FILE

ASSOCIATION FOR WOMEN IN MATHEMATICS
NEWSLETTER

Volume 7, Number 4 July-August-September 1977

AWM SUMMER MEETING
at joint AMS-MAA summer meeting
University of Washington, Seattle

Monday, August 15

4:00 - 5:00 p.m.
AWM open executive committee meeting and
informal panel discussion

organizers: Pat Kenschaft
Bettye Anne Case

Room 409
Guggenheim Hall

7:30 - 9:00 p.m.
AWM panel: alternatives to academic employment
for mathematicians

organizer: Lenore Blum

Room 120
Kane Hall

9:30 p.m.
Party!

room to be arranged.

in front of the children - that they should be supportive because it would not work unless they were supportive and I wanted it to work. However, there were times when I couldn't avoid the children hearing negative things about my commuting. I think that probably the most important choice I made at the time was that as much as possible I would not allow the children to hear negative things about what I was doing. I would let them work it out themselves, and it's worked out very well.

My own feelings about the arrangement are that I'm very happy. I like my job very much and I wouldn't leave it to take a job near where my husband is employed unless it was a job I liked as much. I have not actively sought employment near my husband and I don't think I will unless I have to seek employment again (I'm not tenured). If I seek employment again I will probably start near my home but I'm not going to insist on being there. I would do this again, I would probably even do it with a longer commute. A weekend commute is perfectly viable for me forever. Without any thought about it at all I would take a job if it were only a weekend commute.

- - - - - - - -

Elizabeth Berman

I speak to you as a woman who lost an academic position. I have a Ph.D. in mathematics and nine publications, and a consultant from the Mathematical Association of America investigated and commended my work. But still I lost the job. How can you keep your job? What can you do if you lose it?

The best advice I can give you is to learn to handle feelings. Here are some examples of situations requiring delicate handling.

Suppose I am in an administrator's office. He says to me, "You irritate me. You irritate many people. How do you get along with your husband?" I can reply calmly, "There is some truth in what you say. Sometimes I am irritating. My husband says so." By agreeing with the administrator's accusation, I disarm him. And how can I disagree? Everybody is sometimes irritating. But if I do not have enough presence of mind for such a reply, I can say, "I am offended. Could we postpone this discussion?" If I come back in a few weeks, the man may be more civilized.

Here is another example of parrying the boss. Suppose he says to me, "The students have been complaining about you. The students say you are terrible." I can ask peacefully, "How many students come in to complain?" When I ask a quantitative question, mathematics exerts its usual uplifting, rationalizing influence. His anger must subside a little in order for him to think of the answer to my question. He might say, "Well, they didn't actually come in. I overheard them." Or he might say, "Three or four students came in. It wasn't so much the quantity as the quality. Very high quality students were complaining about you."

I can go on asking calm but leading questions. "Did you speak to the students privately and separately? Did you invite them to confer with me? Is it possible that their hostility is related to the fact that I teach an unpopular subject, or that I am short, or that I am a woman? Is it possible that the students need psychological counseling? Do they have some responsibility for their feelings about me, or is it entirely my responsibility to please them?" Questions may get my point across better than direct assertions could.

Here are some examples of handling students. A student comes to my office and confesses, "I'm no good at mathematics. I've never been good, since I was a child." I can say, "When I was a child I thought I was no good at ice skating. I could barely stand up. I felt clumsy. But when I grew up I got some sharp figure skates and learned to skate." I don't say, "I think you have some ability in mathematics. You can succeed if you will just try hard." Such remarks are judgemental and condescending. I simply tell my story and let the student draw the inference. There is another message which I can put in words or communicate indirectly: "I like you. I care about you. I want you to do well."

Once I invited a psychologist from the college counseling office to watch me teach. He commended me, but asked, "How do you feel about those two students who sit at the back of the room and talk all the time?" I said, "I guess I don't like it." He did not say, "Why don't you do womething about it?" But I figured out what to do. If the situation comes up again I will speak to the students privately and separately. I will say, "When you talk while I am talking, I feel uncomfortable. I think other people feel uncomfortable. I want you to be quiet and listen. If you want to make a comment, raise your hand and I will give you the floor."

How can you learn to handle feelings? You can read books on psychology and psychiatry. Take an assertiveness training class - rehearse your response to aggression. If you rehearse

AWM PANEL: CHOOSING OUR LIVES

(The following are edited transcripts of a panel discussion at the St. Louis AWM meeting, in January, 1977. The topic was: choosing our lives. The panelists were Judy Green, Rutgers University, Camden, N.J., who spoke on having a two-city marriage; Elizabeth Berman, University of Missouri, Kansas City, who spoke on losing a job; and Judy Roitman, Wellesley College, who spoke on deciding to leave her current job and looking for another one.)

Judy Green

I chose a two-city existence. I chose it insofar as I couldn't get a job in the city where my husband had a job. He is employed in a large metropolitan area but there wasn't any academic job there for me when I got my degree. So I applied all over the country, mainly trying to get a job within commuting distance, and I am now commuting 150 miles. I leave Monday mornings and come back Friday afternoons. The department has been nice to me insofar as it will arrange my schedule so my first class on Monday is not early and my last class on Friday is not late.

I made the choice to commute because I knew I would be unhappy unemployed. I knew that about myself. I had never been unemployed or not a student - if I was not going to school I was teaching. I was very happy teaching and I wanted to continue in the academic profession.

When I made the choice my children were five and seven and a half, and I did not give them any input into the choice. My perception of what they thought of my commuting was that they were not overjoyed that I was doing it. However I think they understood that the summer I was looking for a job I was not very happy and that this was likely to continue if I was going to be unemployed. They also saw that I became much happier once I had a job I liked.

Until asked to be on this panel, I never specifically asked them what they thought about the choice. Now after four and a half years I thought they were settled enough in it so it would be alright to ask them. They're now nine and a half and almost twelve; the older one is a girl in junior high and the younger one is a boy.

I asked them what they thought of my commuting, and - nothing. They didn't have anything to say. So I fed them some questions. Most of the questions they didn't answer. The only one they answered with any amount of detail at all was: does it bother you that your family life is different from other families' lives? (I had thought that might really bother them.) My daughter said: no, it was just like one of her friends' families whose father was always away. My son, who is the younger one, said: my friends have adjusted to it. The only somewhat negative comment I got was from my daughter who said that when she fights with my husband she doesn't have anyone to take her side. I asked them if they missed me. At first they said no, then they said sometimes. That was essentially all they had to say. I think that is probably their opinion of how it is going.

The actual mechanics of who takes care of the kids, things like that, is somewhat unusual since my husband is the one who takes care of them. He has an academic job with a low teaching load so we're lucky. The first year when the kids were young we had babysitters come in after school and on evenings when my husband wanted to go out. The second year their standard baby-sitters happened to be going off to college and they didn't want to break in new babysitters so they said they would have babysitters only in the evenings. By the third year when the youngest one was seven and the older one was nine and a half they said: no more babysitters. So they don't have babysitters. They're very independent children because of this and I think it's very good for them. To a large extent they take care of themselves. My husband does try to get home early a number of days a week and he says he has a typical suburban mother's existence with driving carpools, making dinner, etc. Most husbands don't have that option. In that sense ours is not quite the typical situation where if you're going to commute you will have to hire someone to take care of the children.

However, I think that type of mechanics isn't really relevant. I also don't think the fact that my husband is in academic life is what makes it work although it does make it easier.

What I think was more important was how I reacted to other people. Alot of people thought what I was doing was just awful. I had young children what I started and there was much how-can-you-do-that-to-the-children type of thing. I insisted that relatives not be openly critical

your act well, you may never have to perform it. Your confidence and strength may win respect.

You may wish to consult the psychologists in the college counseling office. They are trained, they know your situation, and they don't blab. Go to them and tell them your problems. Notice how they talk to you. You can talk in the same gentle, open way to students and colleagues. You may wish to consult a psychiatrist. If you are undergoing an ordeal, a psychiatrist can help you.

Visiting a psychologist or psychiatrist is one way to safeguard your mental health. There are other ways. Have something you do for fun. I play the flute and piccolo in an orchestra. The people there are glad to see me. The beautiful music takes my mind off my troubles.

Safeguarding your mental health is of primary importance. It is also important to be a good public relations agent for yourself. Send good news about yourself to all the college newspapers. Figure out who the powerful people are. Influence them. Invite them to watch you teach. Send them copies of your papers and reports of talks you give. Invite colleagues and formter students to write letters in your behalf for your file. Such letters may counteract derogatory falsehood entering your file behind your back. Once a year make a formal presentation to your boss about what a good job you are doing. Try to do this someplace other than his office. In his office he can sit behind his big desk and talk on the telephone. Elsewhere you may feel more relaxed.

Know your rights. Read your college affirmative action paln. Call, write, or visit the government agencies that can help you. They may have branches in your city - the Equal Employment Opportunity Commission has thirty-two district offices. Other agencies include the Office for Civil Rights, the Women's Bureau, and state and local human rights agencies. See the list of free literature at the end of this article.

Join the organizations that can help you - the American Association of University Professors, the American Mathematical Society, the Mathematical Association of America, and the Association for Women in Mathematics. The last group is the most sympathetic to women.

If you are gifted, well-trained, hard-working, and follow all the rules I have suggested, will success be yours? Maybe, but don't count on it. Table 1 shows the gloomy statistics.

TABLE I

Ratio of Women in United States Mathematics Faculty, Four-Year Colleges and Universities

Type	1972-1973	1976-1977
Instructor	28%	30%
Assistant Professor	9%	13%
Associate Professor	6%	6%
Professor	4%	4%

(Source of date: American Mathematical Society. 1972-73 was the first year they reported date by sex.)

Further statistics on women in mathematics come from the U.S. Department of Labor, Women's Bureau: in 1970 full-time male mathematicians had median salary of $15,000; women, $10,000 (The Earnings Gap Between Women and Men).

The statistics suggest that women are unlikely to be promoted. So if you are untenured, plan now what to do when you lose your job.

Now you may wish to consult a psychiatrist, if you have not already done so. It is traumatic to lose a job. Ask your family physician to recommend a psychiatrist. Keep up your health insurance. Studies by Rahe, Holmes, and others have shown that losing a job is a stressful life change, and many such changes predispose people to illness. Get a good lawyer. I don't know how to find a good lawyer - there are few skilled in higher education. I hope this association will investigate this problem. Perhaps we could have a legal insurance program. (A member of the audience, Ruth Silverman, suggested this procedure for finding a lawyer: go to a law school. Talk to the person who teaches courses on laws relating to sex. Ask that person to recommend a lawyer. Talk to women's groups and civil rights groups as well.)

Appeal to all the organizations I mentioned. Even if your appeal does not get your job back, you may help other women and enhance your self-respect.

Meanwhile, look diligently for another job. Visit the placement office at a university where you got a degree and ask their advice on how to look for a job.

I wish I could find a full-time academic position. But I have found a part-time job I enjoy. I am married with two children and do not want to move to another city. I have occupied most of my energy the last two years with writing a book. Academic Press will publish it. It is a joy to work with them. The book is entiteld Mathematics Revealed, a text in arithmetic, algebra and geometry for college students. My book appeals to the senses. Fig. 1, for example, is an illustration for the section on ratio and proportions.

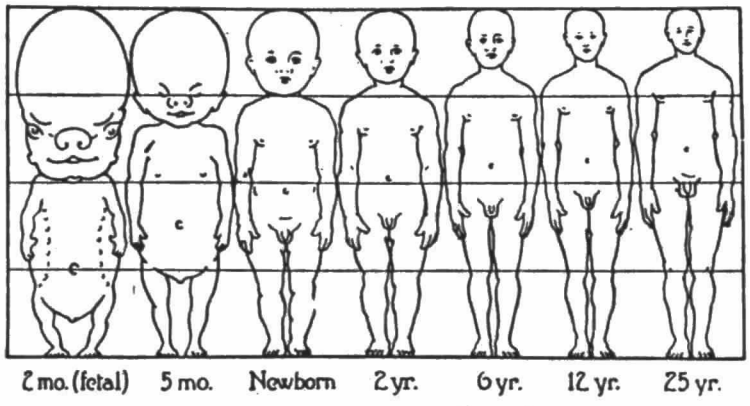

Fig. 1. Body Proportions Over Time.
(After C.H. Stratz, The Child's Body and Its Care.)

Let H be head length, and let B be body length. In the newborn baby, the proportion is H/B = 1/4. In the adult, the proportion is H/B = 1/8.

My book has alarming social statistics, such as in Table 2.

TABLE 2

Fully employed women continue to earn less then fully employed men of either white or minority races.

	1963		1973	
	White	Minority	White	Minority
Men	$6277	$4104	$11633	$8363
Women	$3723	$2368	$ 6544	$5772

Source: U.S. Department of Labor, Women's Bureau, from data published by Bureau of the Census, U.S. Department of Commerce.

You can ask students to figure the difference between women's earnings and men's earnings, or the ratio of women's earnings to men's earnings. The purpose is to make an invidious comparison. Students are more willing to do such problems than bland exercises like the difference between 63 oranges and 51 oranges.

The book has given me a sense of achievement. If you are the victim of discrimination, you can choose: bitterness, apathy, or achievement. The last is the healthiest. But individual achievement is not the answer to prejudice. There is systematic oppression; we need systematic reform. We can lobby for stronger laws and enforcement of laws now on the books. I hope we will see more opportunity for women in mathematics.

Bibliography

American Mathematical Society, Seventeenth annual survey. Notices of the AMS 23 (1973) 271-274.

_____, Twentieth annual Survey. Notices of the AMS 23 (1976) 313-316.

Elizabeth Berman. Mathematics Revealed. Academic Press, New York (1978)

Thomas H. Holmes and Richard R. Rahe, Social readjustment rating scale, Journal of Psychosomatic Research 11 (1967) 213-218.

Richard H. Rahe, Subjects' recent life change and their near future illness reports. Annals of Clinical Research 4 (1972) 250-265.

C.H. Stratz. Der Korper Kindes und seine Pflege (The Child's Body and its Care). 3rd ed. Enke, Stuttgart, Germany (1909).

U.S. Department of Health, Education and Welfare. Office for Civil Rights. Final Title IX Regulation Implementing Education Amendments of 1972: Prohibiting Sex Discrmination (1975). (Available from Office of Civil Rights, U.S. Department of Health, Education, and Welfare, Washington, D.C. 20201)

U.S. Department of Labor. Women's Bureau. Brief Highlights of Major Federal Laws and Orders on Sex Discrmination (1974).

_____. The Earnings Gap Between Women and Men (1975).

_____. Fully Employed Women Continue to Earn Less than Fully Employed Men of Either White or Minority Races (Chart, 1975).

_____. Publications of the Women's Bureau. Leaflet 10 (1975).

_____. A Working Woman's Guide to Her Job Rights. Leaflet 55 (Revised, 1975).

To request the above literature, write to Women's Breau, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

Equal Employment Opportunity Commission. EEOC at a Glance (1976).

_____. EEOC Title VII in Print (1976). (Publications list.)

_____. Job Discrimination - Laws and Rules You Should Know (ND).

_____. Know Your Rights! What You Should Know About Equal Employment Opportunity (1976).

_____. Questions and Answers Concerning theEEOC Guidelines on Discrimination Because of Sex (1975).

To request the above literature, write to Publications Unit, EEOC, 2401 E St. NW, Washington D.C. 20506.

I recommend the following books on psychology, psychiatry, and women's rights.

Joan Abramson. The Invisible Woman: Discrimination in the Academic Profession, Jossey-Bass, San Francisco (1975).

Paul Ekman and Wallce V. Vriesen. Unmasking the Face. Prentice-Hall, Englewood Cliffs, N.J. (1975). Fascinating books with photographs on how to read emotions.

Sigmund Freud. The Interpretation of Dreams. Transl. by James Stacy. Avon, N.Y. (1967). This is a seminal work. Mathematicians may enjoy the analytical approach. The Stachey translation is recommended over the Brill translation.

Haim Ginott. Teacher and Child. Ed. by Robert Marke. Macmillan, N.Y. (1972). Specific suggestions on how to handle students.

William Glasser. The Identity Society. Harper and Row, N.Y. (1975).

_____. Schools Without Failure. Haper and Row, N.Y. (1969).

Vivian Gornick and Barbara K. Moran, ed. Woman in Sexist Society: Studies in Power and Powerlessness. Basic Books, N.Y. (1971)

Elizabeth Janeway. Man's World, Woman's Place. William Morrow and Co., N.Y. (1971).

Carl Jung, ed. Man and His Symbols. Doubleday, N.Y. (1964). Jung and Freud were the founders of modern psychiatry. This book is more readable than most of Jung and has interesting descriptions of mathematical symbols.

Peter Maris. Loss and Change. Pantheon Books. (1974).

Rollow May. Love and Will. Norton, N.Y. (1964).

Kate Millet. Sexual Politics. Avon, N.Y. (1971).

Clara C. Park and Leon N. Shapiro. You Are Not Alone. Little, Brown and Co., Waltham, Mass. (1976). Guide to emotional problems, mental illness, getting professional help. Available in paperback from Consumers Union, Orangeburg, N.Y. 10962. $6 postpaid.

Manuel J. Smith. When I Say No, I Feel Guilty. Bantam Books, N.Y. (1975). Incisive, often amusing guide to assertiveness.

Judith Stacey, Susan Breau, and Joan Daniels, ed. And Jill Came Tumbling After: Sexism in American Education. Dell, N.Y. (1974).

- - - - - - - -

Judy Roitman

What I have to say comes from comparing my experience in making the decision to leave my job and looking for another one now, and what I went through when I first got my degree and was looking for jobs then. The difference between the two times and the two states of mind is great, and I've learned a few things in the process.

The main thing I learned - and this has to do with my decision not to stay where I was, as well as the way I'm reacting to looking for a job - is a sense of my own worth and integrity. When I first got my degree I was filled with ideas of my own incompetence and somehow had the idea that this was all some sort of trick. When I first passed my qualifying exams I didn't really believe I had passed them; I didn't believe it until a year and a half later when one of my examiners made a comment at a party. I had the same idea that my degree was just a sleight-of-hand thing. I thought I wasn't good enough and I should grab any job that came along. Also, I hadn't really thought about what mathematics meant to me, where I fit into the mathematical community, what it was that I wanted to do with it. I was totally passive, applying for 300 jobs in a great piece of overkill, and driving the secretaries crazy.

I took the first job that came along because it was a job, and it looked good on paper - possibilities of tenure, things like that. Everybody told me to take it. But when I'd gone for my interview there, I'd known it was wrong for me. The atmosphere wasn't right, nothing I could put my finger on. It didn't fit me and I didn't fit it. But I didn't have the courage and the sense of myself to say: this isn't what I want.

I think it's very important to have some sense of who you are in this community. Whether our main interest is teaching, or research, or applications, or being administrators and managers, we have to look honestly at who we are. Because there are strong counter-pressures on us. There's the status/prestige thing - being a researcher at MIT is supposed to be better than teaching disadvantaged kids in elementary school. So alot of people who really want to teach feel pressured into taking research-oriented jobs. Then there's the reverse pressure, which happened to me, where the job pushed me away from research and towards teaching. On paper it looked like there was time for research, for haning out at MIT and Harvard, but the unspoken understanding was that you shouldn't put that stuff first, not even a close second.

So almost the minute I got there I realized it wasn't what I wanted, and when the time came for my contract to be renewed I asked that it not be. I made the decision that I would rather leave the academic mathematical community if I couldn't get what I wanted, that I was willing to face the outside world - that terrible place with all those unemployed people - and find another, possibly less rewarding career. I was too unhappy where I was.

Because we're all mathematicians we tend to forget the jobs we have can be very different, that we could be happy in one sort of job and absolutely miserable in another. That they're both called mathematicians doesn't make them similar. This is what I found.

So there I was, on the job market through my own foolishness and craziness. Of course I got depressed, I got crazy, I got freaked out. This fall when I sent out my applications it was with a sinking stomach and a sad heart. I imagined my future as a tremendous black wall. It was called June. There was this wall in front of me and I didn't know what was on the other side. For all I knew this wall was hiding a cliff, this cliff was deep, and I was going to fall into it. This is the image I had. And I looked around me at all my friends looking for jobs and they didn't look as upset as I felt. So I thought there really must be something wrong with me to feel as bad as I did about it. Not only was I facing this horrible black hole in my universe into which I was about to fall - and God knows what was in it, the laws of physics didn't apply anymore - but I was also feeling bad for feeling bad, right?

So I was greatly cheered by a letter from a friend of mine. He was at a university where I knew I had very little chance, but I wrote to him anyway just to check. And he wrote back confirming my suspicions, and adding: I'm very sorry to hear you're going through this demoralizing and dehumanizing situation.

That was a wonderful thing to hear. It reminded me that of course I was feeling bad. I was going through a demoralizing and dehumanizing situation. There would be something wrong with me if I didn't feel bad. I immediately felt much better.

The fact that so many of us are going through these pressures does not make these pressures less than inordinate. These pressures are almost obscene.

At this meeting I've been talking to many of my friends who are looking for jobs. We have a great solidarity with each other. We tell each other about openings, we're honest with each other about our interviews. I don't feel that we're cutting each other's throats. It feels like we're all in this together.

One of my friends was telling me how angry he was. He said: I did everything I was supposed to do. I went to school, I wrote a really good thesis. I do pretty good research - not great, but I'm really good. I teach well. I do everything I'm supposed to do. I work hard. I do everything I'm supposed to do and there is no guarantee of a living, no guarantee I can keep my family together. Here I am, doing everything that's asked of me, and even though I do everything that's asked of me I may have no job.

Another friend said that the thing she felt most strongly was being denied her sense of continuity. That somehow every human being had the right to the potential for the continuity of shelter, the continuity of friendships, and the continuity of simple financial support. We don't have that sort of continuity. We can't assume that somehow these things will be taken care of.

The statistics. A recent issue of the Notices listed ranks I, II, and III universities (they don't bother with IV and V). One third of the people leaving jobs at rank I institutions had not found U.S. academic employment. One half of the people who were leaving rank II and III institutions - these are all institutions with graduate schools - had not found U.S. academic employment. The survey was informal, maybe some of these people found jobs subsequently, but that's the basic situation. The pigeonhole principle says we aren't all going to be in academia next year. How can we deal with it?

My response was to think very seriously about what I was going to do if I didn't get a job. To make that black hole somehow transparent. Untrained for a non-academic career, I felt that my options were less of career than of place. My friendships and relationships are extremely important, so my decision was that if I don't get a job I like I'll go back to Berkeley where many of my friends are, where I still feel part of the community, and then see what happens.

That was an important decision. I have some sense that my world is not going to fall in, that I am independent of the job market. I don't have to take any job offered to me just because it involves mathematics. I have a viable option.

So here I am, possibly on the brink of leaving the mathematical community. Some people in this position work like mad. My response has been not to work at all. Research takes alot of my energy. I'm in a situation where I don't know if I'll be able to continue doing it. I can't throw myself into something that may fizzle out on me soon. It's hard to care about new problems. People come and say: hey there's this great problem! And I say: annh, so what. I discovered that other people in my position, even people I greatly respect, also feel that way. So I'm reassured. If I manage to get the kind of job I want, then probably I'll go back to mathematics with the same care I had before. But I don't worry about it now.

The last point I want to make goes back to my feeling that I know what I want and won't take anything else. Now when I go for interviews I'm interviewing them much more than they're interviewing me. They have my vita, they have my letters. They know who I am. What am I going to tell them that they don't already know? But I have a right to ask them all sort of questions, and I don't have to pretend I like everything they say. I have the freedom to say: I'm not interested in your job thank you. Saying this doesn't hurt me, because there's no point in taking a job in which I'm unhappy. I didn't know that three years ago.

* * * * * * * * * * * * * * * *

TWO FLYERS of note are the Mathematical Association of America's booklet THE MATH IN HIGH SCHOOL YOU'LL NEED FOR COLLEGE, and the sheet WHAT MATHEMATICS SHOULD YOU TAKE TO GET READY FOR UCLA (prepared by the UCLA Math department, Office of Undergraduate Affairs, and Campus Office of Relations with Schools).

* * * * * * * * * * * * * * * *

WHAT IS THE CONFERENCE BOARD OF THE MATHEMATICAL SCIENCES?

by Truman Botts

(Ed. note: The following was sent by the CBMS to all its constituent organizations, of which the AWM is one. Truman Botts is the executive director of the CBMS.)

The Conference Board of the Mathematical Sciences (CBMS) is an organization of professional societies in the mathematical sciences serving two main purposes: (1) to provide a two-way channel of communication between the professional mathematical community represented by its member societies and the relevant Government and other organizations on the Washington scene; and (2) to function as a forum and focus for issues andprojects of concern to several or all of its member societies. CBMS has two kinds of membership, constituent and affiliate. In general, its constituent-member societies have primarily mathematical interests, while its affiliate-member societies have only partly mathematical interests or have trown up around special constituencies or areas of application. AT present there are six constituent members: the American Mathematical Society (AMS), the Association for Symbolic Logic (ASL), the Institute of Mathematical Statistics (IMS), the Mathematical Association of America (MAA), the National Council of Teachers of Mathematics (NCTM), and the Society for Industrial and Applied Mathematics (SIAM). There are also six affiliate members: the American Statistical Association (ASA), the Association for Computing Machinery (ACM), the Association for Women in Mathematics (AWM), the Operations Research Society of America (ORSA), the Society of Actuaries (SA), and the Institute of Management Sciences (TIMS). The Conference Board has its headquarters in Washington, D.C., where it was incorporated as a non-profit educational organization in 1960. Since the fall of 1967 its headquarters office has been located at 832 Joseph Henry Building, 2100 Pennsylvania Ave NW, Washington, D.C. 20037.

The CBMS role in communication between the professional mathematical community and organizations on the Washington scene is accomplished in part through direct contacts with agencies of the Federal Government and through representation on or liaison with such groups as the Committee of Scientific Society Presidents, the American Association for the Advancement of Science, the American Council on Education, the Scientific Manpower Commission, and the Office of Mathematical Sciences of the National Research Council. A principal vehicle for communication with its professional constituency is the Conference Board's Newsletter, published in four sixteen-page issues per year. The Newsletter features Washington news of interest to the broad mathematical community, notices and reports regarding national and international mathematical events, information and data on fellowships and other opportunities in mathematical research and education, manpower surveys and studies relevant for the mathematical sciences, and editorials and position papers on issues of concern to professionals in the mathematical sciences. Subscriptions to the Newsletter are available from CBMS at $4.00 per year for individuals belonging to one or more member societies of CBMS and $8.00 per year for institutions and other individuals.

The Conference Board's forum role is implemented through its semi-annual Council meetings and through the public panel discussion on some subject of interest that it regularly sponsors each year at the joint winter mathematics meeting of AMS and MAA. CBMS plans to sponsor additional such panel discussions at national meetings of its other member societies. As noted above, the editorials and position papers that appear from time to time in the CBMS Newsletter also contribute to this forum role. Since 1969, a major CBMS project of broad interest has been its management, under contract with the National Science Foundation, of an annual program of eleven or twelve one-week Regional Conferences on subjects of current research interest in the mathematical sciences. Host institutions receiving NSF grants for such Regional Conferences in any given year are normally announced in the spring issue of the CBMS Newsletter. Notices of individual Regional Conferences also appear in other appropriate journals and in regional announcements by their host intitutions; application for participation is to the host institution concerned. Publication, by AMS or by SIAM, of monographs resulting from the Regional Conferences is arranged by CBMS. Other CBMS projects of broad interest have included a major study of information-service needs of the mathematical sciences; a series of surveys of undergraduate and graduate mathematical education, and a survey of school-level mathematical education; an earlier study of buildings and facilities for the mathematical sciences; and projects on public understanding of the mathematical sciences and their applications.

The historical antecedents of the Conference Board go back to 1942, when a War Policy Committee was formed by AMS and MAA with Rockefeller Foundation funds. This continued following World War II as a Policy Committee for Mathematics which by 1957 included all the present constituent members of CBMS. In 1958 it became the Conference Organization of the Mathematical Sciences with a formal constitution and by-laws and with a Washington headquarters office established in 1959 through a grant from the Carnegie Corporation to MAA. It was after its formal incorpoartion in 1960 in the District of Columbia as the Conference Board of the Mathematical Sciences that its present affiliate members joined: ACM in 1962; ORSA, SA and TIMS in 1966; and AWM in 1976.

* * * * * * * * * * * * * * * *

GENES AND GENDER

by Nancy Tooney

(The following first appeared in the March/April 1977 issue of the Newsletter of the Association for Women in Science. It appears here with their kind permission.)

The interrelationships between social and biological factors in the area of human behavior are very complex. Historically, the pendulum has swung between "biological" and "social" interpretations. During the late 19th and early 20th centuries, so-called "scientific" methods were used to demonstrate the inferiority of Blacks (and Asians and persons of Mediterranean ancestry) relative to Whites or northern European ancestry. Hierarchical differences between Blacks and Whites or between women and men generally were perceived to be natural and fitting. This was the period of Social Darwinism, Eugenics and the development of intelligence testing by Terman and others. Often, science and medicine tended to justify and support the established social order.

Although 19th century studies on relative brain mass of women vs. men, for example, are no longer taken seriously, the late 20th century has been a recrudescence of interest in finding "biological" bases for differences between Blacks and Whites, women and men. Witness the efforts of Herrnstein, Jensen, Shockley, E.O. Wilson and others. Behavior, supposedly sex-linked, often is analyzed to the disadvantage of women. The Genes and Gender Symposium held Saturday, 20 Jan. 1977 at the American Museum of Natural History explored in depth the question of biology as destiny. The symposium organizers (The Committee for Women in Science of the N.Y. Acadademy of Sciences, the Metropolitan N.Y. AWIS chapter and the Regional Women's Committee of the American Psychological Society) had hoped for a turnout of a hundred. Over three hundred and fifty people participated on a bitterly cold Saturday morning.

Ethel Tobach of the Dept. of Animal Behavior at the Museum chaired. Lee Ehrman, Dept. of Life Sciences at SUNY-Purchase gave a traditional overview of genetics and introduced the basic terminology of the field - concepts of mutation, heritability, genes, chromosomes, and so forth. Her discussion of various traits ranged from consideration of those that are primarily regulated by genotype to those that are influenced by environmental factors. She noted the invalidity of past practice of linking chromosomes to "antisocial" or "criminal" behavior. Paraphrasing from Ehrman and Parson's book The Genetics of Behavior on the subject of behavior - in man (sic) we have little hope of environmental control and, generally, we do not have known behavioral genotypes.

Anne Briscoe, Dept. of Medicine, Columbia University Harlem Hospital Center and AWIS Past President discussed "Hormones and Gender". She began by defining the term "hormone" and noted that men and women have the same hormones, except for progesterone and chorionic gonadotrophin, which men lack. Both women and men have androgens (associated with male characteristics) and estrogens (associated with female characteristics). The differences are quantitative, not qualitative. Indeed, there is a wide normal range of variation in the level of components of each of these classes of hormones in both women and men. With reference to the question of alterations in female behavior in response to fluctuations in sex hormone levels, she observed that abnormalities in insulin or in thyroid hormone levels (hormones common to men and women) give more clearly demonstrable behavior changes in men and women than do changes in gonadal steroids.

Dorothy Burnham, Dept. of Bilogy, Empire State College spoke on "Biology and Gender". She commented that scientific methods are being used to support antediluvian attitudes. Just as "Biological" theories were used to justify slavery in the past, the status of women relative to men is justified today. The rationale has changed but the results are the same. In commenting on Goldberg's book The Inevitibility of Patriarchy - which promotes the idea that male hormones function to produce aggressive behavior that, in turn, leads to dominance and leadership - Burnham questioned by Blacks and women are not rewarded for aggressive behavior and, in fact, often are punished. She further noted that E.O. Wilson in his book Sociobiology shifted emphasis from aggression to altruism and proposed a genetic base for gender behavior because "the qualities - are so distinctively ineluctably human that they can be 'safely' classified as genetically based."

This analysis ignores the profound effects of social factors on behavior. Burnham feels that racism and sexism interact the reinforce each other. For example, the new hereditarian Shockley uses his reputation as a Nobel Laureate in Physics to promote an organization called the Foundation for Research and Education on Eugenics and Dysgenics which champions the inferiority of blacks and has suggested "voluntary" sterilization. The sterilization of women has become an acceptable solution to social problems in part because it is justified by so-called scientific research. She closed by suggesting that scientists must face the question of whether research that begins with the premise that women are inherently inferior can yield anything of lasting value to human society.

Eleanor Leacock, Dept. of Anthropology, CCNY began her discussion, "Society and Gender" by saying that one can select opposite extremes of generalization about women, cross-culturally. She gave several examples from American Indian, South American and African cultures where one author states that all power is vested in the men and the second author deduces that men and women have authority over particular spheres. Leacock observed that the bases for these contradictions are often due to (1) a lack of information about women, (2) ethnocentric projections of western societies on other societies and (3) failure to consider effects of colonialism and imperialism on cultures. Evidence is accumulating the human male dominance is not a universal. In this light, it is especially significant that E.O. Wilson in Sociobiology has made misstatements about the roles of men and women in hunter/gatherer societies. The film "Sociobiology: Doing What Comes Naturally", featuring Wilson, Trivers and DeVore of Harvard University, chose to compare human society to baboons because baboons best illustrate the "dominant male" theme. Leacock noted that chimps, our closer relatives, lack this pattern. She closed by urging that information presented at this symposium be made available to teachers and the general public to combat the determinastic approach typified by Sociobiology.

"Psychology and Gender" was the subject of Helen Block Lewis, author of Psychic War in Men and Women, Dept. of Psychology, Yale University. Her thesis is that our society is exploitative and injures the two sexes differently. Human culture is an important advance over primate culture because we have a greater scope for affectionateness as a force affecting behavior. The exploitativeness of society manifests itself in different attitudes about affectionateness for men and women. She noted that in most societies men have been the exploiters of women and children. Lewis suggested that mother-infant interactions have a direct bearing on gender, and children are shaped by the different attitudes towards male and female infants. She feels that there have been some studies to suggest that little girls are innately "more sensitive" than little boys. Since observer bias is difficult to control, one may question her assumption that there are different genetically related patterns of behavior in male vs. female infants, but her point that socity exploits men and women differently by reinforcing different patterns for each is well taken. Men are encouraged to be aggressive and the "affectionate" aspects of their behavior are not rewarded. Women are permitted to be affectionate, but affection is devalued by society.

The afternoon program consisted of several workshops in which people representing the various disciplines served as resources. One focus of discussion was the behavior of young infants. The role of environmental influence, including early mother-child social relationships was considered. The question of different patterns of mental illness in men and women was a second lively area of debate. The importance of checking these observations in other societies was noted. The effect of ionic imbalances or other chemical imbalances, possibly related to hormonal fluctuations was mentioed as having roles in mental illnesses. In discussing the issues of genetic differences, some felt it was important to see if there were innate differences, so that environments could be altered to promote equal development. Others emphasized that cultural facts can influence gene expression, and cause and effect are difficult to factor out.

The conference undoubtedly raised more questions than it answered. By its very nature, the subject has political as well as scientific overtones and at least some of the participants were aware that this issue cannot be dealt with at a purely "scientific" level.

* * * * * * * * * * * * * * * *

ARTIFICIAL SEGREGATION by Jeanne Helwig

(The following letter was sent by Jeanne Helwig to the Times-Picayune in New Orleans, La. It was forwarded to our attention by Margaret M. LaSalle, who notes: "The Universities have followed an even more stereotyped program for thirty years which is of course part of the vicious circle through elementary and higher grades.")

The need for the Equal Rights Amendment could not be better demonstrated than by looking at the sex-segregated high schools in Jefferson Parish. Until January 1977, our daughter attended the all girls' school, Grace King. Girls were steered into traditional home economics and secretarial courses while the boys were offered mechanical drawing, drafting, architecture, advanced math II and advanced Latin. Is it any wonder that 62.7% of the girls do not go to college?

Education is not academic alone. It is a socializing process in preparation for living in the real world. All students in the Jefferson high schools are deprived of this part of their education by keeping the sexes separated in their artifical environment. There is little opportunity for students to meet persons of the opposite sex in socially acceptable situations. Therefore, parents should not be surprised to find their children latching onto the first person they meet of the oppostive sex and hanging on to them for four years. Nor should they be shocked at the natural consequences of this situation, which manifests itself in early marriages and tragic unplanned pregnancies.

Opponents of the ERA say that injustices can be corrected at the local level on a case by case basis. Yet, three years ago we filed suit on behalf of our daughter against the Jefferson Parish School Board. For three years we waited for a decision of the U.S. District Court three-judge panel consisting of Jack Gordon, Blake West and John Minor Wisdom, and they have still not seen fit to make a decision on this case. Yet, they seem to find time to render decision on numerous other suits which have come up after this suit was initiated. Obviously, justice is not dealt with on a first come, first served basis.

It is hard now to convince our daughter that justice is available if one asks for it. She is disillusioned by this experience, which was contrary to everything she was taught in school about our democratic process. Yes, our healthy, normal daughter now has a four-year handicap to deal with - simply because she was born female.

This is one example of how difficult, if not impossible, it is to attack sex discrimination on a piecemeal basis. We need passage of the ERA to make it clear that the burden is not on each woman plaintiff to prove there is sex discrimination. The Amendment will instead assure all men and women the right to be free from discrimination based on sex.

I urge everyone to contact their legislators and ask them to vote for the ERA now.

* * * * * * * * * * * * * * * *

WHAT DO WE TEACH GIRLS ABOUT MATH?

> "The National Assessment of Educational Progress (NAEP) has also reported recently on sex-related differences in mathematics achievement. One sentence in particular has been widely quoted: 'In the mathematics assessment, the advantage displayed by males, particularly at the older ages, can only be described as over-whelming' (Mullis 1975, p.7). Inspection of this data confirms that males did outperform females at ages seventeen and twenty-six through thirty-five. On the other hand, at ages nine and thirteen, differences were minimal and sometimes in favor of females. Besides the problem of an overgeneralization of results, one other serious problem with the NAEP conclusion about male superiority must be considered. The population sample used was selected with no control for educational or mathematical background. Since males have traditionally studies mathematics more years than females have, a population of males with more background in mathematics was being compared with a population of females with less background in mathematics. At ages nine and thirteen, when the educational and mathematical backgrounds were similar, the achievement of both sexes was also similar."

The above quotation is from the article "Sexual stereotyping and mathematics learning" by Elizabeth Fennema and Julia A. Sherman in the May 1977 issue of The Arithmetic Teacher. Fennema and Sherman have been studying achievement and ability in mathematics of boys and girls in studies which have challenged the common beliefs, and summarize some of their conclusions in this article.

Also in this issue of The Arithmetic Teacher are two articles on sex stereotyping in mathematics texts. The information in the tables below is extracted from Henry S. Kepner, Jr. and Lilane R. Koehn's article "Sex roles in mathematics: a study of the status of sex stereotypes in elementary mathematics texts." (The other Arithmetic Teacher article is "Update on sex-role stereotyping in elementary mathematics textbooks" by Helen Fuesy Kuhnke.) Kepner and Koehn examined seven series of texts, tabulating data for the grade 1, grade 4, and grade 7 volumes. We present some of the data below.

Percentages of females in illustrations

	Grade 1	Grade 4	Grade 7
Series A	41	33	34
Series B	47	37	36
Series C	37	48	47
Series D	51	42.5	42
Series E	0	32	34
Series F	48	34	44
Series G	51	41	37
Series H	50	37.5	8

Percentages of females in problems

Series A	0*	38	34
Series B	52	46	43
Series C	0*	51	44
Series D	0*	43	37
Series E	44	50	43
Series F	42	35	44
Series G	0*	43	44
Series H	33	30	18

* = no males appeared in problems either.
no * = percentages of males is 100 - percentages of females

Ratios of occupations given to males to occupations given to females (combined illustrations and problems)

	Grade 1	Grade 4	Grade 7
Series A	*	5:1	6:2
Series B	*	4:3	6:4
Series C	*	2:5	7:3
Series D	1:1	2:1	2:0
Series E	1:0	2:2	7:1
Series F	8:6	4:4	10:9
Series G	0:1	5:0	5:1
Series H	*	3:1	9:0

Ratios of male to female activities (combined illustrations and problems)

Series A	3:1	8:9	6:6
Series B	**	7:6	17:14
Series C	5:4	9:11	11:7
Series D	6:5	10:12	5:3
Series E	**	7:5	4:3
Series F	2:3	25:15	11:11
Series G	5:2	5:6	6:2
Series H	3:3	2:2	7:5

* = no male or female occupations cited in the text
** = no activities were cited that involved males or females

Many thanks to The Arithmetic Teacher for permission to reproduce the above. Subscriptions or copies of the May 1977 issue can be obtained from The Arithmetic Teacher, National Council of Teachers of Mathematics, 1906 Association Drive, Reston, Va. 22091.

JR

* * * * * * * * * * * * * * * *

NEW EDITOR: This is the last issue of the AWM newsletter edited by Judy Roitman. The new editor is Ann Leggett, Math Department, University of Texas, Austin, Texas 78712. All text copy, information for inclusion, etc. is to be sent to her. As in the past, job ads, queries for receipt of newsletters, etc. is to be sent to the AWM office, Wellesley College, Wellesley, Mass. 02181.

* * * * * * * * * * * * * * * *

JOBS

The vacancies listed below appear in alphabetical order in an alphabetical listing of states. EO/AA means Equal Opportunity, Affirmative Action Employer.

University of Illinois at Urbana-Champaign, Asst. Professor in Industrial Engineering in general areas of operations research, applied statistics, manufacturing, production management and human factors. Ph.D required, should be committed to teaching at all levels as well as conducting sponsored research. Application deadline Oct. 31, 1977. Send biography and names of referenced to Prof. M.I. Dessouky, Chairman, Industrial Engineering Faculty Search Committee, Dept. of Mechanical and Industrial Engineering, University of Illinois at Urbana-Champaign, Urbana, IL 61801, (217) 33-3938. EO/AA

University of Michigan-Flint, Asst. Prof. Computer Science. Ph.D preferred, Doctoral candidates expecting to complete degree in the near future welcome to apply. Duties include: teaching, research, curriculum development and services to the department and University. Send resume to Dr. Samir Kamal, Director, Computer Science Program, The University of Michigan-Flint, Flint, MI 48503 (313) 767-4000, ext. 255. EO/AA

Eastern New Mexico University, Division of Math and Computer Science, Open Tenure Track faculty position in Computer Science beginning Fall, 1977. Ph.D. in Computer Science required. Salary range $12,000 to $15,000. Will also consider a person with Ph.D. in a related area and evidence of scholarship and teaching ability in computer science. In the event position cannot be filled from one of the two categories above, person without Ph.D. will be considered for term appointment. Send applications to Dr. William G. Calton, Director, Div. of Math and Computer Science, Eastern New Mexico University, Portales, NM 88130. EO/AA

Rutgers University, Asst. Professorship for Applied Mathematician knowledgeable in Mathematical Physics and/or Statistical Mechanics beginning Fall, 1978. Ph.D required. Must show outstanding promise in research and a concern for teaching. Apply with three letters of recommendation to Prof. Daniel Gorenstein, Chairman, Dept. of Math at New Brunswick, Rutgers University, The State University of New Jersey, New Brunswick, NJ 08903. EO/AA

Elmira College, Math Dept faculty position - one year, renewable for up to seven years. To teach linear and abstract algebra, mathematical analysis, supporting courses in statistics and finite mathematics and general physics. Ph.D. required. Salary range: $10,000 - $12,000. Send full credentials to Dr. David G. Ruffer, Academic Dean, Elmira College, Elmira, New York 14901

Mansfield State College, Mathematics Instructor, temporary full-time position Spring Semester 1978 only. Teach 4 sections of undergraduate courses in math. Participate in departmental activities. Masters degree, Ph.D preferred. Evidence of teaching experience in higher education. Salary $5,400-$8,000 for one semester. Send resume and three letters of recommendation to Prof. Stanley Werner, Mansfield State College, Mansfield, Penn. 16933. Deadline Oct. 15, 1977. EO/AA

AWM
c/o Department of Mathematics
Wellesley College
Wellesley, MA 02181

July-August-September 1977