Fila

Association for Women in Mathematics

Volume 13, Number 3 NEWSLETTER May-June 1983

* *

PRESIDENT'S REPORT

One of the current priorities of AWM is to encourage more women to become active in mathematical research. Many women mathematicians (and men as well) know little about the process and prospects involved in applying for research grants. It was suggested by a meeting of the AWM group in Boston (and reported in the last Newsletter) that AWM sponsor a panel discussion dealing with grant proposals and a workshop where people can bring drafts of grant proposals and see copies of successful proposals. The need is clear: while the percentage of women among research grant recipients is increasing, it is still very small. Since this small percentage is an inevitable result of the fact that there is only a small percentage of women among applicants, we feel that more women should be encouraged to apply.

In view of this, I am organizing a panel and workshop on grants, to be held at the summer AMS meeting in Albany. Although the panel will deal mainly with NSF grants for research, there will also be a discussion of possible sources of funding for other projects. In addition, I hope to have people talk about other research opportunities such as visiting the Institute for Advanced Study or one of the other institutes, or attending short research conferences. Besides the "official" information which will be exchanged, we expect a lively discussion on a wide range of questions. Is it better to apply for a grant by yourself or with someone else? If you are turned down one year are you likely to be turned down the next? Can you invite yourself to a conference if the organizers fail to do so? The workshop, which is being planned for the afternoon of the day of the panel, will be informal.

Another research-related issue on which AWM might plan an "information exchange" is that of publishing mathematical results. Many younger mathematicians do not know enough about how to decide whether a result is worth publishing, how to write it up, where to submit it, and what to do if it is rejected. I would appreciate receiving any suggestions for the format of a program or panel dealing with publishing. Also, ideas for programs dealing with other aspects of research would be very welcome. AWM is still small enough to listen to its members!

Encouraging women mathematicians in their research is only one of several issues which are high on AWM's list of concerns. I hope to discuss others in future Newsletters.

Linda Rothschild
Department of Math
University of Wisconsin
Madison, WI 53711

AWM SPEAKERS' BUREAU

by Judy Wason

The AWM Speakers' Bureau is now fully operational. Booklets listing our offerings have been sent to high schools and colleges in the vicinity of each of our speakers, and funds are available for financial assistance.

If your school wishes to sponsor a speaker, and you have not received a brochure, please request one from the Wellesley office.

If you wish to be considered an AWM speaker, contact the Wellesley office for a registration form, and for forms for submitting reimbursement requests.

To obtain funding, a brief report must be filed by the speaker and by the host institution. Every attempt has been made to keep the paperwork to a minimum; we do, however, need some record of expenditures to present to the Sloan Foundation, which has generously supported our program.

The funds provided by this grant should make the Bureau particularly attractive both to speakers and to schools requesting talks. Please do what you can to publicize our availability. Let's make use of this opportunity to reach young women at critical times in their careers!

AWM ELECTION

Your humble editor has goofed a bit on the deadlines. So the by-laws will have to be bent a little.

In the fall of 1983, elections will be held by mail ballot of the general membership for the President-Elect, Treasurer, and two At-Large Members. Any member may suggest a name for consideration by the nominating committee by submitting the name of the proposed candidate and office to the President before June 1. (Here is the by-law bending: I doubt any of you can respond by April 1.) Nominations by petition may be made by submitting a petition bearing 20 signatures in support of the nomination to the President before September 1. (Here we are back to the by-laws scheduling.)

LETTER FROM THE EDITOR

The article "Les Femmes dans la Science" which appears below has been written by Lori Kenschaft, the daughter of Pat Kenschaft (herself the author of many Newsletter articles). Pat happened across a reference to the book and eventually received a copy through inter-library loan. After Lori translated some of it for her, she thought that AWM readers would be very interested in the material. In fact, an even wider audience might well find this material fascinating. If anyone knows of a publisher that might be interested in hiring Lori to translate the entire book, please write Pat Kenschaft, Dept. of Mathematics and Computer Science, Montclair State University, Upper Montclair, NJ 07043.

Claudia Zaslavsky's review about Black mathematicians is due to appear in the February, 1983 issue of Historia Mathematica (the issue has not yet come out at the time of this writing).

Kathryn Toll of Warminster, Pa., sends a reference to Alicia Boole Stott, third daughter of George Boole, which appears on pp. 258-259 of H. M. S. Coxeter's book Regular Polytopes (reprinted by Dover in 1973). Perhaps someone would like to

find out more about her and write an article for the Newsletter. A short excerpt from the source cited follows.

"In 1890 she married Walter Stott, an actuary; and for some years she led a life of drudgery, rearing her two children on a very small income. Meanwhile, in Holland, Schoute was describing the central sections... of the regular four-dimensional polytopes... Mr. Stott drew his wife's attention to Schoute's published work; so she wrote to say that she had already determined the whole sequence of sections i_3, the middle section (for each polytope) agreeing with Schoute's result. In an enthusiastic reply, he asked when he might come over to England and work with her. He arranged for the publication of her discoveries in 1900, and a friendly collaboration continued for the rest of his life. Her cousin, Ethel Everest, used to invite them to her house at Hever, Kent, where they spent many happy summer holidays. Mrs. Stott's power of geometrical visualization supplemented Schoute's more orthodox methods, so they were an ideal team. After his death in 1913 she attended the tercentenary celebrations of his university of Groningen, which conferred upon her an honorary degree, and exhibited her models."

Next I have an update on Lee Lorch's grievance. The following is excerpted from the Grievance Record, January 13, 1983, of the Contract and Grievance Committee of the YUFA, the faculty union at York University.

"The day before the case was to go to arbitration, the parties to the grievance--the Administration, YUFA, and Professor Lorch--agreed to the following settlement:

> Professor Lorch retains full-time status (and hence membership in the bargaining unit) while on reduced load for 3 years, effective 1 July 1982.
>
> ...
>
> Professor Lorch has agreed to retire as of 30 June 1985.
>
> This settlement is on a 'without prejudice' basis. ...
>
> The Administration has agreed to table proposals as soon as possible to the Joint Committee on Flexible Retirement in 'an attempt to regularize the terms and conditions of employment for persons in the bargaining unit aged 65 or over.'"

AWIS: CHICAGO AREA CHAPTER

The Chicago Area Chapter of the Association for Women in Science recently sent me information about two very interesting-sounding monthly meetings. However, it reached me after the deadline for the appropriate Newsletter. Instead, I will reprint for you part of their general information sheet. (I like to remind everyone of the existence of AWIS once in a while. In particular, I find the national Newsletter quite thought-provoking.)

Since its founding in 1971 the Association for Women in Science has grown into a multi-disciplinary national organization of nearly 4000 women scientists and their supporters, with a national office in Washington and vigorous local chapters in many parts of the country.

The purpose of both the national organization and our Chicago Area Chapter is to promote equal opportunities for women to enter the professions and to achieve their career goals. In particular, the local chapter, founded in 1978, has the following specific objectives:

To encourage young girls to seek careers in science;
To support women in achieving professional advancement;
To assist women seeking to reenter scientific employment;
To recognize the achievements of women in science; and
To inform the public concerning women's roles in the scientific community.

The Chicago Area Chapter meets once a month at locations throughout the metropolitan area and publishes a monthly newsletter. Write: Michelle M. DeBruler, AWIS, P.O. Box 13, Lemont, IL 60439.

1983 AWM EXECUTIVE COMMITTEE

Linda Rothschild, President	Dept. of Math, University of Wisconsin Madison, WI 53711
Bhama Srinivasan, Past President	Dept. of Math, University of Illinois, Chicago Chicago, IL 60680
Donna Beers, Treasurer	Dept. of Math, Wellesley College Wellesley, MA 02181
Anne Leggett, Newsletter Editor	Dept. of Math, Western Illinois University Macomb, IL 61455
Martha Jaffe, Clerk	31 Parker St. Newton Center, MA 02159
Bettye Anne Case, Member-at-Large	Dept. of Math & Comp. Sci. Florida State University, Tallahassee, FL 32306
Joan Hutchinson, Member-at-Large	Dept. of Math, Smith College Northampton, MA 01063
Jeanne LaDuke, Member-at-Large	Dept. of Math, DePaul University Chicago, IL 60614
Vera Pless, Member-at-Large	Dept. of Math, University of Illinois, Chicago Chicago, IL 60680
Judith M.S. Prewitt, Member-at-Large	C. Paul Stocker, Prof. of Electrical Engineering Division of Electrical Engineering Clippinger Research Laboratories Ohio University, Athens, OH 45701
Linda Keen, Alternate	180 Ames Ave., Leonia, NJ 07605
Past Presidents: Lenore Blum	Dept. of Math, Mills College Oakland, CA 94613
Mary Gray	Dept. of Math, Stat. & Comp. Sci. American University, Washington, DC 20016
Judith Roitman	Dept. of Math, University of Kansas Lawrence, KS 66045
Alice Schafer	P.O. Box 64, Wellesley College Wellesley, MA 02181

AWM PANEL ON COMPUTERS

held at the annual meeting, Denver, Colorado, January 6, 1983

My Microcomputer and I by Nancy Johnson, Chicago State University

In March, 1982, my husband (likewise a mathematician) and I bought a 48K Apple II microcomputer with one disk drive, the Pascal language system (bringing memory to 64K) and a color monitor. Since then we've added a microsoft Z-80 softcard (to run CP/M) and another disk drive. We bought an Apple primarily because both our respective institutions have Apple microcomputer labs which we use for instructional purposes. (I teach a microcomputer course for teachers, and he teaches a wide range of computer science courses including Pascal, assembler, graphics, data structures, etc.) We are thus able to do most of our preparation at home. Programs are, of course, stored on 5¼" diskettes and are easily carried between home and work in plastic "library cases" holding 10 diskettes. By now, we each (including our 15-year-old son) own two library cases which must be carried back and forth.

Besides using my computer to try out examples for lecture and "debug" programming assignments, I reserve some diskettes for storing student work. Students save under

their last names their homework programs on my "homework" diskette. I can then load and run their work at home. The students also save time programming projects in this manner. I save these to show as demonstrations to other groups.

I use my microcomputer as a word processor also. I use Super Text II, a good word processing program for the Apple. I prepare all kinds of documents with Super Text: course syllabi, assignments, memos, reports, exams. However, because there are few mathematical symbols available and no sub- or superscripts, I can't do any mathematical writing. I use the printer at school to run off my material, either making one copy to make a Ditto master, or as many as I need. Because the text of these is stored on diskette, it is easy to edit and update materials. Our son uses Super Text to store stories he writes, and to keep records of Atari game scores for himself and the neighborhood kids.

As I said earlier, we have Pascal. My husband uses the Pascal text editor to create memos, syllabi, assignments, etc. He uses the printer at his school to run things off. Lately, however, we have found it increasingly onerous to carry our diskettes all the way to work to get a hard copy. Our next major purchase will be a printer.

We have several games, played mostly by my husband, our son, and his friends. The games are surprisingly good, surprisingly complex, and those who are interested have many hours of pleasure playing them.

This summarizes the more obvious ways we use our microcomputer. Lately, I have begun some interesting work which relates less to my being a mathematician than to other activities in which I am involved.

At my university, the faculty have a collective bargaining contract. In fact, the faculty of five Illinois universities are covered under this contract. A grievance is an alleged violation by the administration of the contract. There is a three-step grievance procedure to process grievances, each step involving a hearing and a written decision. At any point in the procedure a grievance may be settled.

The project I am involved with now is creating a computer data base of all the grievances filed. We want to have as much information as possible about a grievance: campus where it occurred, violations, resolutions, any and all dates of official steps in the grievance procedure. I am using DBMaster, a data base manager for the Apple II, which is very good. I have set up the record structure. Clerical help then merely enters the required information.

We also require some simple statistical information about the grievances. Some of what we want is available on DBMaster, such as simple counting of types of things. However, we also want to know the answers to many questions about how long between this step and that step. DBMaster can't provide that information. I will be writing a program to provide answers to our questions.

Finally, because of our collective bargaining agreement, I recently found myself investigating a question which might be of interest to both mathematicians and philosophers. The question is: what is a "fair" summer school teaching rotation policy? This is related to the contract because each department is required to develop a summer school teaching rotation plan. Although the definition of rotation doesn't mention "fairness", it nonetheless seems to me that a rotation plan which favors a few people over a period of time isn't a good one. So, my notion of a "fair" rotation plan is one which assures that over a period of time, each department member would teach approximately the same amount of summers. The urge to investigate this question came to me when the administration decided that the mathematics department rotation plan was faulty. Briefly, the math department's plan awards points for not teaching. Those with the largest number of points have the highest priority to teach the next summer. The points are cumulative, so a faculty member may opt to forgo teaching for several summers to build up "equity", in order to teach several summers in a row in the future. (By the way, I should point out that summer teaching is a valuable commodity at my university because we're compensated at the same monthly rate as during the academic year).

Another plan used by some departments involves an initial ranking of faculty according to rank, tenure, years of service. Those who don't teach in a given summer

are moved to the top of the priority list, and those who do teach move to the bottom. Those at the bottom are ranked according to the initial ranking. The difference between the math department's plan and Brand X is that the former takes into account the entire past history to determine priority, and the latter, only the past year.

I had to prove to an administrator that the math department's plan was fair and Brand X was not. In simulating the math department's plan, I showed that over a 10-year period, each faculty member taught the same number of summers. However, for Brand X, my simulations showed that the senior members of the department taught more summers than the junior members. In the worst possible case, the senior member taught 100% of the summers, while the rest each taught only 50% of the summers.

I am interested now in writing more elaborate simulations for summer rotation plans. I think now that perhaps the math department's plan is fair only if everyone has an infinite number of chances to teach, because in a few years, new faculty may have to wait several years to get to teach in summer. That doesn't seem fair.

Administrative use of the computer by Louise Hay, University of Illinois, Chicago

While I have used the computer both for mathematical research and for teaching purposes, this presentation will be limited to the administrative uses my Department makes of the computer, since administration has been my primary occupation these last few years. The efficiency of departmental operations has been greatly increased by use of the computer, because of both its word-processing and data-handling capabilities.

Some examples of uses: Our departmental address directory is on the computer, which makes it very easy to update from year to year without complete retyping. This is a non-trivial enterprise in a department with 80 faculty and about 90 Teaching Assistants. Our timetable (schedule of classes) is on the computer, although only for ease of modification, since schedules change until about the third day of classes due to fluctuations in staffing due to sick leaves, T.A.'s quitting, etc. We have not yet found a way to computerize the decision-making process of deciding which courses to offer at what times and with what teachers. This would require an "expert system" of the sort Artificial Intelligence researchers are trying to design, to simulate our expert in this area who carries around all the relevant information in his head. The computer is also used to store achievement records (publication lists, papers presented, committee assignments, etc.) for faculty. This avoids the past problems of new errors creeping in with each retyping. It also makes it possible, with the use of a suitable "macro," to convert these records into the proper format for promotion papers without any retyping. We have hopes of making these records part of a wider departmental data base that would simplify the gathering of statistical data about the faculty, but that's in the future--someone first has to figure out how to use the SASS data base program that works on our system, to avoid the major problems involved in starting such a system from scratch.

Another use of the computer is to generate letters. For instance, if 10 candidates are being considered for possible promotion and each has 6 or 7 referees, that's a lot of letters to type. A simple macro generates requests for recommendations, reminders, acknowledgments, and envelope labels. All one has to do is type in the addresses and a keyword to indicate whether this is a new referee or one who was consulted previously, in which case the wording is slightly different. A similar use is made in recruitment --again a great help since we get over 300 applications in response to our ads. Addresses are typed in and a macro generates acknowledgments of applications, address labels, and after hiring is completed, rejection letters for the 297 or so unlucky candidates. Another use in recruitment is to generate a list of applicants classified by field, which can be continually updated and perused by the faculty to see which candidate files to look at.

Also on the computer are our Annual Report; our Faculty/T.A. Handbook, and our Graduate Handbook, all of which contain information that needs periodic updating but where the general text remains the same. We have discovered that word-processing is

most efficient in the context of recurring publications of that sort. It is inefficient to word-process everything, since the possibility of perfection makes it tempting to modify and re-modify even when it's not really necessary. I find a good compromise for non-recurring memos is my secretary's memory typewriter, which can save small amounts of text long enough for me to make minor changes without causing her a lot of extra work. One problem in computerizing clerical work is that it saves a lot of secretarial time, but at the expense of faculty time in setting up the various systems--it's worth it in the long term, although it would be nice if we could afford a regular systems programmer.

All of this has been done on our mainframe IBM computer, which works out well because we have exceptionally good access to the system via phone lines and, more recently, a cable network system. There are problems, however: because of the easy access to students, it is difficult to get on the system during peak hours when school is in session. It is not uncommon for the document printer to break down just when we need a stack of letters printed. Our bigger data sets get archived on tape frequently, and it takes a couple of hours to get them back when needed. Another problem is that the system is continually being "improved": in the last 7 years, we have gone from punch cards and a primitive TSO editor to terminals with the WYLBUR editor on MVS to WYLBUR on CMS and, most recently, to accessing the system via the Network. Each improvement adds yet another layer of commands that have to be learned to get to the "bottom" program level.

Most or all of what we have computerized could be done just as well on a micro-computer, and we may do that in the future for easier access. The only process I have computerized on my home computer (as an exercise in learning PASCAL) is that of salary raise computations--fiddling individual raises and percentages so as to assign an approximation to the merit raises decided on by our elected Salary Committee, while staying within the total raise pool assigned to the department. The program keeps running totals by rank and prints out listings both alphabetically and in decreasing order of salary. The only other use I have made of my home computer is to computerize our freezer inventory, which has made for more efficient turn-over of the freezer contents since it's so easy to turn out a fresh list of contents once a month in lieu of the scribbled-over and mostly inaccurate listing we had in the past. I would very likely use the home computer more except that my spouse subscribes to the Operating System-of-the-Month-Club, so that I never quite know where the system is at. In conclusion, it is hard to imagine life without the computer at this point (just as it is hard to remember what it was like before the Xerox machine).

Computer Studies--A Natural for Mathematicians

by Lucy Garnett, Department of Statistics and Computers, Baruch College, NY, NY

I had no sooner finished writing my Ph.D. thesis, which combined ideas from the fields of Brownian motion, foliations and ergodic theory, when I was ready to change directions of study. I had just arrived at the mathematics department of the University of Colorado in Boulder, which was housed in the engineering building. While I was looking around for a new subject to learn, rows of gleaming CRT terminals blinked at me and caught my eye and I thought, "Ah, yes, I want to learn how to manipulate those objects." Although as an undergraduate at MIT I had always shied away from laboratory-oriented courses, somehow a terminal seemed a lot safer than chemicals and electrical wires.

Once I perceived that computer money was not "real" money in the sense that it wouldn't cost me anything, I decided that it was time to master the machine. The first step was to find a specific mathematical problem to solve using the computer. That is not very difficult to do because there will always be people happy to have someone else perform their calculations for them. However, I was very fortunate to have been given a lovely problem by Bill Thurston. Namely I was to compute the Hausdorff dimension of the Julia set obtained by iteration of the map z → z**z+c in the complex plane. This was a very good problem for my purposes. First of all, Thurston had a nice algorithm using Newton's method which was suitable for interactive programming of the computer. That is,

you feed the computer a piece of data, it calculates according to how you previously programmed it and then gives you an answer. Based on this answer, you give it more input and it returns with more output. This process goes back and forth until the final result is obtained. The second advantage of Thurston's problem was that the algorithm depended upon the Julia set's being generated in a certain order. Thus I immersed myself in the world of computer graphics in order to draw the Julia set. It was a hard learning experience. Starting with very little knowledge of computers, I approached the problem in a totally unstructured manner. I did not learn anything for which I did not have immediate use. Unfortunately, neither did I learn everything that I did need. The resulting programs were very frustrating to read, to debug and to modify. However, slowly but surely my programs began to run and produce graphical and numerical output. I was hooked; I always wanted to change one more parameter and to generate one more picture.

At this point in time, I had to perform a job search. There was a demand for people to teach computers and I obtained a position at Baruch College in New York City. Teaching is a great learning experience. I taught structured programming and a general introduction to computer systems. This gave me a broader understanding of the use of computers. They are used not only as number crunchers to produce mathematical examples to gain insight into mathematical phenomena. Computers are used most frequently in the "real world" as data processors. Probably at any given moment most computers are moving data around, that is, rearranging existing data into more usable form.

It was then time to move from working at computer centers of various universities to working at my home, thus allowing me a more flexible time schedule and the opportunity to work at night (a much less pressured time for both the computer and me). The first decision to make was whether to buy a terminal or a personal computer. Whereas a terminal which must be hooked up via a telephone line to the university IBM computer would be cheaper and produce a clearer picture, the advantages of having my very own computer were greater. Not only could a personal computer be used as a terminal, it could also support peripheral devices such as a printer or plotter to make hard copies of the output on the monitor, and disk drives with floppy disks for use as a permanent storage device. Prepackaged software would turn it into a video game or word processor. I could write my own application software for grading students or trying out some mathematical ideas. Or it could be used just as a learning experience for some new programming language such as Pascal (there is a very well-written manual for learning Apple Pascal written by Luehrman and Peckham). There is a word in the world of computers: it is "TURNKEY". It is used to describe a computer system that is designed to function for a user who knows nothing about computers. The owner need only turn the machine on and the computer will give all the prompts necessary to use the computer as a tool. A psychologically more important aspect for me might very well be termed "TURNOFFKEY". That is, one can experiment to one's heart's delight, but whenever the threads of the program are too twisted and total confusion reigns, the machine can just be turned off. When it is turned on again, memory has been whitewashed and the slate is clear to try once again. So I scouted the computer stores in the Big Apple and bought my little Apple (actually an Apple II plus the 64K RAM). The time was then ripe to explore the purchase of more serious graphics equipment. Mathematics is another science in need of equipment and funds to support this equipment. Together with Linda Keen and others at the Graduate Center at CUNY, I wrote an NSF proposal for a graphics terminal.

What does the future hold in store? My first thought as I sit at my computer using it as a word processor to type this manuscript, is that touch typing will be taught at school. More seriously though, computers are here to stay; and the study of them, what they can do, and how to teach others is profitable and exciting. Computers can be used for mathematical problems. Application programs can use the computer as a number cruncher. I worked this summer with James Curry and Dennis Sullivan drawing pictures to study the convergence properties of Newton's Method in finding the zeroes of complex cubic mappings. System programs are needed to exploit the graphic capabilities of the computer. Graphics can be used to obtain insight into two-, three- and even four-

dimensional figures as is presently being done by Tom Banshoff at Brown University. Conversely, mathematics can be used to provide insight into computer problems. As mentioned before, large sets of related pieces of data, called data bases, are constantly being used. How should these sets be structured so as to be efficiently accessed and modified by different applications? By the way, this is a use of the computer where intelligence awareness is needed to prevent possible misuse. With the development of microprocessors, the possibilities of robotics have increased. Mathematical models are used to study the linkage. Another area of study which is receiving and will receive a great deal of attention is how to teach problem-solving and programming to the ever-increasing number of students entering the field.

In conclusion, let me say that the computer is a very useful tool. Maybe soon, everyone will have to know how to use one. It is a natural field of interest for mathematicians, not only for its computational aid, but also because it uses the way of reasoning that is core to mathematical thinking.

REES AWARDED MEDAL

press release

Dr. Mina Rees, President Emeritus, The Graduate School and University Center, The City University of New York, and noted mathematician, has been awarded the National Academy of Sciences Public Welfare Medal in recognition of distinguished contributions in the application of science to the public welfare. The honor, presented at a special awards ceremony on April 25 in Washington, has been granted to Dr. Rees for her contributions to the scientific enterprise, especially in mathematics, and computer sciences, from wartime through the transition from war to peace and continuing today.

Considered one of the most prestigious of the National Academy honors, the Public Welfare Medal was established in 1913, with the first prizes to George W. Goethals, builder of the Panama Canal, and William Crawford Gorgas, who helped eradicate yellow fever in the Canal Zone. Among the other past recipients of the Medal were J. Edgar Hoover, John D. Rockefeller, Jr., David E. Lillienthal, Alan T. Waterman, John Gardner, Leona Baumgartner, and Walter Sullivan.

Mina Rees, after receiving her Ph.D. in mathematics at the University of Chicago in 1931 and serving her academic apprenticeship on the faculty of Hunter College, received her initiation into the military applications of mathematics during World War II when she served as Assistant to the Chief of the Applied Mathematics Panel of the Office of Scientific Research and Development. For her work, she was honored by both Britain and the United States. At the end of the war, the Navy invited her to establish the mathematical research program in the newly created Office of Naval Research. This proved to be a surprisingly effective effort that expanded the horizons of mathematical research in the United States and strengthened programs in mathematics throughout the country. Her work was recognized in 1962 when the Mathematical Association of America gave her its first Award for Distinguished Service to Mathematics.

Among Dr. Rees's activities in Washington, one that proved particularly significant was her participation, on behalf of the Navy, in the government sponsorship that proved critical in the infancy of computers. In addition to providing wide support for university research of basic importance to the emerging computer field, ONR collaborated with the National Bureau of Standards in supporting and directing its program. This program claims as one of its achievements, funding the production of the first commercially produced electronic, stored program computer, the Census UNIVAC that was delivered in 1951 and used in analyses of the 1950 Census data.

When, in 1953, Dr. Rees left Washington to become Dean of the Faculty of Hunter College, she continued her support of the Bureau of Standards as chairman of the Bureau's Advisory Committee on Mathematics, and was a member of the Mathematics Division

of the National Research Council where she was chairman of the sub-committee on Applied Mathematics of the Commission on a Survey of Research in Mathematics in the United States, 1954-56. There followed public service activities for the Defense Department, for several academic organizations, and for the American Association for the Advancement of Science of which she became the first woman president in 1971.

With her assumption of the position of first Dean of Graduate Studies and, later, first president of the Graduate School and University Center of the newly established City University of New York, Dr. Rees's activities became focused on the strengthening of graduate education in her own institution and throughout the United States. In 1970, she was chairman of the Council of Graduate Schools in the United States. From 1964-1970, she was a member of the National Science Board.

Since her retirement in 1972, Dr. Rees has continued to serve on boards that are concerned with applications of research to social problems including the delivery of health care. She is a member of visiting committees in two universities and works with a number of foundations concerned with improving the effectiveness of the educational establishment.

RUSKAI NAMED SCIENCE SCHOLAR

Congratulations are due to Mary Beth Ruskai, Department of Mathematics, University of Lowell, Lowell, Massachusetts. She has been named a Science Scholar for 1983-1985 by the Mary Ingraham Bunting Institute. She will receive a two-year appointment to conduct research in a laboratory or in a research group at a major university in the Boston area.

REMEMBER AWM IN YOUR WILL!

by Mary Gray, General Counsel, AWM

Most of us do not like to think about making wills. Suggestions of our own mortality are not welcome. However, everyone needs a will. What I should like to suggest is that you consider remembering AWM in yours.

Making a will is fairly straightforward, but it is a good idea to have a lawyer help you with it. For example, if you have property in more than one state, you want to be certain that your will meets the requirements in each of these (as to the number of witnesses, for example). You can make your gift quite simple:

> I give, devise and bequest $10,000 to the Association for Women in mathematics.

Further identification--by address, for example--may be helpful.

There are more complicated bequests. For example, you may want to leave all or part of your estate to particular relatives or friends. But have you considered what will happen if that person or persons die before you do? (Or in the same accident as you do so that the order of death cannot be determined, another contingency which should be provided for.) Perhaps AWM might be left something if there is no longer anyone to provide for.

You can specify property to go to AWM (or anyone else): "My mathematics library to AWM." (But be certain that there is a way to determine of what that consists.) Or "my 100 shares of AT&T stock to AWM." However, if you bequeath "100 shares of AT&T stock" and there are no longer 100 such shares in your name, the probate court will

usually give the equivalent in money or other property (if any). If the bequest is "my 100 shares" and you sold the stock, AWM may be left out entirely.

There are also much more complicated ways of remembering AWM--for example, by making it the beneficiary of an insurance policy. There are also ways of realizing tax advantages now of gifts which really only go to AWM on your death. Of course, for such things as annuities, charitable remainder unitrusts, pooled funds, you should get competent legal advice. But there are many things that AWM could do for women and girls in mathematics were it the beneficiary of more of its members' generosity.

SUMMERMATH FOR TEACHERS

Secondary school teachers of mathematics will have a unique opportunity to explore recent developments in mathematics education at Mount Holyoke College's innovative program, SUMMERMATH FOR TEACHERS. The college will hold two two-week residential institutes: July 11-July 22, 1983, and July 25-August 5, 1983. The program is offered in conjunction with SummerMath, Mount Holyoke's nationally acclaimed program for young women in high school.

The central focus of SummerMath for Teachers will be to introduce teachers to cognitive process instruction and its application to the teaching of mathematics. By analyzing error patterns, developing questioning techniques, and helping students to become more aware of their own thought processes, teachers will acquire new strategies to make their own mathematics teaching more effective.

Interwoven with this central theme will be two different focuses for the institutes. The first session (July 11-22), "Young Women and Mathematics," will reveal ways to inspire young women to participate in higher level mathematics. The second session (July 25-August 5) will offer "Microcomputers in the Mathematics Classroom: An Introduction to LOGO." Participants will receive Mount Holyoke College graduate credit; the program is open to men and women.

For information and applications write or call Dr. Joan Mundy, Director, SummerMath for Teachers, 302 Shattuck Hall, Mount Holyoke College, South Hadley, MA 01075, 413/538-2608.

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

translated and edited by Lori Kenschaft, Swarthmore College

Published in 1897, Les Femmes dans la Science by A. Rebière provides an interesting insight into one view of women's role in the development of science and mathematics through the nineteenth century. It includes an extensive collection of short biographies of women in science throughout the ages, most of whom are not well-known. The second portion of the book consists of a summary, from the author's point of view, of the arguments concerning the ability of women to participate in science and mathematics, and selected quotations--with occasional pithy comments--on this issue.

The following series of articles contains translated excerpts from both portions of Rebière's book which I thought would be especially interesting to AWM readers.

* * * * * * * * *

No Science is for them most profound...
It is not honest for many reasons,
For a woman to study and know all things.
--Molière

Laure Bassi

From several points of view the character of scientific men is strongly non-feminine. They occupy themselves with facts and abstract theories, not with people and human interests.

--Francis Galton

Bassi (Laure-Marie-Catherine), Dame Verati

--A mother of a family, charitable and scholarly.

Bassi lived in Bologne from 1711 to 1778. She learned Latin and philosophy and defended, at the age of 21, a public dissertation. She was encouraged by Cardinal Lambertini, who became Pope under the name Benoit XIV. Proclaimed laureate in philosophy, she argued with the Cardinal of Polignac. She learned geometry, algebra, and Greek. She attached herself to the Institute of Bologne, without asking its permission. The elector, Baviere, and Emperor Joseph II were present during her experiments in physics.

She married a doctor, Verati, became an excellent mother to her family, and displayed much charity for the poor.

She opened within her own home a course in experimental physics and cultivated this science for eighteen years. In 1776, the Senate nominated her to the Chair of Physics of the Institute of Bologne, replacing Balbi.

"One must not forget Mme. Laura Bassi, professor of philosophy, she who was received at and took the cap of doctor in an open university. She also wore there a robe of ermine, when she lectured publicly; this came but rarely and only on certain formal days, because it was not considered decent that a woman should thus show each day, at all comings, the hidden things of nature. In compensation, from time to time philosophical conferences were held in her home. I found myself there one evening, and it was again necessary, as in Milan, for me to unfold my old Latin in order to discuss the liking and the strange attraction which is electrical phenomena.

"Signora Bassi has spirit, politeness, doctrine; but, with all that, I did not switch allegiance from my young girl of Milan (Agnesi)."

--De Brosses, Letters from Italy, p. 222

The Mémoires de l'Institute of Bologne contains two dissertations by Bassi, one on the question of hydrometry, the other on a mechanical problem.

Her experiments on the compression of air were exposed by Zanotti.

Dumée (Jeanne)

A bourgeois Parisienne. Widowed at the age of 17, she devoted herself to the study of science. The manuscript of her Entretiens sur la système de Copernic (Conversations on the system of Copernicus), has been preserved. She died in 1706.

The important manuscript of which we speak is in the national library of France, no. 19941. It is bound in red Morocco leather, and on the plate there is a golden escutcheon where a wreathed hen lifts her foot. The complete title is Entretiens sur l'opinion de Copernic, touchant la mobilité de la terre (Conversations on the theory of Copernicus, regarding the mobility of the earth). It is dedicated to the Chancellor of France from Boucherat, with his portrait.

Here are a few quotes:

"Someone will say, perhaps, that this is a work which is too delicate for a person of my sex. I agree that I have allowed myself to have the ambition to work on matters about which the women of my time have still not thought, although after they become familiar with these matters they are not incapable of studying them, if they want to take the trouble to do so, since between the mind of a woman and that of a man there is not a single difference. I hope that my book will inspire them to some emulation."

"That which I say here about the theory of Copernicus is not intended to establish, still less to support, but merely to expose to view the reasons with which the

Copernicians defend themselves and, besides, to satisfy certain people who, having given me the honor of a visit, turned a sphere which I had set up following this theory. They insisted that I converse with them about the reasons for this theory, and pledged me to put them into writing... The initial hypothesis, etc."

The Journal des Savants, 1680, p. 269, speaks of this book as if it had been printed, but no one has ever seen a copy.

Quinet

"The study of mathematics, of geometry especially, can be of great assistance to a writer. Precision of spirit and moral precision, that is to say, justice, certainly have a mathematical base."

Mme. Edgar Quinet, Le vrai dans l'Education (Truth in Education), p. 43.

From the same book, p. 44:

"Considered at its most highly raised point of view, mathematics does not have only a scientific character; it fortifies the character, it opens infinite perspectives to the intelligence."

Coignet (Clarisse), née Gauthier

Here is an excerpt from her book titled Morale indépendante dans son principe et dans son droit (Independent morality in its principle and in its right); Paris, 1869.

"The principle of mathematics is an abstract conception given by reason.

"The principle of morality is a living fact given by experience....

"Mathematical axioms do not meet obstacles in life, because they do not attack life. Their sphere is the pure idea unconstrained by practical elements....

"Morality, having a subjective principle which is liberty and an ideal which is justice, really manifests itself only in application...The object of morality is not a chain of theorems which have developed without resistance and without obstacle outside of life, it is a conquest which has for a theatre life itself; it is the conquest of liberty over fatality, of justice over strength."

Our contemporary, Mme. Coignet, has also published De l'éducation dans la Démocratie, De l'affranchissement des Femmes en Angleterre, Biographie de Mme. Lémonnier, Victor Considerant, Cathérine de Medicis et Francois de Guise, etc.

INTERNATIONAL CONFERENCE ON TEACHING AND RESEARCH RELATED TO WOMEN

report prepared by Lee S. Alder, Concordia University, and
Fran Rosamond, Rochester Institute of Technology

The conference of the title was held at the Simone de Beauvoir Institute, Concordia University, Montreal. At Plenary I: Research Related to Women--Conceptual Approaches, a disciplinary workshop called "Mathematics, Statistics, and Computer Science" was held July 27-28, 1982. About 300 women from all over the world participated in the Conference. Only about 15 women attended the disciplinary workshop on Mathematics, Statistics, and Computer Science, in spite of several addresses that urged women to be more attentive to science and technology.

Presentations were given by George Eshiwahi, Saj-nicole A. Joni, Souad N. Barnouti, Fran Rosamond, and Roberta Mura. Lee Alder presided and also gave some information about the Co-op Program in the Department of Mathematics at Concordia University. The presentations resulted in lively discussion and generated many questions worthy of future investigation. The following will outline each speaker's position and then list some of the ensuing remarks.

George S. Eshiwani (Kenya) offered many statistics to illustrate that few women persist in mathematics courses in Kenya. Even in those fields with employment opportun-

ities, when math and science are required less than ten percent of the workers are women. George's position is that school is the primary teacher of mathematics and physics. If changes are going to come then they will be the result of a focus on elementary and secondary schooling; we cannot wait until college. College is too late. George raised the possibility that working together in single-sex classes might encourage females. He cautioned that we must not teach so as to make girls second-rate citizens.

In response to George's presentation the question was raised: Can one separate curriculum from the social context? Women may be taught mathematics at school, but when they go home they are in a different position from their male siblings and are asked to perceive themselves differently. In a recent study successful Ph.D.'s were asked if they would move because of their job even though it would not be good for their spouse. Women tended to say, "No, I must consider my husband." Men tended to ignore the woman. Mary Mowbray pointed out that in Australia women tend to drop out of school math when it becomes voluntary. She said that boys also were starting to drop out of math even though there were lots of technical opportunities. There are not even enough male graduates to fill employment needs. Souad Barnouti reported that in Iraq there were enough women math Ph.D.'s to teach before the women's schools were closed. But when women enter a field, then that field is devalued. Souad claimed that even mechanics have more status than medical doctors when medical doctors are mostly women.

Saj-nicole A. Joni (Wellesley College, United States) raised the following question in her presentation: Does there exist something in the way women talk and conceptualize that is discontinent with male-developed mathematics? Saj was careful to say that her experience has been with white middle- or upper-class Americans who attend prestigious schools. This is a very specific group; and women from different backgrounds, class, ethnicity, race, sexual preference, who go to state schools, etc., might have other things to say to us.

Mathematics has been presented as dispassionate with no realm for normal human considerations. This myth is the crucial filter. It is emotionally satisfying to women to work in connection to self, while it is emotionally satisfying for men to work not in connection to self. It is important for us to look at conceptual structures and to identify where women turn off with respect to mathematics. Saj suggested we look at the following:

1. The language of mathematics often is hostile and aggressive. Much mathematics was spurred by warfare. Computing terms such as "bit", "byte", "hang", "bomb", "crash", and strategies called "kill and yank" or "divide and conquer" may form barriers for women.
2. Our usual way of lecturing in a course is acontextual. "Take any x and ..." leaves even our most capable women wondering what we are doing and why we are doing it. A parallel was made with how one might act when hearing an explanation from another. One way would be merely to listen while something is being explained, just murmur "Uh huh, uh huh...", and let the person talk on and on until finally what the person has been trying to say is understood. Another way is to get to know the other person, exchange names, ideas about other things, and establish a basis for talking before going into an explanation. Often we ask our students to do the former. We ask them to crank out answers with the promise that next semester they will understand. Women students do not want to hang in there forever. They do not want to be asked simply to manipulate rules before understanding.
3. Perhaps there is an intuitive structure at which women excel while men have been trained in a formal thought structure. Often when multiplication by fractions results in the product being less, then female students are upset. Multiplication should result in more. Men were more willing to let go of the intuitive idea of multiplication as repeated addition and to accept the formal rules that underlie algebra. Saj suggested an analogy with boys playing rule-bound games while girls engaged in context-bound games.

Our future depends heavily on science and technology. But it is difficult for women mathematicians to sustain their satisfaction with mathematics in their present

situation. Women's views are truly needed and missing, and women's optics will produce new results. We need to find ways to connect that will affirm women's ways of seeing. Perhaps when women in sufficient numbers are involved, then the discipline will change in significant ways.

In the discussion that followed, Souad suggested that women who are science-trained have available to them ways of thinking that are different. If science thinking is gender-specific and missing certain essentials, then it will not be satisfying over long periods of time for many women. Is it, however, a problem with the development of mathematics rather than between women and men? Does the structure of thinking for men and women change when one studies science? How might it change?

Mathematics tends to value symmetry (not asymmetry), hierarchical structures rather than linear ones, and linear inclusion rather than the idea that the whole is greater than the sum of its parts.

The idea was raised that computers are a math object and that teaching computers without the mathematics is total disempowerment. Women especially desire more context. Someone noted that men see the computer as a mechanical device to be conquered and taken apart, while women tend to name their machine and even embody it with personality.

In Souad Barnouti's (Baghdad) presentation, she pointed out that women were not active in management or administration fields. Employment is well-studied, but we still do not have knowledge of the mechanisms that cause conditions. Technology tends to push women out of work. Whenever a field becomes modernized, then men take over. What is good in an organization for men is not necessarily good for women. Organization tends to be "rational" and asexual with a goal of maximal profits. Women are willing to work for less wages. Women tend to be more passive, responsible workers. Souad distinguished between sex segregation and sex discrimination, saying that there was some overlap but that they could be seen as two different processes. For management there is an advantage in single-sex workers. Often an all-women workforce means they are cheaper and they help each other, sympathize with each other. Often these women workers are not allowed to organize work hours to help each other. Thus, if you are industrializing and need extended and consistent services, then men are used. Group dynamics in management is important: how can one break up a single-sex group and still keep efficiency?

Souad said that there are two personnel systems in any country: one is the formal company policy, and the other is the manager's personal preference. There are many present policies that might have been appropriate early in the Industrial Revolution but should not be used now. Part-time workers, entering time, for example, is cheap. Pay increments come later. Employment gaps are discouraged. Language reflects sexism: manpower, etc. These are all bad concepts and need to be reconsidered.

In the discussion, Lee Alder reminded us of Virginia Wolfe's A Room of One's Own and the need for uninterrupted periods of time to accomplish goals. This brought responses from people who said things like, "How can I be productive when I don't have a lot of time? Cause I don't have it!" Perhaps the notion of uninterrupted time is a myth that we have internalized. Modern needs may be different. Uninterrupted time may be obsolete. Fragmentation of knowledge may mean enrichment.

The group went on to question what it means to be "great". Does it mean one must be infinitely deep, infinitely narrow? What is our ability to ask our own questions in mathematics? If we don't verbalize, then we are less likely to take action on it.

Roberta Mura pointed out that women tend to work in isolation. Even older and more prestigious women had fewer contacts than male colleagues. The possibility of a Women's Institute for the Study of Mathematics was discussed. Women are valuable and deserve a nurturing environment for their clear thinking.

Fran Rosamond (Cornell University, United States) presented a paper "Mathematics: A Woman's Point of View." Fran stated that part of the work was motivated by the belief that math anxiety is a destructive concept. The words "mathematics anxiety" conjure up images that range from the normal anxiousness or lessening of confidence one may experience when embarking on a new and different venture to that of an incurable, debilitating illness or disease. A certain amount of anxiety may be a feature of learning anything new because of our past learning experiences. Fran found that those students who paid

attention to their anxious feelings were able to find ways to take power over them and thus persist towards their goals. Fran raised two main points: the importance of feeling in learning mathematics, and the possibility of a woman's view of mathematics. She included quotes from women to expose those "seeds" which may open up and transform the learning and teaching of mathematics. Fran also handed out material provided by Dorothy Buerk. Dorothy studied intellectually-able women who avoided mathematics. Dorothy used William Perry's scheme describing intellectual and ethical development through positions of growth in conception of knowledge as her psychological model.

Saj-nicole Joni asked that women in mathematics reconsider the traditional definition of "great" mathematician. Is it possible that women are unwilling to make the personal sacrifices needed to achieve the large number of results expected from "great" mathematicians? Where does this leave the competent woman mathematician who refuses to be so narrow and therefore is considered a drop-out by her male colleagues? How can we provide a sufficiently nurturing environment to help women through the inevitable time-out for self-reevaluation? If mathematical results are only considered to be significant if they answer questions posed by "great" (and usually male) mathematicians, how can women's questions ever be considered important? Joni believes that there would be great value in a Women's Institute for Advancement of Mathematics, Science, and Technology and would be interested in being part of a group to start one.

George Eshiwani responded that few men ever get a position where they feel that they ask the important questions either. He asked if it could be expected that most mathematicians march to someone else's drum beat? Roberta added that the classification of mathematical results as recreational or relevant is made by someone who is judged to be great by (usually) his peers.

Parul Deroki, who had studied in Ottawa, explained that in Fiji an educator must relate to the general population there and in Samoa as well as to the usual University community.

Roberta Mura (Canada) gave a micro-miniaturized summary of her "Gender and Mathematics in Canada", published in An International Review on Gender and Mathematics prepared by E. Schildkamp-Kundiger and available through ERIC. She has found that Canadians take for granted that there are few women in mathematics and do not even question why. In 1978-79 Canadian women made up 4.2% of university faculty in Mathematics and the Physical Sciences, 14.8% of university faculty in general, but 39% of the workforce in Canada. In 1979-80 women received 28% of the Bachelor's degrees, 19% of the Master's degrees, 10% of the Ph.D.'s awarded by Canadian universities in Mathematics and the Physical Sciences; the corresponding figures for the following year were 28%, 17%, and 8%. In Quebec it was observed that women scientists are less well-inserted than men in the North American scientific network: the number of certain kinds of men's professional contacts (e.g., exchange of preliminary results, being co-authors of articles) increase with their age and position, while women's do not.

Roberta quoted studies reporting that women mathematicians score higher than their male colleagues on certain variables used as predictor of success such as secondary school and undergraduate marks and social class, leading one to ask: "Where are the women of equal ability?" She listed the variables studied so far with respect to gender differences in mathematics, as well as factors proposed as possible explanations of such differences and intervention programs for achieving equity in mathematics education. Some of the variables are: courses taken (by gender), achievement (greater differences in tests are evident across race than across gender), attitudes (little gender difference has been shown to the predilection to use a calculator), and learning methods. Factors isolated are perceptions that "math is male", difference in perceived ability (given a problem little girls say they can't do it but succeed, while little boys say they can do it or they could do it if they wanted to, even when they don't succeed) and perceived usefulness of mathematics (males say useful, women aren't sure). To intervene one must consider that women prefer cooperative methods of learning while men prefer competitive ones, and that society expects boys to succeed in studies and girls in their personal lives.

Roberta concluded with a set of quotes collected by Grace Burton and published in

Perspectives on Women and Mathematics edited by Judith Jacobs showing sexist statements attributed to Rousseau (1762), Luther (1569), Nietzsche (1886),..., Lang (1977), and popular greeting card salutations.

In conclusion, women in mathematics and statistics found meeting with other women in the discipline valuable, although we were far too few in number. There was general agreement that the time has come to embark on as far-reaching a critique of the sciences from a feminist point of view as is now being undertaken in the arts and social sciences.

NOTE ON FULBRIGHT AWARDS

by Louise Hay, University of Illinois, Chicago

As a member of the Advisory Committee for Mathematics of the Council on International Exchange of Scholars (Fulbright program), I have been struck by the lack of applications from women. As a former Fulbright grantee to the Philippines, I highly recommend the experience from both a professional and a personal point of view. It is very illuminating to find out how the rest of the world lives culturally, mathematically and pedagogically. While awards to Western Europe and other developed countries are extremely competitive, openings in Third World countries frequently have an insufficient number of candidates--these are the more rewarding posts from a teaching point of view, though not as a place to do research. I would like to encourage women mathematicians to look into these opportunities.

LEGAL DEVELOPMENTS OF INTEREST

by Mary Gray, General Counsel, AWM

Norris v. Arizona. This case has been accepted for review by the Supreme Court, and oral argument should be scheduled soon (unless it is combined with Spirt and Peters--see below). At issue is whether the deferred compensation plan for Arizona state employees, which has as one of its options an annuity which pays more in monthly benefits to males than to similarly situated females violates Title VII's prohibition against sex discrimination in employment. In 1978 the Supreme Court decided that it was unlawful to require women to pay more for the same benefits (City of Los Angeles Water and Power v. Manhart); here women pay the same for smaller benefits. The Arizona plan also differs in being voluntary (the state compulsory basic retirement plan has sex-neutral benefits), in having a so-called non-discriminatory option (lump-sum payout) and in being operated by insurance companies, not directly by the employer itself. The decision below in Norris declared the plan in violation of Title VII (Ninth Circuit).

Spirt v. Long Island University and TIAA-CREF. Long Island University was ordered by the Second Circuit to quit providing a retirement plan which, like Arizona's, provides for smaller monthly benefits for women. LIU's plan is compulsory and has no "non-discriminatory" option. TIAA-CREF was also forbidden to use sex-segregated tables for all benefits for those retiring as of May 1980. LIU and TIAA-CREF have petitioned for the Supreme Court to take the case, but no decision has been reached as to whether it will. If they do take Spirt, Norris may be held over and both argued in the fall.

Peters v. Wayne State and TIAA-CREF. Same facts as Spirt except that the TIAA plan was optional. The Sixth Circuit reached the opposite conclusion to that of the Second Circuit in Spirt. The Supreme Court has also not decided whether to hear this case.

It should be noted that these three cases have been the subject of intense lobbying efforts with the Reagan administration. The EEOC was on the side of equal benefits for

women in the circuit courts in each case, as amicus in Norris and Peters and as a party in Spirt. A coalition of women's groups, civil rights groups, AAUP,NEA, AFT, and other labor groups worked very hard to keep the administration from taking the opposite position before the Supreme Court. Insurers were lobbying equally hard on the other side. We were successful in keeping the government out of Norris and Peters and in on the right side in Spirt, but not without great difficulty. In Washington this was viewed as a great triumph for women (which it was, given the administration's actions on other matters), based on the fact that they are very worried about the "gender gap." (We did make a convincing legal argument as well.)

Pensions and insurance are a hot issue with a number of potential Presidential candidates wanting to do something to look good with women. The President was supposed to come out in favor of non-discrimination in insurance in the State of the Union address; his statement was watered down to cover only pensions and the press release which was supposed to explain exactly what he meant was complete nonsense. Eagle Forum (Phyllis Schlafly's group), it is rumored, tried to get even the reference to pensions out of the speech but failed.

There are identical bills before the House (H.R. 100) and Senate (S. 372) on which I have testified. They would eliminate discrimination on the basis of sex, race, national origin, and religion in all forms of insurance. WEAL (805 15th Street, N.W., Suite 822, Washington, D.C., 20005) has a good fact sheet on insurance discrimination. Also, write your Congressman or Senator to support these bills.

If you are interested to know how the proposed Social Security reforms would affect women, WEAL also has some information on that. (Ask for my testimony before the House Ways and Means Committee as well as fact sheets). Also, the Economic Equity Act includes the non-discrimination in insurance provisions of H.R. 100 and S. 372 as well as a number of other measures designed to provide better economic breaks for women.

Penk v. Oregon State Board of Higher Education. The faculty women at all the Oregon state institutions are suing under Title VII for equity in pay, promotions, tenure and other matters. The case is important because of its state-wide scope. Penk is a mathematician at Western Oregon State College. This case will go to trial in the fall. It is in some sense a successor case to Hein v. Oregon College of Education (now Western Oregon State College). In that case, six plaintiffs won pay adjustments under the Equal Pay Act. It has been appealed to the Ninth Circuit, and oral argument will probably be in May.

Newberg v. Board of Education. Several years ago in Vorchheimer v. Board of Education, the Supreme Court left standing (by a 4-4 vote) the Third Circuit's decision that Philadelphia could maintain sex-segregated public schools for academically-gifted students. That case was tried on Federal constitutional grounds with the premise (effective for race in Brown v. Board of Education in 1954) that separate is inherently unequal. The Newberg case is being tried under the Pennsylvania state ERA, and part of the strategy is to show that the schools are not only separate but are unequal. In particular, the claim is that the mathematics and computer science programs at Girls High School are inferior to those at Central High School (for boys).

There are also a number of Title IX cases working their way through the courts. For example, Grove City raises the question of whether direct aid to students (BEOG) brings the institution under Title IX's requirement for the school to sign an affirmation of non-discrimination. For a long time the issue of whether employment is covered by Title IX was open, but North Haven established that it is. The fundamental unresolved issue, which is not currently before the Supreme Court but which probably will be is how program-specific Title IX is. For example, if a school receives funds only for research in physics, must its athletic programs be non-discriminatory? What if the students get federal aid and their tuition goes into general funds of the institution, but specially segregated funds are used for athletics?--and many variations on the theme.

NWSA '83

The National Women's Studies Association was founded in 1977 to further the social, political, and professional development of women's studies throughout the country, at every educational level and in every educational setting. Its membership consists of individuals, academic and community-based programs, projects and groups interested or involved in feminist education. NWSA's aims include the elimination of oppression and discrimination based on sex, race, age, class, religion, and sexual orientation, as well as other barriers to human liberation inherent in the social structure.

The 1983 National Women's Studies Association Convention, "Feminist Education: Quality and Equality," will be held at The Ohio State University in Columbus, Ohio, June 26-30, 1983. We have scheduled four plenary sessions involving speakers with expertise on subjects crucial to the nature and direction of feminist studies and the feminist agenda in the 1980's. The conference will open Sunday evening with a keynote address by Deirdre English, editor of Mother Jones, entitled "After the Leap: Feminism and the Fears of the 80's." Monday morning's plenary will be a panel discussion entitled, "Autonomy/Integration: The Future of Women's Studies," focusing on the implications of "mainstreaming" the feminist curriculum and the simultaneous development of self-contained, interdisciplinary women's studies programs as centers of feminist inquiry. On Tuesday morning, conference participants will assemble again to continue our response to racism in a plenary session entitled, "Racism and Anti-Semitism in the Women's Movement." And for the closing plenary session, there will be a discussion on "The International Feminization of Poverty." There will be over 200 scheduled panels, workshops, and presentations by individuals.

Three major cultural and entertainment events are planned for NWSA '83. "Women's Voices," a series of poetry and fiction readings by some of the most talented authors writing today, will be scheduled on each evening of the conference and will feature the following authors: Margaret Atwood, E.M. Broner, Nikki Giovanni, June Jordan, Paule Marshall, Cherrie Moraga, Marge Piercy, and May Sarton. On Monday evening there will be a feminist concert featuring Mary Watkins and Alive!, with Kate Clinton as MC. And on Tuesday evening, NWSA '83 will present an original play by Kim Hines, "Just Remember My Name," which deals with the issue of racism and feminism and is scheduled to complement Tuesday's plenary session on Racism and Anti-Semitism. There will be special appearances by Nicole Hollander, feminist cartoonist; Tatiana Mamanova, exiled Soviet feminist; Rabbi Lynn Gottlieb, reinterpreter of traditional religion; and, in conjunction with the NWSA '83 Film Program, Michelle Citron, independent filmmaker, who will present and discuss her work with B. Ruby Rich, feminist film critic.

Write: NWSA '83 Registration, Center for Women's Studies, The Ohio State University, 207 Dulles Hall, 230 West 17th Avenue, Columbus, OH 43210.

OF POSSIBLE INTEREST

The Center for Women Scholars of America is proud to announce a new resource book that examines key issues concerning women scholars. Also included are sections of information on advocacy organizations, professional caucuses and committees for women scholars, women's research and resource centers, survival aids and information, financial/legal resources, and 15 selected topical bibliographies. The Handbook is available from the Center for Women Scholars, 1925 Page Street, San Francisco, CA 94117 at $10.95 per copy (plus $1.50 postage/handling and $.70 state tax for California residents). The full title is Handbook for Women Scholars: Strategies for Success.

Women's Studies, Temple University Press, Broad & Oxford Streets, Philadelphia, PA 19122.

Publications on Women, International Labor Office, Sales Office Suite 330WM, 1750 New York Ave., N.W., Washington, DC 20006.

International Journal of Women's Studies, 4626 St. Catherine St. West, Montreal, Quebec, Canada H3Z 1S3.

Eden Press, University of Toronto Press, 33 East Tupper St., Buffalo, NY 14203 or 5201 Dufferin St., Downsview, Ontario, Canada M3H 5T8.

Feminist Studies, journal published three times a year, Women's Studies Programs, University of Maryland, College Park, MD 20742.

Sex Roles and Alternative Lifestyles, SAGE Publications, Inc., P.O. Box 5024, Beverly Hills, CA 90210.

DEADLINES: May 24 for July-Aug., July 22 for Sept.-Oct., Sept. 23 for Nov.-Dec.
AD DEADLINES: June 3 for July-Aug., Aug. 5 for Sept.-Oct., Oct. 5 for Nov.-Dec.
ADDRESSES: Send all 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 institutional advertisers below are Affirmative Action/Equal Opportunity employers.

University of California, Riverside. Dept. of Mathematics, Riverside, CA 92521. Albert R. Stralka, Chmn. (1) One tenure-track Asst. Professorship. Prefer person who works in some aspect of topology, and can function in both Mathematics and Computer Science programs; however, will consider applicants in all research areas within Mathematics or Computer Science. Require significant research ability & evidence of good teaching ability. (2) Two full-time temporary Asst. Professorships with some flexibility in salary. Will consider applicants from all research areas within Mathematics or Computer Science with high potential in both research & teaching. One position is extendable to a second year when it is mutually agreeable. (3) Two part-time positions for persons capable of teaching a wide variety of courses in Math & comp. sci. Send resume, publications list, & a few selected reprints or preprints & have 3 letters of recommendation sent to Chmn.

Western Illinois University. Dept of Mathematics, Macomb, IL 61455. Dr. Larry Morley, Chairperson. Tenure track & visiting positions anticipated to begin 8/1983. Required: Ph.D. or equivalent in some area of math sciences, operations research or math education. Teaching load: 3 courses. Demonstration of commitment to excellence in teaching & continuing research is expected. Send application to Chairperson. Positions subject to funding.

University of Kansas. School of Business, Lawrence, KS 66045. Visiting position for 1983-84 in Operations Research at Asst. Professor level. May consider candidates at ranks of Visiting Assoc. Prof. & Visiting Prof. Candidates should be capable of graduate-level teaching & research in area such as Mathematical Programming, Statistics, Decision Theory, Simulation or Stochastic Processes. Teaching at undergraduate level is also expected. At Visiting Asst. Professor rank completion by 1983-84 of a Ph.D., D.B.A., or other doctorate in Operations Research, Statistics or a related field is preferred. Salary $25,000 and up. Inquiries should be addressed to Charles Krider, 202 Summerfield Hall, School of Business, University of KS, Lawrence, KS 66045. (913) 864-3795

Smith College. Dept. of Mathematics, Northampton, MA 01063. David W. Cohen, Chair. Asst. Professorship carrying a reduced teaching load of two courses per semester for 1983-84 academic year. Required: Ph.D. in mathematics (any field) and interest in both teaching & research. Send resume & at least 3 letters of reference to Chair.

U Mass/ Boston. Mathematical Sciences. Growing undergraduate & master's program in Comp. Sci. Rank & salary open for regular faculty positions and directorship of the master's program. Long term, part-time positions available as complement to part-time work in industry. Positions subject to availability of funds. Dept operates 2 PDP-11/34 and 2 VAX-11/750 computers. University operates Harris & Cyber computers. Software engineering emphasized with mathematics & computer science integrated in the curriculum. Current faculty research interests include networking, text processing, formal languages & compilers. Lively local computer industry and academic milieu. Applicants should have Ph.D. (completed or expected) in Computer Science or equivalent experience, research experience or potential in Computer Science, interest in teaching. Please send resume to Prof. Ethan Bolker, Dept of Math Sciences, U Mass/Boston, Harbor Campus, Boston, MA 02125.

Alma College. Dept of Math & Comp Sci., Alma, MI 48801. Dr. Melvin Nyman, Chmn. Tenure track position in Comp Sci 8/1983. Required: Master's Degree in Comp Sci plus experience or Master's Degree in Comp Sci plus Ph.D. in math sciences preferred; Commitment to teaching at undergraduate level. Background and interests must be compatible with curricular needs of Dept. Salary & rank commensurate with education & experience. Please forward vitae, transcripts & 3 reference names immediately to Chmn. Applications will be considered until position is filled.

Oakland University. Dept of Math Sciences, Rochester, MI 48063. One or more Asst. Professorships Fall, 1983. All specialties invited. Prefer those with applied math, operations research, combinatorics, and statistics. Duties include research & teaching (2 courses/semester). Salary negotiable. Generous fringe benefits. Ph.D. required. Position(s) subject to funding. Send vita & 3 letters of reference to department's Personnel Committee.

Western Michigan University. Dept of Math, Kalamazoo, MI 49008. Dr. James H. Powell, Chairperson. Tenure track Asst Professorship expected Fall, 1983. Duties: teach 2 grad/undergrad courses, research, possible consulting. Competitive salary. Excellent fringe benefits. Contact Chairperson.

SUNY - Stony Brook. Dept of Applied Math & Stat, Stony Brook, N.Y. 11794. Prof. Alan Tucker, Chmn. (1) Senior & junior positions in operations research, applications experience very important; and (2) senior & junior positions in statistics; theoretical or applied. Distinguished research record needed for senior positions; evidence of research potential needed for junior positions. Send resume to Chairman.

State University College at Buffalo. Math Dept., 1300 Elmwood Ave., Buffalo,N.Y. 14222. Dr. Ruth E. Heintz, Chair. Tenure track Asst Professorship, Fall, 1983, to teach undergraduate math courses. Earned doctorate with background in math sciences. Must have teaching ability & desire to contribute to new program in math/sciences. Need a working knowledge of programming languages, numerical analysis, linear programming networks etc. Salary about $20,000 depending on qualifications. By 5/1/83 send application, resume, transcripts & 3 letters of recommendation to Chair.

Bucknell University. Dept of Math, Lewisburg, PA 17837. David S. Ray, Head. At least one position for 9/1983 in any area of math or statistics. Required: Ph.D. (or nearly so), strong commitment to teaching & research. Some experience desired, but not vital. Potentially tenurable. By 5/31/83 send curriculum vitae, a graduate transcript & 3 letters of recommendation to Head.

Villanova University. Dept of Math Sciences, Villanova, PA 19085. Dr. Frederick Hartmann, Chmn. Asst or Assoc Professorship Fall, 1983. Several appts will be made for up to 3 years with possibility of tenure track. Required: Ph.D. & strong interest in undergraduate & graduate teaching as well as mathematical research. Expertise in comp sci desirable. Apply to Chmn.

University of Texas, San Antonio. Div of Math, Computer Science & Systems Design, San Antonio, TX 78285. Prof Stanley G. Wayment, Director. Several tenure track Asst/Assoc Professorships 9/1983. Required: Ph.D. & an interest in teaching & research. Applicants in mathematics, statistics, computer science, systems design or mathematics education will be considered. Send vita to Director.

Marshall University. Dept of Mathematics, Huntington, W.V. 25701. John S. Lancaster, Chmn. One year temporary position at Instructor or Asst. Professor level. Required: Master's Degree in math; doctorate preferred. Duties: teaching 12-13 credit hours per semester beginning 9/1983. By 6/13/83 send resume, copies of transcripts & 3 letters of reference c/o Search Committee.

ASSOCIATION FOR WOMEN IN MATHEMATICS
MEMBERSHIP APPLICATION

Name and
Address _____

_____

_____

_____

_____

Institutional affiliation, if any _____

_____

The AWM membership year is October 1 to October 1.

New_____ Renewal _____

Individual $15.00 _____

Family $20.00 _____

Retired, Student, Unemployed $5.00 _____

New Member Rate: Individual,
for each of first 2 years $10.00 _____

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

Contributing Member $20.00 or more in addition to regular dues_____

Make checks payable to: ASSOCIATION FOR WOMEN IN MATHEMATICS

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

Association for Women in Mathematics
P. O. Box 178, Wellesley College
Wellesley, MA 02181
May-June 1983