

# Association for Women in Mathematics

Volume 11, Number 6

NEWSLETTER

November-December 1981

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DUES! DUES! DUES! DUES! You should have received your postcard reminder of your dues by now. Encourage your friends and colleagues to join. DUES! DUES! DUES!

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## PRESIDENT'S REPORT

The Pittsburgh meeting. I enjoyed meeting many of you at Pittsburgh, and the AWM events went well. Jeanne Ferrante (IBM), Rhonda Hughes (Bryn Mawr), Ruth Silverman (West Virginia COGS), and Pat Kenschaft (Montclair State College) participated in a panel discussion on "Women mathematicians in the eighties", and Linda Rothschild was the moderator. The talks of the panelists will be printed in the Newsletter.

The major items at the Executive Committee and Business meetings were as follows. The Executive Committee considered the correspondence in the August issue of the AMS Notices regarding the lack of women speakers. It was decided that we write to the Editor of the Notices and to the U.S. National Committee commenting on our own correspondence with the latter committee. This letter has since been written and appears in this Newsletter. At the Business Meeting a draft of this letter was read to the members. Lee Lorch then moved that we exhort the AMS Council and the Joint Committee on Women to approach and request the National Academy to change the composition of the U.S. National Committee so that it is not restricted to white males, as it is now and has been in the past. The motion was passed unanimously.

Again at the Business Meeting, Rhonda Hughes gave a brief description of the Emmy Noether Symposium that AWM plans to hold at Bryn Mawr (see below). Martha Smith has been participating in discussions at the NSF on how more women can be encouraged to enter scientific fields, and she reported on these discussions. Susan Marchand interviewed several participants at the Math. Olympiad held in Washington, D.C. in July. She reported on her findings, which are published in this Newsletter.

Emmy Noether Symposium. Emmy Noether's birth centenary is in March 1982. [Ed. note: The August issue of *Ms.* contained an article about EN.] AWM plans to hold a Symposium to celebrate this event at Bryn Mawr College on March 18 and 19, 1982. There will be nine one-hour lectures by A. Borel, N. Jacobson, D. Mumford, J. Sally, R. Swan, O. Taussky-Todd, K. Uhlenbeck, M. Vergne, and A. Weil. There will also be a panel on "Emmy Noether at Göttingen, Erlangen and Bryn Mawr", in which the following people will take part: O. Taussky-Todd, M. Lehr, R. McKee, Emiliana Noether, Gottfried Noether, G. Quinn. The AMS will hold its Eastern Sectional Meeting at Bryn Mawr on March 16 and 17, 1982. It is hoped that there will be special sessions at this meeting in areas related to Noether's work; in particular I plan to organize a Special Session on Representation Theory. I hope many of you will plan to attend the Symposium; for further information write to Rhonda Hughes at Bryn Mawr, who chairs the Organizing Committee and

is now working hard on the local arrangements. In case we are able to get some funds for travel grants, we would like to support AWM members who do not have their own travel grants. If you would like to be considered for a travel grant and have no other support, please write to me enclosing your vita and an estimate of your travel expenses, before December 15, 1981.

Cincinnati. It is a pleasure to announce that Julia Robinson will deliver our Emmy Noether Lecture at the Cincinnati meeting, on Friday January 15, 1982. We are especially delighted that this will coincide with her assuming office as President-elect of the American Mathematical Society. Marian Pour-el's write-up about Julia Robinson will appear in the next Newsletter. We plan also to have a panel discussion on the geographic and conceptual contexts within which Emmy Noether did her work, so as to set the stage for the Symposium at Bryn Mawr. The panel will be held on Thursday, January 14, 1982 at 11:15 AM, and the participants so far are Jeanne LaDuke and Uta Merzbach. Jeanne LaDuke (DePaul University) has been studying the pre-World War II history of American Mathematics in collaboration with Judy Green. Uta Merzbach is a Curator in the Mathematics Division of the Smithsonian. The panel will be followed by the Business Meeting.

By now many of us are back to teaching and research in the new academic year and striving to perform well in all the lives that we lead. I wish you all a successful and productive year.

Bhama Srinivasan  
Math. Dept.  
University of Illinois at Chicago Circle  
Chicago, Ill. 60680

#### AWM ELECTION

This year we are voting for President-Elect and for three Members-at-Large of the Executive Committee. Candidates were requested to submit statements in support of their candidacy. The statements that we have received are printed below. In the last Newsletter, some proposed changes to the By-Laws were outlined. Below the actual text of the changes may be found.

AWM receives requests for our mailing list from various deserving sister organizations and institutions. In the past, we have refused to grant such requests. We would like to know if you disapprove of our releasing your name in the future.

The ballot is on the last page of the Newsletter and is due December 1, 1981. Why not vote now, while it's fresh in your mind?

#### Proposed By-Laws changes

Change paragraph of Section 2.1 to read:

A subset of the general membership shall be designated the Council. Members of the Council may be self-nominated or nominated by another member of the Corporation. In either case, a member becomes a Council member by consenting to be one and designating by a Newsletter statement her special interest area. Council members shall initiate projects, organize local meetings, communicate information, or be otherwise especially active in a particular area of concern to the Corporation. Term on Council shall be four years (counting as the first year the year of appointment) with appointment to an additional term upon request by an abbreviated statement to the Clerk. The Clerk shall keep a list of current Council members, their special projects and their terms, and shall notify them of the need of re-appointment in September of the year of term expiration. (Statements are due to the Clerk by December 1.)

Change Sections 4.1 through 4.4 to read:

4.2 Number and Election or Appointment of Officers. The Officers shall consist of the Executive Committee and the Clerk. The Executive Committee shall consist of the President, President-Elect (in even years) or Past President (in odd years), Treasurer, Newsletter Editor, and five At-Large Members. The Officers shall be elected or appointed as follows:

In the fall of years 1981+4n, elections will be held by mail ballot of the general membership for the President-Elect and three At-Large Members; the President shall appoint a Clerk, and the Executive Committee shall appoint a Newsletter Editor.

In the fall of years 1983+4n, elections will be held by mail ballot of the general membership for the President-Elect, Treasurer, and two At-Large Members; the President shall appoint a Clerk and the Executive Committee shall appoint a Newsletter Editor.

The Directors shall automatically appoint the President-Elect to be President immediately following her term of office, and the President to be Past President for the year immediately following her term of office.

4.3 Tenure. The President, the Clerk, and the Newsletter Editor shall hold office for two years commencing with the January 1 immediately following their appointments. The President-Elect shall hold office for one year commencing with the January 1 immediately following her election, and the Past President shall hold office for one year commencing with the January 1 immediately following her appointment. At-Large Members and the Treasurer shall hold office for four years commencing with the January 1 immediately following their election. Each officer shall hold office for the above terms and until her successor is elected and qualified, or until she sooner dies, resigns, is removed, or becomes disqualified. The President, Treasurer, and At-Large Members are not to hold the same office for more than two consecutive terms.

4.4 Nominations.

(a) Nominations shall be made for each elected position by a nominating committee appointed by the Executive Committee, or by petition. Any member of the Corporation may suggest a name for consideration by the nominating committee by submitting the name of the proposed candidate and office to the President before April 1 of the appropriate odd-numbered year. Nominations by petition may be made by submitting a petition bearing 20 signatures in support of the nomination to the President before September 1 of the appropriate odd year.

(b) The Newsletter Editor shall notify the membership of the officers to be elected that year in the March issue of the Newsletter in odd years. The Newsletter Editor shall include the official ballot with the names of candidates proposed by the Executive Committee (through their nominating committee), together with the names proposed by petition, in a fall issue of the Newsletter in odd-numbered years. Each name entered on the ballot may be accompanied by a brief vita supplied by the candidate.

(c) In order to be counted, ballots must reach the Clerk by December 1. The nominee receiving a plurality of votes cast shall be declared elected in the case of the positions of President-Elect and Treasurer; in the case of Members-at-Large, the three candidates with the largest number of votes in years 1981+4n and the two candidates with the largest number of votes in years 1983+4n shall be declared elected by the Directors. Other Candidates shall, with their agreement, become members of the Council.

(d) [No change]

Replace the first sentence of Section 4.10(d)(1) with:

(d)(1) The Executive Committee shall meet at least once annually in conjunction with the Annual Meeting of members at the Joint Mathematics Meeting in January, and generally also at the time of the Summer Mathematics Meetings or otherwise as called by the President. It is a responsibility of Officers to try to attend meetings during their tenure; those who will not be present should notify the President in advance of the meeting. If a majority of the Executive Committee is not present, members having notified the President that they would be absent will be polled concerning actions.

Statements from some of the candidates for AWM offices:

Linda Rothschild

In slightly more than a decade AWM has grown from a small group of women mathematicians concerned with immediate problems to a broad and impressive organization recognized throughout the mathematical community. As a member of AWM from its infancy, I am honored to be nominated for the position of President-Elect. If elected, I intend to continue the excellent projects the association has been engaged in. Also, I would like to appoint committees to study some of the following problems.

1. Women mathematicians are proportionally less involved in research than men. What can AWM do to help women interested in mathematical research? In particular, do women need help with grant application procedures?
2. Conversely, AWM needs more participation by women actively engaged in research.
3. More women, and more young mathematicians, should be involved in journal refereeing and editing.
4. Because of dual career problems many geographically isolated colleges and universities are now experiencing difficulty hiring good people, male or female. Perhaps AWM can help some of these institutions find couples who are both seeking employment.
5. What further can AWM do to encourage high school and college women to take sufficient mathematics courses for maximum career opportunities?
6. How can AWM help women mathematicians in undergraduate colleges keep mathematically current?
7. Are there possible sources of funding from private industry for symposia, grants, or training programs to encourage women to study mathematics and computing?
8. Many young people today know that women were underrepresented among mathematics graduate students and faculty in the past, but are unaware of some of the more blatant examples, such as Princeton's announced policy of excluding women from its graduate program in mathematics until 1967. In the face of a "backlash", AWM must continually educate the mathematical public in the history of women in mathematics.

Joan P. Hutchinson

I have enjoyed working with the AWM and have received a great deal of support from this group. As a Member-at-Large I have worked on a couple of projects and will continue to work on the Committee on Journal Editorships which Bhama successfully started in order to bring pressure on journals to consider (more) women for editorial jobs. But as I think about my work as a Member-at-Large I think about the things which I haven't done or done well enough: I realize that one of the most important functions should be to support and work with the President of the AWM. The presidency is a huge job which needs the active support of the Executive Committee and also that of all AWM members. I believe that as many people as interested should get actively involved with the AWM; this line of reasoning says that new folks should be elected as the Members-at-Large. Well, that's up to you, but there's certainly a lot to be done and lots of people and energy are needed.

Jeanne LaDuke

AWM should continue to adopt a broad definition of its role in promoting women in mathematics. It is now engaged in several activities, such as effective political lobbying, monitoring editorial policies, and initiating programs for high schools, which have increased opportunities for women in mathematics. I think it is also important that we maintain and increase our support for those women who are working part-time or who have interrupted their careers, including as well those returning to college to prepare for careers in mathematically oriented fields. My experience at an urban university where there is a great variety in the backgrounds of both students and faculty has made me very aware of these women's talents and concerns. Active local meetings are an excellent way to keep in touch with mathematics graduate students, with those whose primary concern is mathematics education, with full- and part-time faculty members, with women in non-academic mathematical fields, in fact, with all who both provide and seek the support of women in the mathematical sciences. The AWM has accomplished a great deal, but these times seem to require a special alertness and resolve.

Vera Pless

Women mathematicians have made progress during the past decade. There are invited women speakers, women on various AMS committees, the council, and in AMS positions whereas about ten years ago there were none or next to none of any of these. One area where the advances are the smallest are in academic employment, particularly in prestigious departments. This is unfortunate as these departments set the tone for a number of mathematical disciplines. I think we should maintain our advances and explore means for encouraging the entry of women mathematicians into environments where they are still scarce.

ICM: LETTER TO THE EDITOR OF THE AMS NOTICES

Dear Editor:

The Association for Women in Mathematics has noted the correspondence in the August issue of the Notices regarding women speakers at the ICM. The consensus of the Executive Committee of the AWM, which met at Pittsburgh in August, regarding this matter was as follows.

AWM has previously relayed its concerns on this matter to Professor Lipman Bers, since he chairs the U.S. National Committee for Mathematics. Professor Bers, then, as now, cited his letter to Professor Lennart A.E. Carleson which was in response to the latter's request to the USNCM for suggestions for Fields Medalists, and only incidentally mentioned ICM speakers.

It has not been the position of AWM that any guidance by a National Committee to the Consultative Committee of the ICM contain an exclusive listing of speakers, but rather that our National Committee could make the affirmative effort to seek out women as speakers. Professor Bers has said in his correspondence: "All members of USNCM would be happy if the list of the invited speakers for Warsaw include women, blacks and Hispanics." We feel that at the very least these general sentiments could have been expressed by him to the Consultative Committee via Professor Carleson.

Sincerely yours,  
Bhama Srinivasan, President, AWM

NOTE FROM A MEMBER

Sister Helen Sullivan, OSB, Professor Emeritus, writes:

"..I hasten to send you my account of the meeting of 'American Women who received Ph.D. degrees in mathematics prior to World War II.' This meeting, as you know, was held at the Smithsonian Institution-Division of Mathematics. It was extremely well organized and efficiently handled by Uta C. Merzbach, Curator, and Judy Green and Jeanne LaDuke of the Archives Committee. There were 15 attendees and the exchange of ideas and the sharing of experiences was both delightful and instructive.

"There were three religious sisters present, all graduates of Catholic University of America, which suggests that possibly CU was the only Catholic institution offering doctorates in mathematics to women at that time. However this is merely a conjecture on my part.

"Naturally, I visited the mathematics department at Catholic University while I was in DC and told them of our fine meeting at the Smithsonian. They were extremely interested and there will be a news item concerning this meeting in a forth-coming issue of The Envoy, the University's Alumni publication."

REPORT OF THE TREASURER: August 19, 1981

Accounting for the period June 1, 1980 - May 31, 1981

Balance, June 1, 1980 \$5838.30

Total assets, June 1, 1980 \$5950.18

Note: The figure \$5950.18 represents \$5838.30 in cash-on-hand plus 5 shares of Washington Water Power, valued at \$111.88 as of 5/31/79.

Receipts

Dues - individuals	\$10,087.30
families	820.00
institutions	2,197.40
Advertising fees	920.00
Contributions (1)	824.97
Interest	499.20
Miscellaneous (2)	<u>1,337.05</u>
Total	\$16,685.92

Expenses

Wages and FICA (3)	\$5,077.00
Newsletters (4)	4,233.55
Dues and fees (5)	290.00
Careers Booklet	29.35
Local & national AWM meetings (6)	610.76
Operating expenses (7)	1,172.03
Miscellaneous (8)	<u>2,341.58</u>
Total	\$13,754.27

Balance, May 31, 1981 \$8,769.95

- (1) This covers \$180.00 in data processing credit given to AWM by Wellesley College.
- (2) This includes \$1148.65 received as reimbursement for credit towards supplies and secretarial services to organizations other than AWM.
- (3) Part-time secretary
- (4) Typing, postage and printing for 6 issues
- (5) CBMS, Massachusetts Incorporation Fee
- (6) Honorarium and plane fare for guest speaker at the San Francisco meeting, and entertainment for parties in San Antonio, Ann Arbor, and San Francisco.
- (7) Postage, phone, supplies, duplication
- (8) This covers \$1881.28 for secretarial services to organizations other than AWM, \$31.10 in credit towards supplies for those organizations, and \$390.35 for telephone calls re proposed Emmy Noether Symposium.

Membership Statistics

Our mailing list totals 1000, including 82 institutions in the U.S. plus 52 members in Canada and abroad.

Respectfully submitted,

Donna Beers, Treasurer

## HOUSING AT THE PITTSBURGH MEETING

Many of us know what it's like to stare at the hotel/motel costs in the Notices and to wish we could find a couple of roommates as easily as our male colleagues do. Joanna Mitro would like to do something about this situation. Before the AMS Housing Bureau deadline, send her the following information: arrival/departure dates, hotel preferences, and smoking/non-smoking. She will try to find you a compatible person to share a hotel room. Write to Joanna Mitro, Math. Dept. (Mail location #25), Univ. of Cincinnati, Cincinnati, Ohio 45221 or call her office at (513) 475-4940. As she says, "This should save women who come alone a lot of money, and will help us meet each other!"

## WOMEN IN SCIENCE AND THE NSF

by Mary Gray, American University

There are currently three different NSF appropriation bills floating around Congress --two from the Senate and one from the House. The two Senate bills are the result of a jurisdictional dispute between the subcommittee of the Senate Committee on Labor and Human Resources, which has traditionally exercised oversight over the NSF, and the Committee on Commerce, Science, and Transportation. The Labor and Human Resources version (S.1200) has the most funding for cross-directorate programs, of which women and science is one.

There is unlikely to be much funding available whatever the final version approved. The only remnant of the Women in Science part of the authorization bill we lobbied so hard for last year is a Committee on Women and Minorities in Science. The director of the NSF has publicly committed the Foundation to do a great deal more within its research directorates for women and minorities than is currently being done. As part of the effort to advise NSF officials on how to do this, the subcommittee on women of the authorized committee held an open meeting at the NSF in mid-September. What follows is a brief report on the part of the meeting at which I was present.

The Foundation's biennial report to Congress was thought by members of the Committee to be selective in including information on such things as test performance in such a fashion as to provide grist for the mills of those opposing appropriations for women in science. If the only statistics included could be interpreted to show inferior ability on the part of girls, that would lend credibility to the notion that spending money on the programs would be a waste. For example, it was suggested that if the report writers felt it necessary to include figures showing that girls' math SAT's are worse than boys--thus making it appear that what colleges do is irrelevant since the damage is done--then the statistics showing that mathematics is the least stereotyped undergraduate major, or those showing higher GRE's for women, should be included--to show that there is still plenty of damage done in postgraduate years.

Members of the Committee suggested that the NSF could simply refuse grants to institutions not in conformity with affirmative action requirements. Less dramatic proposals included one that directors of programs send letters to department chairs urging that they in turn encourage their women faculty to apply for grants. Last year the computer science head sent such a letter although the mathematical sciences head refused to do so.

A major problem in some fields is that many institutions do not allow research associates, many of whom are women, to apply for grants in their own names. If principal investigators were required to devote a substantial portion of their time to any grant on which their names appeared, that would eliminate the practice of having many grants under the name of a department chair or senior faculty member. This seems to be a problem in only a very few mathematics departments, where junior faculty are all

included on a grant under the chair's name.

The idea of small grants to support travel and publication costs was also put forward again. Involving more women as reviewers and on NSF advisory committees--other than the ones on women!--also was suggested.

The members of the committee are committed to having the NSF be more active in increasing opportunities for women and girls in science. I suggest that you communicate any ideas which you have to me or directly to Sheila Pfafflin, Bell Labs, the chair of the subcommittee on women.

## HOW I SPEND MY SUMMER VACATIONS

by Susan Landau, Massachusetts Institute of Technology

The first Sunday is always the same: after the picnic by the pond, fifty seventeen year olds (with a smattering of fourteen, fifteen, and sixteen year olds thrown in for good measure) sit listening in the carpeted terraced lecture hall that has no seats. A tall blond man in sandals sits crosslegged on the floor below and tells them the rules of the summer ("No hitchhiking. No hitchhiking alone. No hitchhiking at night."), and the schedule that awaits them (Classes, six days a week, four hours a day. Three hours of problem session five nights a week. In between are hiking, trips to Marlboro and Tanglewood, whatever excursions they can dream up and can find a staff member willing to take them to.). This is Hampshire College Summer Studies in Mathematics, an NSF-sponsored summer institute for high ability high school students, most of whom have completed junior year. David Kelly, professor of math at Hampshire College, has directed the program for ten years.

Classes during the first three weeks are workshops in which proofs, mathematical induction, some elementary number theory, group theory, APL, and whatever else strikes the instructors' fancy are explored. A favorite question with which to begin the first day is: Into how many pieces can seventeen planes in general position slice a large chunk of cheese? Usually someone realizes (after a while) that induction is a reasonable way to tackle the problem; then there are steps backwards and forwards until a pattern is deduced, and a proof reached. Throughout the summer the message is always: Find patterns! Make conjectures! Prove things! The idea is to work together, and the evening problem sessions are set up to encourage the sharing of ideas.

In the second three weeks of the program students pick their maxi and mini courses. Maxi offerings in the past have included: Castles in the Air (Algebraic Number Theory), Building Blocks (A Study of Primes), Crayons (Graph Coloring), Mittens and Shoes (Counting and Combinatorics) and Imaginaries (Complex Variables). Maxis are a three week exploration into advanced topics; group theory might prove the Sylow Theorems and that  $A_5$  is simple; complex variables, the Fundamental Theorem of Algebra (five different ways), power series, integration and some physics. Mini courses are for briefer pursuits and narrower topics; Lobachewskiiian Geometry, Games and Numbers, Paradoxes in Politics (Arrow's Theorem), and Strings, Trees and Languages have been studied in minis of various summers.

The staff of the program is a mixture of university faculty and graduate and undergraduate students. There are usually four or five senior members; the program has had faculty from Princeton, Hampshire, Dartmouth and IBM, among others. Eight to ten advanced undergraduates to beginning graduate students make up the junior staff, and there are always former program participants amongst them. Being a staff member is demanding--one is teaching mathematics anywhere from six to fifteen hours a day, with brief respites for soccer and volleyball. It is also exhilarating--one is surrounded by sixty highly talented and motivated high school students, and over a dozen stimulating and communicating mathematicians.



As of this writing, NSF funding is uncertain. NSF has said that proposals will be accepted in September, but has made no decision regarding the continuance of these education programs. Nevertheless, the expectation is that the program will happen in 1982, and in summers after.

Now for the commercial: The program suffers from a lack of women--students and staff. Women mathematicians are strongly encouraged to stop by, give a clipboard chat or a prime time talk (a fifty minute talk occurring at 5:17 on alternate afternoons). Those interested in serving as staff should contact Kelly, at the School of Natural Sciences and Mathematics, Hampshire College, Amherst, Mass. 01002. Those knowing interested students should have them contact Kelly, in the early spring.

I've spent six summers at Hampshire, and in no other span of time have I learned and shared so much mathematics, or had as much fun. It's an outstanding experience--for those who can handle the time and energy commitment.

### FEMALE PARTICIPATION IN THE 1981 INTERNATIONAL MATHEMATICAL OLYMPIAD

by Susan Gordan Marchand, Kean College of New Jersey

The 1981 International Mathematical Olympiad was held in July in the United States. For several days the contestants were at Rutgers University in New Brunswick, New Jersey, where I was able to speak with many of them.

On arriving at Cook Campus (home to me since I am a Douglass graduate and have remained a Rutgers student over much of the last twenty years), I felt not so much uncomfortable as annoyed when I looked around and as far as the eye could see there was evidence only of HIM--masses of boys and men.

I knew that female participation had been light over the years, and that no girl had ever made the US team, but I was unprepared for just how small a percentage I'd find. There were nine women contestants out of 185, or approximately five percent of the total from twenty-seven countries. Twenty-six countries sent a "leader", a sort of coach of the team. One leader was female. Of twenty-two deputies, one was female.

It wasn't possible for me to speak with the leaders, since they were leaving for Washington to prepare the exam. In most cases the students could do as they wished, so I was able to speak freely with many contestants. I also spoke with one deputy.

My survey was highly unscientific. I spoke with those teams I could find in the dorms or at leisure early in the day and at the disco in the evening. I sought out as many of the girls as possible, and spoke with five. In all I met with twenty-five participants from seven countries and a deputy from an eighth. The teams I saw had members who spoke English or French, and my time limit was six hours.

I told them about my background as a math teacher and of my involvement with WAM (Women and Mathematics), a project sponsored by the MAA (Mathematical Association of America) and with AWM. I asked why they thought there were so few girls involved in the Olympiad. This led to a lively and broad discussion. Only one boy, from Finland, answered quickly and directly - "I think boys just are better at math than girls, that's all." The Austrian deputy felt that the sexes have "a different way of thinking, with girls enrolling in languages and chemistry, but rarely in geometry." Everyone else responded that the reasons are many and complicated.

In a group of three Canadians and three Australians, the opinion was that girls are just not encouraged "along those directions." None of them look down on math-bright girls, though they felt other males might. The Canadians noted that all their high school math teachers are men, in a coed school. There are four classes of math (seemingly honors sections) for which one must make application; not one girl applied. One of the Canadians observed that girls are less spread out in ability. "You just don't find stupid girls. The dumb kids are boys and the brilliant ones are boys." One said that his sister felt she wasn't very good, but with encouragement from their parents, she is now performing okay on competitive exams.

The female contestant from Tunisia reported that her country is changing very fast; similar opportunities now exist for men and women. She said women are striving to show that they are capable. It is interesting to note that her parents are educated. Her mother was an English teacher for many years and her father is the Minister of Finance.

I met with the full Yugoslav team. The young woman was very self-assured and said she'd speak her mind even among her seven colleagues. She said a big problem is always trying to prove that she's as good as the others. Education differs among the provinces in Yugoslavia. In some, students study math for a given number of years; in others they choose to study various topics. Most felt that girls are not as competitive as boys and that the best teachers in their experience are men. Of the students who enroll in math at University, they think two-thirds are women. The faculty, however, is mostly men. None of the contestants planned to specialize in math, though they will enter related areas of electronics and computers. They said that Yugoslav teachers are not well paid.

An insight provided by a US contestant - the biggest difference he notes is that girls are not interested in putting in time outside the classroom, which is very necessary for those who compete. But he feels that girls do perform as well as boys in his classes.

The southern part of Belgium sent four boys. In speaking of the classes they are in and others they know of, they said male-female ratios are in the area of 8-2, 14-0, 11-0, 17-0, 6-1, and 6-4. Slightly more than half their teachers are men.

The Flemish part of Belgium sent three girls and a boy. All three girls were very different from one another. One said her older sister was studying engineering. Although her parents have no knowledge of the nature of an engineering job, they did not object. Her father is a farmer and the mother is at home. This girl intends to pursue engineering, too. Another said she isn't technically inclined. Her parents are both teachers, and her upbringing was typical in that she got dolls while her brother got tools and trains. She said she will not marry young, that she wants a career. The third said she would continue to study, but she wasn't thinking beyond next year. "If I don't get a job, I'll probably marry."

Other teams which each had one girl, and with whom I did not speak, were Colombia, France, Poland, and Venezuela.

Let's take a look at how the nine girls performed compared with the other members of their teams. On the five full teams each of which had one girl and seven boys, the girls scored first, second, tie for third, seventh and eighth. These top scores were good ones, but the bottom ones were very poor. 1 and 8 were South American, 2 and 7 were from Eastern Europe, and 3 was from the West. On a team which had one male and one female the girl did slightly better. The team which had three girls was complicated by the fact that it really was two distinct teams of four. So consider those girls three out of four. One girl came in first, with the other three participants obtaining a tie score. All these scores, however, were extremely low.

Some observations stated earlier may help us understand why more girls don't participate. But there are several reasons why we can't draw valid conclusions from this sparse performance information on those who do participate.

There is no standard by which students are chosen to represent a country. In the USA as well as in South Belgium, Canada, Yugoslavia and perhaps many others, contestants are chosen by their performance on tests at various levels. In the USA there's a statewide test followed by a national test. In Yugoslavia there are many more levels, starting with the school, district, province, and national, which provides much experience in test-taking. The Tunisian students were phoned by a teacher and asked if they'd like to go to the US. It was a great trip, the sidelight of which was a math contest! This was the first year of participation for the Flemish Belgians, and as I understand it, selection was on the basis of a written test, administered by mail and therefore lacking controls. Next year there will be a country-wide controlled competition.

Training differs drastically for those who do participate. Our team works for three weeks in a disciplined manner at a military academy. Several participants from other countries told me they had received no special training once chosen; others had as little as two hours.

I'd like to suggest some interesting experiments:

1. Use a TV blurb advertising the high school math contest so that it would be open to all students; perhaps it could be given at centers along with college boards. Maybe some parents would encourage their daughters to enter. Currently, students enter only if their high school participates.
2. Train the top ten girls in the country even if their scores fall below the boys' on the national test. Perhaps after training, a test to field the top eight would produce a female participant.
3. In order to assess the effect of training immediately prior to the Olympiad, the US could propose to include any participant who wishes, regardless of country of origin, in our training program. Then we could see if the vast differences remain among countries which have not in the past provided much training for their students.

### CAUCUS FOR WOMEN IN STATISTICS

by Nancy L. Geller, Memorial Sloan-Kettering Cancer Center

The purpose of this article is to introduce the Caucus to AWM members because we are sister organizations with many common goals. The Caucus for Women in Statistics is an independent organization informally associated with the American Statistical Association. "The Caucus" may be thought of as the statistics analogue to the AWM. However, the Caucus is much smaller, having about 200 members. Caucus members work for the government, some for corporations, such as Bell Labs, and, of course, some for universities. Some Caucus members (such as I) identify themselves as mathematicians and so are AWM members as well. An article about the AWM will also appear in the Caucus' newsletter.

The Caucus has an official purpose: "...to support the aims of the American Statistical Association of fostering opportunity for the education, employment and advancement of women in statistics, and of recruiting women into the field of statistics. The Caucus strives for the elimination of sex discrimination and improvement of the status of professional women in general and female statisticians in particular. The Caucus encourages the use of statistical methods and research in the publication of reports and surveys about sex discrimination. The Caucus fosters increased participation of women in professional meetings and publications and on governing boards of professional societies."

Towards these aims, the Caucus publishes a quarterly newsletter which is sent to all members. The annual business meeting is held at the American Statistical Association's annual meeting. Local meetings are also held during the year. In addition, some social event is planned for the annual meeting. This year was the 10th anniversary birthday party. Last year an all-day film festival covering educational, psychological, sociological, and economic aspects of women having technical careers was held. In previous years there has been an evening of round table discussions with each table having a theme such as "Women as Statistical Consultants" and "Combining Career and Family." All of these have been very well attended.

For the past several years the Caucus has sponsored a session of technical papers on various aspects of statistics of women. This year's session, "We Work Hard, But Who's Complaining", presented three papers: "Women at Work in the Home" by Martin Murphy and Janice Peskin of the Bureau of Economic Analysis, U.S. Department of Commerce; "The Treatment of Women in the Social Security System" by Nancy Gordon, Congressional Budget Office, and "Women Statisticians--A Profile from the A.S.A. Survey" by Richard Taeuber, Washington, D.C. and Eileen Boardman, Colorado State University. The social events and technical sessions have been jointly sponsored by the American Statistical Association's Committee on Women in Statistics, with whom the Caucus has always worked cooperatively.

Much of the Caucus' activity involves "networking": introducing women to other statisticians at meetings in order to help in women's professional advancement. We are also sensitive to how difficult it is for statisticians (often young and often female) to come to meetings knowing few others. An advantage of smallness is that most of us know each other, and annual meetings become reunions of old friends.

The 1981 president of the Caucus is Beatrice N. Vaccara, Director, Bureau of Industrial Economics, United States Department of Commerce, and the 1982 president will be Eileen Boardman, Statistics Department, Colorado State University. Membership is on a calendar year basis with annual dues of \$6 per year, student dues of \$3 per year and dues for a couple of \$7 per year. You are cordially invited to join the Caucus for Women in Statistics by sending your name, address, and dues to Dr. Richard C. Taeuber (treasurer), 3100 Connecticut Ave. #225, Washington, D.C., 20008.

#### LETTER FROM NSF

I am writing to tell you about several items of interest that have recently happened here at the National Science Foundation.

First there is the very sad news that John R. Pasta, recently retired as Division Director, Division of Mathematical and Computer Sciences, died on June 5 after a long illness. John was a strong supporter of the mathematical sciences and he will be greatly missed, both professionally and personally.

Professor Ettore F. Infante of Brown University has been appointed as the new Division Director of the Division of Mathematical and Computer Sciences.

As you probably know, the National Science Board has approved awards for research institutes at the University of Minnesota and at the University of California, Berkeley. These awards are part of a more comprehensive plan for augmenting the standard scientific research project grants made by the Section. In the near future, I plan an article describing the entire review and evaluation process of what has come to be called either alternative modes or coherent modes of support and I hope to give that article wide circulation. The article will contain a brief history of the process, those parts of the reports of the evaluation panels that do not refer to specific proposals, and names of panelists (see the August 1981 Notices, p. 427, for names of members of the Coherent Modes panel).

In the fiscal year starting October 1 (FY 1982), we plan to increase our support for computer equipment necessary for research and we are currently preparing an announcement of this increase. As the announcement will emphasize, the intent here is to make moderate grants for acquiring computing equipment by groups of researchers of outstanding quality and high productivity whose work has been seriously impeded by the lack of computing facilities. The announcement will put a lower limit of \$15,000 on requests but this of course will not preclude requests for smaller amounts on ordinary research proposals. [Ed. note: Proposals' target date is December 1, 1981. Questions should be directed to Dr. Alvin I. Thaler, Acting Program Director for Special Projects, Mathematical Sciences Section, Room 304, National Science Foundation, Washington, DC 20550. (202) 357-9764.]

We will be supporting travel to the International Congress of Mathematicians in Warsaw next August. A grant has been made to the American Mathematical Society and preliminary notices have already appeared in several publications. I will not list all the details here but will point out that we will not augment ordinary research awards for travel to Warsaw. The application form will be printed in the October Notices and will not be available from the Section. [Ed. note: Application forms are also available from: AMS/NSF International Travel Program, P.O. Box 6248, Providence, RI 02940. Deadline for receipt of applications is November 20, 1981.]

Let me also make the obvious observation that the Section continues to encourage the receipt of research proposals from women and minorities. We do not have a sheltered program for women and minorities nor is any special consideration given to a proposal

because the investigator is a woman or a member of a minority, but women and minority members do compete well when they do apply.

The only personnel change in the Section for the coming year is in the Statistics and Probability program. David S. Moore has returned to Purdue University and has been replaced by Farroll T. Wright from the University of Missouri at Rolla. The academic 1981-1982 lineup will be: Classical Analysis-John V. Ryff; Modern Analysis-Neal J. Rothman; Topology, Geometry, and Foundations-Ralph M. Krause; Algebra and Number Theory-Judith S. Sunley; Applied Mathematics-James M. Greenberg; Statistics and Probability-Farroll T. Wright; Special Projects-Alvin I. Thaler; Phone-(202) 357-9764. Head-William G. Rosen; Phone-(202) 357-7341.

Our Advisory Subcommittee will be augmented by the following four people, whose terms will end in the spring of 1984: William Browder, Princeton University; Donald L. Burkholder, University of Illinois; Phillip A. Griffiths, Harvard University; Daniel J. Kleitman, Massachusetts Institute of Technology. They join the following: terms ending spring 1982--Daniel Gorenstein, Rutgers University; Yiannis N. Moschovakis, University of California (L.A.); William A. Veech, Rice University; Grace G. Wahba, University of Wisconsin; terms ending spring 1983--James G. Glimm, Rockefeller University; Herbert B. Keller, California Institute of Technology; Jerrold E. Marsden, University of California (Berkeley); Hugh L. Montgomery, University of Michigan; Martha K. Smith, University of Texas.

The announcement for the Fiscal Year 1982 Mathematical Sciences Postdoctoral Research Fellowship program will be sent out shortly. On the advice of several advisory groups, the program has been changed this year to include a research instructorship option. [Ed. note: For announcement and application forms, write Mathematical Sciences Postdoctoral Research Fellowships, Mathematical Sciences Section, NSF, Washington, DC 20550. Applications are due December 11, 1981.]

I hope that you find this information useful. The Section will continue to send out such letters in the future, as the occasion warrants.

Sincerely yours, William G. Rosen, Head, Mathematical Sciences Section

#### BUNTING INSTITUTE AWARDS

Congratulations to Judith D. Sally, who has recently been appointed a Bunting Institute Fellow. Her field is commutative algebra. The project on which she will be working while she is on leave from Northwestern University is "Hilbert Functions of Local Rings."

A painter, a microbiologist, and an Afro-American folklorist are among the 24 other scholars and artists from the United States and Canada who have received appointments at the Mary Ingraham Bunting Institute of Radcliffe College. The fellowships, which began July 1, 1981, were announced by Radcliffe College President Matina S. Horner and Acting Director of the Institute Mary B. Anderson. Candidates were selected from more than 360 applicants on the basis of their projects' significance to their fields and to their own careers.

The Bunting Institute is one of the four largest centers in the country awarding postdoctoral fellowships and the only one primarily for women. Fellowships enable recipients to pursue their scholarly and artistic projects in a multidisciplinary community of women. Each Fellow has a private study or studio at the Institute and access to all Radcliffe College and Harvard University resources. Science Scholars are affiliated also with major laboratories at research universities and institutes.

Ten Bunting Fellows will be supported by Radcliffe College funds; one Bunting Fellow by an individual award from the National Endowment for the Humanities; four Educational Research Fellows by the National Institute of Education; four Faculty Fellows by a grant from the Carnegie Corporation of New York; and six Science Scholars by grants from the Office of Naval Research and the General Electric Foundation.

Nine of the appointees are working in the humanities, five in the social sciences, four in the creative arts, and seven in mathematics or the physical sciences. One is an independent practicing artist, and the others are affiliated with 21 different institutions, including the Marine Biological Laboratory in Woods Hole, the New England Conservatory of Music, and the Smithsonian Institution.

Selection committees included faculty members and administrators from Boston University, Emmanuel College, Harvard University, the University of Massachusetts-Boston, Massachusetts College of Art, Massachusetts Institute of Technology, and Tufts University.

#### ETHICS AND VALUES IN SCIENCE AND TECHNOLOGY

NSF and NEH announce the availability of guidelines to apply for Interdisciplinary Incentive Awards and Sustained Development Awards, administered by NSF's Ethics and Values in Science and Technology (EVIST) program. The objective of these individual awards is to develop a greater capacity to analyze issues in the field of ethics and values in science and technology. Closing date for the submission of applications is Feb. 1, 1982. Awards will be announced in June, 1982. Brochures on the two programs may be ordered from Publications, NSF, Washington, DC 20550. Ask for SE81-62A, Interdisciplinary Incentive Awards; or SE81-62B, Sustained Development Awards. The next closing date for preliminary proposals to EVIST for research projects is January 1, 1982. Guidelines for this purpose are also available from Publications; ask for SE80-62. For further information, contact Dr. Rachelle Hollander, EVIST, NSF, Washington, DC 20550 (202) 357-7552.

#### WOMEN'S COLLEGE COALITION STUDY

Results of a study released in April by the Women's College Coalition (Suite 1003, 1725 K St., N.W., Wash., D.C. 20006) in Washington suggest that women's colleges may be far more transformed by their central commitment to women than had previously been supposed.

The study, exploring several aspects of the women's college learning environment, was conducted by the Coalition with support from the Ford Foundation. It involved two separate surveys, one of women's college presidents and the other of full-time teaching faculty. Both surveys probed the mission of the women's college, the workings of the academic reward system, the presence of women throughout institutional life, the curriculum and its recognition of women, and faculty attitudes toward a variety of teaching and social goals.

The report, released at a national conference of women's college presidents sponsored by the Coalition, outlined a number of key findings:

- \* Women's college presidents and their faculties clearly interpret the mission of their colleges as an equity mission--and, when asked to describe that mission, tend to cite such educational goals as providing a supportive atmosphere for women, encouraging women to take leadership roles, developing self-confidence and self-respect in women, and fighting stereotypes.
- \* Women are present in significant proportions throughout the power, reward, and prestige systems of women's colleges--accounting, for example, for 61% of undergraduate headcount faculty, 51% of tenured faculty, 48% of board members, 71% of all presidents, and more than 50% of all distinguished lecturers, honorary degree recipients, and commencement speakers over the last five years in those colleges responding to the survey.

- \* Presidents are virtually unanimous in perceiving it to be the responsibility of women's colleges to recognize the contributions and concerns of women in the college curriculum, and have, in recent years, presided over major curricular changes aimed both at meeting women's expanding professional aspirations and recognizing women's full contributions to and perspectives on intellectual life.
- \* Women's college faculty, of both sexes, are significantly involved in activities directed toward the full curricular recognition of women--such that, for example, 84% of responding faculty report adding material to their course syllabi over the past year to recognize the contributions and concerns of women, and 78% report discussing with colleagues and students the representation of women in materials related to their disciplines.
- \* Women's college faculty, of both sexes, attach significant personal value to "feminist" teaching goals--such that more than 65% of all men and women faculty in the survey indicate it to be an essential or very important goal of their teaching to develop ambition and assertiveness in women students, and to counteract the traditional role expectations of women.

"Women's colleges have sometimes been thought of as institutions that happened to admit women only," said Dr. Martha Church, president of Hood College and Chair of the Coalition's data collection project, in announcing the findings. "What this study suggests is that something profoundly different from 'happening to admit women' is occurring at these colleges--something that encourages the kinds of outcomes that other researchers have observed to be associated with attendance at a women's college: aspiration, achievement, persistence to graduate school, verbal aggressiveness, leadership, and intellectual self-esteem," she added.

The study findings will be reported out as part of the agenda of a conference the Women's College Coalition has called to assess the continuing role of the women's colleges in light of the major changes today facing the higher education community and the community of those involved in women's issues. In other conference activities, women's college presidents will take their priority lists for action in higher education and women's affairs to representatives of both President Reagan's White House staff and the Presidential Task Force on Regulatory Relief.

For further information about the Study of Learning Environments, contact the Women's College Coalition to obtain a copy of the full report.

#### ON CAMPUS WITH WOMEN

reprinted from the publication of the same name of The Project on the Status and Education of Women, Association of American Colleges, 1818 R St., Wash., DC, 20009, Spring 1981 issue

#### Harvard Graduate Degrees Not Worth As Much for Women

Seven years after receiving graduate degrees from Harvard University, women had lower salaries and fewer professional responsibilities than the men with whom they graduated. Seven graduate schools were surveyed. Among the findings:

- \* Of those graduating from the Graduate School of Arts and Sciences (GSAS), 40 percent of the men and 38 percent of the women were on a tenure track on their first job; seven years following graduation, in 1979, 11 percent more men than women held full-time faculty status.
- \* Among law school graduates employed in private business, 25 percent of the men but only one percent of the women were partners in law firms.
- \* In both government and private business, male GSAS graduates earned a higher average salary than female graduates, with salaries significantly higher for males in the business sector.

- \* Unemployment claimed 17 percent of the female but only 9 percent of the male graduates of the School of Education, 12 percent of the female and only 3 percent of the male graduates of GSAS.
  - \* Of the 13 School of Education graduates who were headmasters or principals, 10 were men; all 6 graduates holding superintendent positions were male, and the one president of an educational institution was male. Average salaries of School of Education graduates were \$26,150 for men, \$18,700 for women.
  - \* Male graduates from all 7 schools were more likely than women to have children; however, women spent a greater proportion of time than men on children and household tasks.
- The report appears in the January 1981 issues of Second Century: Radcliffe News, published by Radcliffe College.

#### Encouraging Women and Girls in Mathematics

Use Equals to Promote the Participation of Women in Mathematics, a handbook describing the EQUALS Teacher Education program at the University of California, Berkeley, is designed to prevent and end "math avoidance" among young women by promoting sex-fair mathematics instruction and counseling. Its ultimate goal is to bring about change in the occupational patterns of working women. Providing methods and materials for use by educators at the elementary and secondary levels, as well as in preservice courses, the 134-page booklet also includes various resources and an annotated bibliography on problem-solving in mathematics as well as one on sex-fair counseling and instruction. Sections include: how to increase awareness of sex differences in young people's education and subsequent career choices; how to encourage career awareness; and how to involve educators, parents and the community. Many of the materials can be used with college students. Educators should find the materials useful in work with students, in designing inservice workshops, and in teacher-training programs.

The handbook may be ordered at \$5 per copy, with check made payable to The Regents, University of California, and sent to EQUALS, Lawrence Hall of Science, University of California, Berkeley, CA 94720.

#### Finnish Girls: Smarter than Boys?

A telling joke currently making the rounds in Finland goes like this: If you can't find a boy with a lower education, well you'll just have to take a highly educated university woman." Implications? Women in Finland are swiftly becoming the educated sex, now constituting 62 percent of students in the gymnasium (Finnish equivalent of high school), the only route to a university education. The current percentage marks a 4 percent increase from 1979 statistics. The reason given: women are smarter.

"It is a real problem for us," laments Minister of Education Per Stenback. "The proportion is growing in an alarming direction. If you believe in equal distribution, well, it is against our principles. Entrance is based on test scores, and boys tend to be afraid of languages and even of mathematics, while girls are not nervous about those subjects. The schools are just too demanding for the boys. They are too theoretical. The boys would like something more practical."

Discussion of the phenomenon centers on the fact that there are so few boys, rather than on discrimination against women. Apparently, there is little resentment among Finnish men at the women's intellectual take-over. Elina Haavio-Mannila of Helsinki University explains, "Because, still, only the very best women get ahead. And then only because of their merits, for we have no affirmative action. So there is not the least public male resentment. But...there is resentment among women in the public sector, because even the lower-grade jobs still go to men."



## SCIENCE FOR THE PEOPLE

Science for the People is published bi-monthly by the Science Resource Center, Inc., a non-profit corporation. For a flyer about articles related to women's issues, write Science for the People, 897 Main St., Cambridge, MA 02139. The current issue (Sept./Oct. 1981) is subtitled "Science and the Attack on Women". The feature articles are "Girls, Boys, and Math", "Tampons: Looking Beyond Toxic Shock" and "Women Empowering Women". I haven't had time to do more than skim the articles, but they appear to be interesting, informative, and well-written.

## OF POSSIBLE INTEREST

The address of Reentry newsletter was inadvertently omitted two issues ago. Write: E. Graber, Editor, Polytechnic Institute of New York, 333 Jay St., Brooklyn, NY 11201.

Family Issues and Women Studies: Sage Publications, 275 South Beverly Drive, Beverly Hills, CA 90212.

The Barnard College Internship Program has many bright young women who seek internships in a wide variety of fields. More sponsors are needed. For additional information write: Office of Career Services, Barnard College, 606 West 120th St., NY, NY 10027.

DEADLINES: Nov. 23 for Jan.-Feb., Jan. 22 for Mar.-Apr., Mar. 24 for May-June

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.

California State University, Long Beach. Dept. of Mathematics, 1250 Bellflower Blvd, Long Beach, CA 90840. Tenure track position, rank open, beginning Fall, 1982. Ph.D. in Comp. Sci & interest in teaching in growing comp. sci. program. Specializations in comp. sci., applied algebra or numerical analysis preferred. Evidence of excellent teaching & strong research potential. Salary \$19,932-\$36,540 depending on qualifications. By 12/1/81 send resume, 3 letters of reference & transcripts to Dr. Gittleman, Chair.

Loyola Marymount University. Dept. of Mathematics. One tenure track & one visiting asst. professorship expected Fall 1982. Required: Ph.D. & willingness to teach a variety of courses. Dept. offers broad undergraduate math curriculum & a small master's program in applied math. Teaching load: 12 hrs. per semester. Send resume & 3 letters of recommendation to M. R. Cullen, Math Dept., Loyola Marymount Univ, Los Angeles, CA 90045.

Fairfield University. Full time, tenure track position in math & comp. sci., 9/1/82. Rank & salary commensurate with experience & credentials. Prefer Ph.D. in math or comp. sci. Fairfield has recently approved a Comp. Sci. Concentration & installed a DEC SYSTEM-2060 with GIGI color graphic terminal. By 3/1/82 please send vita & 3 letters of recommendation to George Lang, Chair, Dept. of Math, Fairfield Univ., Fairfield, CT 06430.

University of Connecticut. Dept. of Mathematics. Asst Professorship/Southeastern Campus. Salary negotiable. Duties: to teach elementary & intermediate math & conduct research in field of competence. Required: Ph.D. in math & some teaching experience; some knowledge of comp. sci. Reply to Eugene Spiegel at U-9 Univ. of CT, Storrs, CT 06268.

University of Florida. Dept. of Mathematics. Two tenure track asst. professorships 8/1982. Required: research potential in probability & stochastic processes, numerical analysis, partial differential equations, linear algebra, combinatorics, logic. Salary \$18,000 - \$22,000. By 1/25/82 send resume, list of publications & have 3 letters of reference sent to Mark L. Teply, Chmn, Search & Screen Committee, Dept. of Math, Univ of FL, Gainesville, FL 32611.

University of Hawaii. Dept. of Mathematics. Asst. professorship in research-oriented math dept. Ph.D. & evidence of research potential required. Send vita & 3 references to Prof. Tom S. Pitcher, Chmn., Dept of Math, Univ of Hawaii at Manoa, 2565 The Mall - Keller 401A, Honolulu, HI 96822.

University of Illinois, Chicago Circle. Dept. of Mathematics, Box 4348, Chicago, IL 60680. Possible positions contingent on budgetary allocations. Required: excellent research record & ability to direct graduate students. Salary & rank commensurate with qualifications. Prefer applicants with postdoctoral experience seeking tenure track position. Send resume & have 3 letters of reference sent to Louise Hay, Head. Possible visiting positions for one or more quarters. Send resume, letter indicating desired time period & arrange for 2 letters of reference & a letter of support from a Dept. member at UICC.

Purdue University. Dept. of Mathematics, West Lafayette, IN 47907. M.S. Baouendi, Head.  
(1) Several regular or research asst professorships 8/1982. Exceptional research promise & excellence in teaching required. Send resume & 3 letters of recommendation. (2) One or two senior positions in applied math (prof/assoc. prof with tenure). Salary competitive & negotiable. Excellent research credentials are required. Positions available for academic year 82-83. Please apply early. (3) Possible Assoc. Professorship 8/1982. Excellent research credentials required. Send resume & 3 letters of recommendation.

University of Iowa, Dept. of Math, Iowa City, IA 52242. Robert H. Oehmke, Chmn.

(1) Visiting positions at all levels. Selections will be based on evidence of effective teaching & research achievements & potential, instructional needs of Dept & potential for interaction with faculty at research level.

By 2/15/82 send application, vita & 3 letters of recommendation to R.H.Oehmke.

(2) Tenure track positions at junior level. Selections based on evidence of effective teaching & research achievements & potential, instructional needs of Dept. & potential for interaction with faculty at research level.

By 2/15/82 send application, vita & 3 letters of recommendation to R.H.Oehmke.

Kansas State University. Dept. of Mathematics. Asst professorship 8/15/82. Salary

\$22,000 - \$24,000 for 9 mo. appt. Required: demonstrated research ability in applied math. Specially interested in candidates in fields of linear and non-linear wave propagation, theoretical hydrodynamics, or partial differential equations. Commitment to excellence in teaching is expected. Ph.D. in math or equivalent required. Contact Head, Dept. of Math, KS State Univ, Manhattan, KS 66506 by 2/15/82. (Tel: (913) 532-6750.)

University of Louisville. Dept. of Mathematics. Entry level, tenure track position

Fall, 1982. Required: Ph.D. in math or related area, research promise & evidence of good teaching. Duties: teaching geometry. By 1/15/82 send application, 3 letters of recommendation & graduate transcripts to Michael S. Jacobson, Dept. of Math, Univ. of Louisville, Louisville, KY 40292.

Smith College. Dept. of Mathematics, Clark Science Center, Northampton, MA 01063.

Two year Asst Professorship 9/1982. Current minimum salary \$18,500. Required: strong evidence of dedication to teaching & significant scholarship. By 2/1/82 send resume & 3 letters of recommendation to Marjorie Senechal, Chair.

Wellesley College. Dept. of Mathematics, Wellesley, MA 02181. Possible 1 or 2 year

position for recent Ph.D. in math of any age beginning Sept., 1982. Asst. Professorship with salary at least \$20,600 & teaching load approx. 8 hrs. per week. Strong interest in teaching & research required. Contact Chair, Dept. of Math.

Michigan State University. Dept. of Mathematics, E. Lansing, MI 48824.

(1) Openings at Asst. Prof. level (full time tenure track) beginning 9/1/82.

Required: Ph.D. in math, excellence in research & teaching. By 1/1/82 send resume & have 3 letters of recommendation sent to Prof. J.E.Adney, Chmn.,

Dept. of Math. (2) Two postdoctoral fellowships in math. Appt. for 1 year, renewable for 2nd year subject to availability of funds. Duties: teach 1 course each term with remaining time for research. These fellowships are normally offered to persons (regardless of age) who have had their doctorate less than 2 years. By 1/1/82 send resume & have 3 letters of recommendation sent to J.E.Adney, Chmn., Dept. of Math.

Wayne State University. Dept. of Mathematics, Detroit, MI 48209. B.J. Eisenstadt,

Chmn. Several tenure track positions starting Fall, 1982. Required: Ph.D., excellence in research and teaching. Salary & rank to be negotiated. Send resume & have 3 letters of reference sent to the Chairman.

Michigan Technological University. Dept. of Mathematics & Computer Science, Houghton, MI 49931. About 5 tenure track positions in applicable mathematics (e.g. probability, fluid mechanics, ODE, PDE, functional analysis, calculus of variations, control theory etc.) statistics, differential geometry, numerical analysis & comp. sci. Asst. or Assoc. Profs preferred. Excellent teaching & research required. Some visiting positions available. To apply write Dr. Richard Millman, Head.

Missouri Western State College. Math Science Dept. Salary & rank dependent upon degree, experience & qualifications. Prefer M.S. in Comp. Sci., Info. Sci. or Math with emphasis on Comp. Sci. Send application, resume & 3 letters of recommendation to Mr. Ken Johnson, Math Sci. Dept., MO Western State College, St. Joseph, MO 64507.

Northeast Missouri State University. Division of Mathematics. Opening for Head of Division; will lead faculty in curriculum development, instructional improvement & program evaluation; will recruit & evaluate Divisional faculty. Will report directly to chief academic head of Univ. Required: Ph.D. in Math or Comp Sci, well established research & scholarship. Salary: Minimum of \$30,000 with excellent benefits. By 2/1/82 send undergraduate & graduate transcripts, placement papers/resume & application to Chmn., Search & Screen Committee, Division of Math, Northeast MO St. Univ., Kirksville, MO 63501.

Rutgers State University. Statistics Dept., Hill Center, New Brunswick, N.J. 08903. Dr. Joseph I. Naus, Acting Chmn. Professorship starting Fall, 1982. Required: Ph.D. in Statistics; teaching graduate & undergraduate courses in Stat. & research in Stat; record of distinguished scholarship. Send resume to Chmn.

New Mexico State University. Dept. of Math Sciences, Las Cruces, N.M. 88003. Carol L. Walker, Head. Visiting positions & tenure track asst. professorship in math, numerical analysis or statistics starting 8/23/82. Salary \$18,000 or higher depending on rank, qualifications & experience. Required: Ph.D. & strong commitment to teaching & research. Send vita & have 4 letters of reference sent to Head.

Rensselaer Polytechnic Institute. Dept. of Math Sciences, Troy, N.Y. 12181. Robert E. O'Malley, Jr., Chmn. Tenure track openings at all levels starting Sept., 1982. Required for junior-level appts: Ph.D., strong research potential in applied math or comp sci. For senior level appts: Ph.D. & demonstrated outstanding record in applied math or comp sci. Teaching 6 to 7 hours/week per semester. Contact Chmn.

University of North Carolina at Chapel Hill. Dept. of Mathematics, Chapel Hill, N.C. 27514. Two year appt as lecturer starting 8/1982. Required: Ph.D. & research program in modern complex analysis. It is anticipated Dept. will conduct special year of research in modern complex analysis with distinguished visitors during 83-84. Send application, vita, abstract of current research & 3 letters of reference to Chmn, Math Dept.

Ohio State University. Regional Campuses. Dept. of Math. Several faculty positions at regional campuses of Lima, Mansfield, Marion & Newark. Required: excellent teaching & continuing interest in research leading to publications. Apply to Prof. John Riner, Vice Chmn., Dept. of Math, Ohio State University, Columbus, OH 43210.

Ohio State University. Department of Mathematics. Several positions at all ranks from instructor to full prof. starting Fall, 1982. Interested in candidates in areas of applied and pure math. For tenure track positions we expect exceptional research promise & evidence of good teaching ability. By 1/15/82 send application, resume, & have letters of recommendation sent to Prof. Dijen K. Ray-Chaudhuri, Dept. of Math, OH St. Univ., 231 W. 18th Ave., Columbus, OH 43210.

Gettysburg College. Dept. of Mathematics. Gettysburg, PA 17325. Dr. L. I. Holder, Chmn. Tenure track position starting 9/1982. Required: Ph.D. or be near completion. Background in comp sci desirable. No specific area of specialization is stipulated, but a commitment to undergraduate teaching is essential. 4-1-4 calendar, 3-1-3 teaching load. By 2/15/82 send resume & have 3 reference letters sent to Chmn.

Temple University. Dept. of Statistics, Philadelphia, PA 19122. Dr. William W.S. Wei, Recruiting Committee Chmn. Tenure track & visiting faculty positions for fall, 1982. Required: Ph.D., strength & interest in research & teaching. Prefer specialty in multivariate analysis, biostatistics, operations research or business statistics. Send resume & 3 references to Recruiting Committee Chmn.

Texas A&M University. Dept. of Mathematics, College Station, TX 77843. Prof. H. E. Lacey, Head. Several openings at all levels for 82/83. Research & teaching important. All areas are considered. Send vita, 3 letters of recommendation, reprints & preprints to Head.

University of Texas at Austin. Dept. of Mathematics, Austin, TX 78712. Two tenure track asst professorships & 4 terminal instructorships for Fall, 1982. Candidates for asst professorships should normally be 2 or 3 years past the Ph.D. with strong research records. Instructor candidates should be recent Ph.D.'s in areas in which Dept. has active research. Send inquiries to Martha K. Smith, Recruiting Committee.

University of Utah. Dept. of Mathematics, Salt Lake City, UT 84112. (1) 3 or 4 three year instructorships for 81 or 82 Ph.D.'s. Selection made on basis of ability & potential in teaching & research. Salary \$20,000. Teach 2 courses through academic year. (2) One visiting position dependent on teaching ability & potential contribution to our research environment. (3) Possible 1 or 2 permanent senior positions. Essential criterion will be level of research activity in areas which complement but do not overlap with, existing areas of research. By 2/1/82 send vita, bibliography & references to Ms Sylvia Morris, Committee on Staffing.

Vanderbilt University. Dept. of Mathematics, Nashville, TN 37235. Professor R. R. Goldberg, Chmn. (1) Tenured position. Impressive research accomplishments & evidence of effective teaching required. Should have specialization in some area of classical analysis or applied mathematics. Have vita & 4 letters of recommendation sent to Chmn. (2) Tenure track asst professorship of statistics. Initial 3 year appt. Required: strong commitment to research & undergraduate teaching. Consulting opportunity a possibility. Have vita & 3 letters of recommendation send to Chmn.

ASSOCIATION FOR WOMEN IN MATHEMATICS  
MEMBERSHIP APPLICATION

The AWM membership year is October 1 to  
October 1.

Name and  
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