or unemployed), \$20 (institution); advertisements will be \$5. AWM will try to obtain some support from foundations, perhaps in connection with International Women's Year.

AWM would like to increase and broaden its membership. One way would be to contact special interest groups, e.g., computer scientists, high school math teachers, through their own newsletters. For instance, Shirley Hill has volunteered to write a letter in the NCTM journal publicizing AWM and inviting NCTM members to join. In this spirit, the topic for the January, 1976 panel in San Antonio is: Women Mathematicians in Industry and Government.

Another important area discussed was the investigation and documentation of cases of alleged discrimination. To insure confidentiality, the Executive Committee is handling these cases in closed meetings. Those who believe they have experienced discrimination or unusual hiring or screening practices, e.g., being considered for a job without having applied, are urged to contact the Executive Committee and/or Paul Mostert (AMS Committee on Academic Freedom, Tenure and Employment Security).

It was decided that MAG and AWM will get together to publish the positions of candidates for AMS elections. The Executive Committee of AWM will feel free to endorse individual candidates in the AWM Newsletter.

Other topics mentioned were monitoring advertising in the Newsletter, the mixed success of our employment register, collecting resumes of jobhunters and running "situations wanted" ads, sending out job lists via first-class mail, obtaining accurate data on unemployment and tenure-track positions, and hiring lawyers on a contingency-fee basis.

Evelyn Boorman

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The deadline for applications for Radcliffe Institute Fellowships is November 1. Inquiries should be sent to: Fellowship Program, Radcliffe Institute, 3 James St., Cambridge, Mass. 02138 phone: 607-495-8211. The Radcliffe Institute Fellowship Program is similar to a post-doctoral program, with no requirements, however, on the time since the final degree.



## A COMPLETELY UNBALANCED BLOCK DESIGN

By Judith Q. Longyear

This experimental design is used to investigate the productivity of  $2n$  strains of wheat. There are  $n$  genotypes of wheat, each of which is sexually dimorphic. We refer to the types of wheat as  $t_1, t_2, \dots, t_n$  and to the male of each type as A, thus we may discuss  $t_3A$  or  $t_7B$  for example.

Preparation Exactly  $n$  blocks of ground are required, each having 2 plots. The blocks are numbered  $b_1, b_2, \dots, b_n$  and the plots in each block are labelled A and B. Blocks  $b_1$  through  $b_7$  are plowed, blocks  $b_1$  through  $b_5$  are fertilized with a good standard mixture. Blocks  $b_1$  and  $b_2$  are given additional fertilizers and block  $b_1$  is fenced against animal intrusion.

Sowing Type  $t_1A$  is sown in plot  $b_1A$  and type  $t_1B$  is sown in plot  $b_1B$ . Immediately after the sowing, all plots B are covered with medium to heavy weight canvas. The weight increasing in regular increments with the block numbers

Growing Season Block  $b_1$  is weeded, fertilized and watered at regular intervals. Fox hunts are held across blocks  $b_2$  through  $b_n$  whenever it seems reasonable to the producers of type  $t_1$  wheat. If any plant in any plot B in blocks  $b_1$  through  $b_5$  grows over  $3\frac{1}{2}$ ", it is cut back to 2". If any plant in any other plot B grows over 4", it is uprooted.

Harvesting Harvest by hand every grain on every plant in plot  $b_1A$ . Have the producer of type  $t_1A$  collect the grain from the other plots, including plot  $b_1B$ .

Weighing Weigh the  $2n$  sacks of grain on a perfectly just scale, provided by the producer of type  $t_1A$ .

Statistical Analysis This design is optimal, in that quadratic regression is never required. Linear regression is required only in the most unusual cases. In all normally encountered cases, type  $t_1A$  will outproduce all the other strains of wheat put together, thus saving the statistician from having to justify his methods to the public. This is only just, since  $t_1A$  is manifestly the better type of wheat.

Other Applications This supremely useful design can also be used in many other areas. It was originally developed for the investigation of creative ability among human beings, and has proven so useful that no other design has even been considered for years.

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## JOBBS

The vacancies listed below appear in alphabetical order in an alphabetical listing of states, followed by Canadian listings.

SRI, Menlo Park, California, Director Statistical Analysis and Computation, Urban and Social Systems Division. PhD in Mathematics, Statistics or Computer Sciences preferred. Will carry out department personnel responsibilities as well as take leadership in acquiring project work; maintain suitable financial performance for department; control the quality of proposals, work accomplished and reports issued and maintain liaison with clients. Contact: Ernesto Romero, Ext. 3521. SRI, 333 Ravenswood Ave., Menlo Park, California 94025 (Tel. (415) - 326-6200)

San Francisco State University. Position open in Dept. of Mathematics effective February 1, 1976. Assist in development of advanced undergraduate Computer Science curriculum and teach some elementary mathematics. 12 hr. load. Ph.D in Computer Science or equivalent and some teaching experience necessary. Industry software experience desirable. Salary & level dependent on qualifications. Address applications to: Dr. James T. Smith, Chairman, Math. Dept., San Francisco State University, San Francisco, CA 94132.

Defense Intelligence Agency has openings for Computer Programmers at GS-334-9/11/12 and Economists at GS-110-7/11. Send a completed Personal Qualifications Statement SF-171 to: Defense Intelligence Agency, Civilian Personnel Division, Recruitment Branch PM-1D, The Pentagon, Washington, D.C. 20301.

Defense Nuclear Agency Program Analyst one position, GS-345-09/11/12. Duties include assisting the Chief, Programs Branch, in exercising surveillance over the DNA portion of the Five Year Defense Program and maintaining the FYDP reflecting program elements, cost categories,

etc. Applicants must be currently employed by the Fed. Gov. or have reinstatement rights as former employee. Requirements: 3 yrs. general experience in administrative, professional, technical or other responsible non-clerical work. Plus: For GS-09 2 yrs. specialized experience of the appropriate type, at GS-11 or GS-12, 3 yrs. of such experience. Contact Mrs. Zehring, autovon 8-221-7592 or commercial 703-325-7592 as soon as possible. Or submit SF 171 & Supervisors Appraisal of Employee Current Performance to Defense Nuclear Agency, ATTN: PACV, Washington, DC 20305. Job descriptions and letters of commendation should not be enclosed with SF 171.

Postal Rate Commission. Senior Rate Analyst, grade PE-27. The duties of this position require exceptional and broad, knowledge of utility ratemaking concepts and regulatory principles and practices. Requirements: BS or BA degree plus graduate work in one of the following would be desirable. Economics, Accounting, Finance, Statistics or Engineering. Plus 8-10 years regulatory work experience. Submit PRC Form 16 and resumes to Administrative Office, Attn: Mr. Pittack, Postal Rate Commission, 2000 L St. N.W. Rm. 500, Washington, D.C. 20268.

Western Illinois University. Chairperson. Dept. of Math. The Dept. seeks a mathematician to assume academic and research leadership beginning Sept. 1976. Applicants should have a distinguished record of scholarship and teaching at university level and preferably demonstrated administrative ability. Inquiries accompanied by resume should be sent to: Dr. Vidya S. Taneja, Chairperson's Search Committee, Dept. of Mathematics, Western Illinois University, Macomb, Illinois 61455.

Indiana University. One senior level opening in statistics and several at rank of Assistant Professor. Applicants for senior position should have established reputations in research and demonstrated effectiveness in working with graduate students. Applicants for Assist. Prof. position should have recently received the Ph.D. and should show promise of making significant contributions in both research and teaching. Interests should be in theoretical or applied statistics or probability. Contact: Maynard Thompson, Chairman, Dept. of Math., Swain Hall-East Indiana University, Bloomington, Indiana 47401.

Indiana University. Two positions, one junior, one senior. In junior position they hope to appoint individuals who have recently received Ph.D. and who show promise of making significant contributions in both research and teaching. Candidates for senior level position should have established reputations in research and demonstrated effectiveness in working with graduate students. They are especially interested in appointments whose research area is in applied mathematics, differential equations or probability. Contact: Maynard Thompson, Chairman, Dept. of Math., Swain Hall-East, Indiana University, Bloomington, Indiana 47401.

Mathematical Reviews. Associate Editor. Since need for more staff is acute it's likely that a temporary 1 yr. appointment will be made within the next few months with possibility of extension later. Preferences will be given to applicants with active research interest in some branch of modern applied mathematics (e.g. operations research, mathematical programming, systems and control theory, information theory, automata). Proficiency in French, German and Russian is essential. Some reviewing or editorial experience is desirable. Applications will be welcomed from persons taking leave of absence from established academic positions. Detailed applications (including curriculum vitae, bibliography and names and addresses of not more than 5 references) should be sent to Dr. J. Burlak, Executive Editor, Mathematical Reviews 611 Church St., Ann Arbor, Michigan 48104.

The Upjohn Company. Biostatistician. Primary responsibilities include: statistical design and analysis of chronic toxicology studies, conducting independent research, and developing new statistical techniques for the evaluation of long-term animal studies. Requirements: Ph.D. in biostatistics or statistics and 1-2 yrs. experience in the design and analysis of animal studies or Master's Degree in the same disciplines and 5-6 yrs related experience. Contact: Bettye Kitch, Personnel Staff, Research Personnel Planning and Administration, The Upjohn Company, Kalamazoo, Michigan, 49001.

College of St. Catherine. Assist. Prof. Applicant must have a Ph.D. in mathematics and strong interest in undergraduate teaching. Specialization and experience in applied mathematics, statistics and/or computer science are desirable. Apply to: Sister Carol Ann Tauer, Dept. of Math. College of St. Catherine, St. Paul, MN 55105.

University of Minnesota. Assist. or Assoc. Prof. of Statistics. Position requires teaching and research. Contact David V. Hinkley, 260 Vincent Hall by 9-15-75 as position begins 3-16-76. University of Minnesota, College of Liberal Arts, Minneapolis, MN 55455.

University of Nebraska at Omaha. Dean of Continuing Studies. They seek an innovative educational leader. Dean is responsible for stimulating and coordinating broad ranges of

innovative programs such as special academic programs for adults such as Bootstrap Program for military personnel and workshops for a wide variety of community interests. An earned doctorate and experience in academic organizations relevant to this position, but not necessarily in continuing education as such, are essential. Nominations and applications should be submitted not later than Sept. 30, 1975 to Dr. John T. Farr, Chairman, Dean's Search Committee, Office of the Provost, University of Nebraska at Omaha, Omaha, Nebraska 68101.

New Mexico Institute of Mining and Technology. Assistant Director of Admissions and Financial Aids. Bachelor's Degree or Higher preferred. One or more years of work experience required. Preference will be given to those with prior experience in Admissions, Financial Aids, Counseling or related job experience. This position requires considerable travel as the director will be responsible for regional student recruitment. This is a full time permanent position. \$8,500 - \$9,500 per 11 months. Send resume and references to Personnel Office, New Mexico Institute of Mining and Technology, Socorro, New Mexico 87801.

New Mexico Institute of Mining and Technology. Vice President for Administration. Person filling this position will be principal advisor to the President on administrative and business affairs, will have primary responsibility for the budget and for space allocation, and will supervise the business, personnel and other service activities of the Institute. Required qualifications: high-level administrative experience in a university or research institute, preferably including contract and grant administration; familiarity with business operations. Applications and nominations should be sent to: Kenneth W. Ford, President, New Mexico Institute of Mining and Technology, Socorro, New Mexico 87801.

City College of New York -- CUNY. Dean of the School of Education. Applicant should be able to demonstrate capacity to conceive teacher preparation programs, a commitment to the future of public urban education, leadership in the development of programs for urban schools, experience in relating to both school and university communities and qualifications for the rank of full professor. Earned doctorate or its equivalent required. Send resume and letters to: Prof. Thomas Carey, Chairman, Search Committee for School of Education, The City College of New York -- CUNY, Room 227 Administration Bldg., Convent Ave. and 138th St., New York NY 10031.

Clarkson College of Technology. Opening for preferably a new or recent Ph.D. in areas of abstract mathematics such as differential topology, algebraic geometry, number theory, etc. Strong research potential and equally strong interest in teaching required. Two course teaching load (with upward pressures). Permanent position with theoretical possibility of eventual tenure. Apply directly to department with copy to Ed Dubinsky, Clarkson College of Technology, Potsdam, NY 13676.

Indiana University of Pennsylvania invites applications and nominations for the position of President. Appointment Sept. 1, 1975 or Feb. 1, 1976. Address communications to: Presidential Search Committee, Box 1687, IUP, Indiana, PA 15701.

Utah State University, Dean, College of Humanities, Arts and Social Sciences. Qualifications: Earned rank of Professor. Record of intellectual and professional achievement in a discipline of the arts, social sciences or humanities. Interest in and sensitivity towards the fields represented in the college (which include landscape architecture, environmental planning, music, theater arts, languages and philosophy, but not mathematics). Teaching experience at both the graduate and undergraduate levels. Demonstrated previous leadership and/or administrative experience. Mail inquiries, curriculum vitae and names and addresses of 3 references who can be contacted, directly to: Dean Eastman N. Hatch, Chairman, Search Committee, School of Graduate Studies, Utah State University, Logan, Utah 84322 by Nov. 1.

Western Washington State College, Vice President for Academic Affairs and Provost. This person is responsible for total academic program. Qualifications: Earned doctorate. They seek a person with strong record of scholarship, college teaching and academic administration. Send list of several references, resume, transcripts of graduate study and any other information considered relevant to: J. Alan Ross, Chairperson, Vice Presidential Search Committee, Western Washington State College, Bellingham, WA 98225. Application letter deadline: Nov. 12, 1975, completed credentials by Dec. 1, 1975.

The fee for each regular advertisement to appear in the Newsletter is \$5 per issue. With our low dues structure and the high cost of

publication, this is the minimum fee we can charge in order to break even. On the other hand, if a college, university or organization cannot afford the fee, then we will publish the advertisement without charge.

Advertisements to appear in the Newsletter should be sent to:  
Editors, AWM Newsletter  
c/o Department of Mathematics,  
Wellesley College  
Wellesley, MA 02181

Due Dates for ads for the Newsletter:

January Newsletter	copy by December 15
February Newsletter	copy by January 15
March Newsletter	copy by February 15
April Newsletter	copy by March 15
May-June Newsletter	copy by May 15
July-August Newsletter	copy by July 15
Sept.-Oct. Newsletter	copy by September 15
Nov.-Dec. Newsletter	copy by November 15

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The AWM job register is changing its method of operation. The job announcements we will now be sending out are those that will eventually appear in the newsletter. However they will be mailed first class by the page rather than in a bulk mailing every month or so as the newsletter comes out.

In order to receive these listings, please send stamped self-addressed envelopes to:

AWM Job Register  
Department of Mathematics  
Wellesley College  
Wellesley, Mass. 02181

Address any questions about the register to:

Judy Green  
10106 Leder Road  
Silver Springs, Md. 20902

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Individuals wishing positions at the present time may want to register with Judy Green and also send their names to the AWM Wellesley Office, c/o Mathematics Department, Wellesley MA 02181. In the last week there have been several telephone calls about openings ranging from those for people with a B.S. degree to those requiring a Ph.D.

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Thanks to all those who so carefully typed their articles for our reproduction process. The criteria are:

the surface covered by type should be 8" wide and no more than 10" long;  
the ribbon must be carbon, the typewriter electric.

If you have material to submit, it is greatly appreciated if you type it according to these specifications so it doesn't have to be retyped.

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OF POSSIBLE INTEREST

Sources of information on legal action include the Sandler project on women (Association of American Colleges, 1818 R St NW, Washington D.C. 20009). Ruth Silverman especially recommends their "Sex discrimination, educational institutions, and the law: a new issue on campus" by Bernice Sandler, which lists all applicable court decisions. And a new book entitled "Cases and materials on sex-based discrimination" by Davidson, Ginsburg and Kay is available for \$16.40 from West Publishing Company, Law School and Education Dept., St. Paul, Minn. 55102.

The Women's Faculty Club of the University of Pennsylvania has issued a report on criteria for academic assessments which grades criteria according to their sex bias. Most get a C.

The Office of Women's Studies at the University of Cincinnati is holding a conference in late April on women and gender issues called Pioneers for Century III. The theme of the conference is power. Information: 1116 Crosley Tower (#614), Cincinnati OH 45221.

A reminder that HEW's regulations on sex discrimination in education are now in effect. According to HEW's own newsletter, they are especially expected to affect admission to graduate and professional schools. What's your school doing?

The Association for Mathematics in Two-Year Colleges is holding its second national convention in Chicago in late October. For information, write to Professor W.L. Drezdson, Oakton Community College, 7900 North Nagle, Morton Grove, Illinois 60053.

The NSF has a program entitled Research Applied to National Needs (RANN). If you have a proposal that might qualify, write to the Office of Programs and Resources, Room 1233, National Science Foundation, Washington D.C. 20550. They are a little-known program with more money than proposals for its use, and consequently are open to nonstandard proposals and proposals from individuals without institutional affiliation.

The armed forces have high level jobs for mathematicians, especially operations research and computer people. JR

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FUTURE AWM MEETINGS

- Cambridge, MA      October 25, 1975      Massachusetts Institute of Technology 12 noon-1 pm  
(For information contact Stephanie Troyer, University of Hartford)
- Los Angeles, CA    November 15, 1975      UCLA  
(For information contact M. Susan Montgomery, USC, or Janet Fisher Palmquist, UC at Irvine.)
- San Antonio, TX    January, 1976

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DUES ANNOUNCEMENT

Dues for October 1, 1975 to October 1, 1976 are now payable for all members unless they have been previously paid for this period. The dues structure appears on the back page of this Newsletter.

The names of those members whose dues have not been paid by November 15, 1975 will be removed from the Newsletter mailing list. We regret having to do this, but with the high cost of printing and mailing the Newsletter, this is our only recourse. We need and want your support so RENEW YOUR MEMBERSHIP NOW. A membership in AWM makes a good holiday gift!

The Newsletter is now sent by bulk mail in the United States, by first class mail to Canada and Mexico, and by air mail to all other countries. If members receiving the Newsletter by first class or air mail are able to make a contribution toward these postage charges, it would be much appreciated.

ASSOCIATION FOR WOMEN IN MATHEMATICS  
MEMBERSHIP APPLICATION

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Renewal \_\_\_\_\_

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Oct. 1, 1976)

Family \_\_\_\_\_  
(\$6, Oct. 1, 1975-  
Oct. 1, 1976)

Retired or Student \_\_\_\_\_  
(\$2, Oct. 1, 1975-  
Oct. 1, 1976)

Institutional \_\_\_\_\_  
(\$10.00)

Contributions welcome  
and needed.

Institutional affiliation, if any \_\_\_\_\_

Position \_\_\_\_\_

Make checks payable to ASSOCIATION FOR WOMEN IN MATHEMATICS

and mail to Alice T. Schafer  
Department of Mathematics  
Wellesley College  
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Department of Mathematics  
Wellesley College  
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September - October, 1975

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