

FILE

ASSOCIATION FOR WOMEN IN MATHEMATICS
NEWSLETTER

volume 4, number 5

August, 1974

Report of the President

The greatest concern for AWM at this moment is the employment situation and its effect on the members of AWM. We would like to know how many members are without positions for this September -- academic, industrial, or government -- and try to aid them in locating positions. The main purpose of this issue of the Newsletter is to print a list of unfilled positions as reported to the Editor of the Newsletter, Mary Gray, by the time this Newsletter goes to press. This is a particularly bad summer for employers with last minute vacancies and prospective employees to locate each other since, because of the International Congress, there are no summer meetings of the AMS or MAA where an employment register could be maintained. So if you are not yet employed for the fall, take a look at the list of job openings elsewhere in this Newsletter!

As Mary Gray reported in the last issue, the AMS Council at its meeting in DeKalb in May established an Emergency Committee on Employment and Tenure. Charles Curtis of Oregon is the Chairman and Judy Green, who with the Philadelphia Area AWM has been handling the employment register for AWM this past year, is a member. If you have any suggestions which would help them in their work on the Committee, please let them know. The Committee is not charged with trying to do anything to alleviate the situation for 1974-75. Many of us have been urging the AMS to do something on an emergency basis for this summer. I am happy to report that something is being done.

The Joint Committee on Employment Opportunities suggested that a supplementary employment service be operated at the AMS Providence offices for this summer. Employers are asked to submit information on all positions becoming available between July 30 and September 24, 1974, to the Employment Information for Mathematicians office in Providence. This information will be printed in weekly supplementary bulletins and mailed to interested persons. An announcement of this service and of the details involved will appear in the August issue of the AMS NOTICES; in addition department chairmen have already been notified of this plan for dealing with the employment situation and it is hoped that all of them who have openings in their departments will so notify the AMS EIM office. If you do not have a position for the fall and want one, see the August NOTICES or write to the EIM Summer Supplement, P.O. Box 6248, Providence, R.I. 02940.

As you know from Mary Gray's report in the June Newsletter concerning the AMS Council meeting in DeKalb, the AMS nominations slate for the next election has only one woman (Cathleen Morawetz) on the list, and she is already on the Council. A resolution requiring that the Society not hold meetings at hotels where discriminations are practiced was tabled. My point in mentioning these items already reported in a previous Newsletter was that only one observer, Dr. Solveig Espelie of Howard, was present at the Council meeting. The Council meetings are now open to observers. You are urged to attend them whenever possible. You are also urged to write to AMS Secretary Everett Pitcher, Lehigh, letting him know of your concerns.

AWM has applied for membership in the Conference Board of the Mathematical Sciences. In order to become a member, the present six constituent members: AMS, Association for Symbolic Logic, Institute of Mathematical Statistics, MAA, National Council of Teachers of Mathematics, and SIAM must give their approval. There are affiliate organizations of CBMS, for example, American Statistical Association, and if elected, AWM would conceivably be in the latter group. The objectives of CBMS as stated in the Conference's Constitution are: "The objectives of the CBMS shall be to encourage in the broadest and most liberal manner the coordination of the

activities of member organizations in the advancement of the mathematical sciences and in the application of mathematical principles; the promotion of research in mathematics, of improvement in mathematical education, and of the application of mathematics; the improvement of the qualifications and attainments of mathematicians through high standards of professional ethics and education; the increase and diffusion of mathematical knowledge; and by its meetings, professional contacts, reports, papers, discussions, and publication, to promote interest in the mathematical sciences and inquiry, thereby fostering public welfare and education." These objectives certainly are in agreement with the aims of AWM.

As I mentioned in my last report, many members have suggested that AWM maintain a list of women interested in giving colloquium talks. In addition, AWM can contribute to the encouragement of women in mathematics at an earlier stage by having its members speak at high schools, teachers conventions, and the like. It is particularly important that high school students see and hear women who have careers in mathematics. (In the second test of the Third USA Mathematical Olympiad no one of the names of the 26 students scoring highest on the test seemed to be that of a woman! High school students need to be shown that mathematics is not solely for male students.) I shall be glad to compile a list of women mathematicians willing to give talks. If you are one of those, please send me your name, topics of talks, and group for which they are appropriate.

I should like to welcome the new member of the Executive Committee of AWM. She is Dr. Lenore Blum, the new chairman of the Mathematics Department at Mills College, who will act as the West Coast representative of AWM.

Judy Roitman, the present West Coast representative, is resigning that post since she will be teaching at Wellesley next year. Thanks, Judy, for a job well done!

Alice T. Schafer, Wellesley, Wellesley MA 02181

JOBS

Teaching, research

EAST STROUDSBURG STATE COLLEGE. 2 assistant professorships. Salary to 12,226.80, 12 hour teaching load. Opening I: primary assignment: teaching grad and undergrad math; secondary responsibility the teaching of mathematical comp sci courses. Opening II: primary assignment teaching undergrad math courses in secondary ed and liberal arts curriculums; secondary responsibility grad math courses. Contact John Bzik, Math Dept, ESSC, East Stroudsburg PA 18301.

UCLA. 2 or 3 temporary appointments for new Ph.D.'s or visiting faculty, involving teaching and research during the 1974-1975 academic year, with possible summer employment if funds are available. Strong research background and teaching potential required in one or more of these fields: math aspects of comp sci; computing methods; communication systems; control systems; optimization. Contact J. W. Carlyle, Vice Chr, Dept of System Sci, 4531 Boelter Hall, UCLA, Los Angeles CA 90024.

WEST CHESTER STATE COLLEGE. Asst or assoc prof, applied math or OR. Contact Richard G. Branton, Chr, Dept of Math Sciences, WCSC, West Chester PA 19380.

UNIVERSITY OF ALABAMA IN HUNTSVILLE. Asst prof, complex analysis preferred. Teaching load 8-10 hours. Contact Peter G. Casazza, Chr, Dept of Math, UAH, Huntsville AL 35807.

UNIVERSITY OF NEBRASKA, LINCOLN. The search committee invites applications and nominations for department chairman. Applicants should have an established reputation in mathematics or mathematical statistics. Administrative duties are shared with a vice-chairman. Contact Sylvia Wiegand, Dept of Math, UNL, Lincoln NE 68508.

WASHINGTON UNIVERSITY. Asst prof of management information systems
Major interest in computer-based information systems, proficiency

in several computer languages required. Contact Gilbert R. Whitaker, Jr., Assoc Dean, Graduate School of Bus Ad, WU, St. Louis MO 63130 314-863-0100, ext 4856.

FLORIDA ATLANTIC UNIVERSITY. Possible opening for one year only at asst prof level. Ph.D. in algebra or analysis. Teaching load 8-9 hours per week (some possibly off-campus) plus research seminar. Contact M.J. DeLeon, Dept of Math, FAU, Boca Raton FL 33432.

SUNY COLLEGE OF ENVIRONMENTAL SCIENCE AND FORESTRY, SYRACUSE. 12 month appointment, 9 hour teaching load, Ph.D. in statistics or masters plus appreciable professional experience. Contact Charles C. Larson, Dean, School of Environmental and Resource Management, SUCOESAF, Syracuse NY 13210. 315-473-8636.

UNIVERSITY OF CALIFORNIA, RIVERSIDE. One-year lecturership, 8 hour teaching load of comp sci courses. Contact John de Pillis, Chr, Dept of Math, UCR, Riverside CA 92502.

UNIVERSITY OF NEBRASKA, OMAHA. Asst prof of general engineering, one year appt to teach engineering and computer courses. Contact Lawrence E. Ehlers, Chr, Dept of Industrial-General Engineering, UNO, Box 688, Downtown Station, Omaha NE 68101.

WICHITA STATE UNIVERSITY. Asst prof. Contact William Perel, Chr, Dept of Math, WSU, Wichita KS 67208. 316-689-3160.

UNIVERSITY OF ALABAMA IN BIRMINGHAM. 2/3 position at asst prof level to teach 4 courses in 2 or 3 quarters. Salary 9,000. Contact Richard J. Crittenden, Chr, Dept of Math, UAB, Birmingham AL 35294. 934-2154.

SOUTHWEST MINNESOTA STATE COLLEGE. Ph.D. preferred. To teach courses in calculus, analysis, assembly languages, automata theory. Contact James T. Rowe, Math and Comp Sci Dept, SMSC, Marshall MN 56258.

UNIVERSITY OF DELAWARE (Computing Center). Programmer, bachelor's plus 1 year's experience with computer-based information systems. Contact John J. Falcone. Technical Editor. Bachelor's plus experience in writing and programming. Statistical Consultant. Bachelor's plus proficiency in FORTRAN and ALGOL, 4 year's experience, including at least two in programming. Co-ordinator of User Education. Bachelor's plus experience in communication and computing science. Computing Science Consultant. Bachelor's plus proficiency in FORTRAN, ALGOL, BASIC, PL/I, COBOL, and APL and 4 years' experience, including two in programming. Contact Robert K. Shaffer, Computing Center, UD, Newark, DE 19711. 302-738-8441.

MONTCLAIR STATE COLLEGE. Teacher Corps Project. Team Leader, 14,000-15,000. Masters required. Contact Box 1974, MSC, Upper Montclair NJ 07043. 201-893-4233.

WISCONSIN RESEARCH AND DEVELOPMENT CENTER FOR COGNITIVE LEARNING. Programming specialist. Bachelor's plus 2-3 years experience in data processing, including software design and implementation. Experience in data base and file structure design, FORTRAN. 11,000-13,000. Developmental Evaluator. Ph.D. or equivalent in stat, measurement, or related field. Data processing experience. 12,500-16,500. Coordinator, Leadership Workshops. Ph.D. desirable, experience in teacher training, developing workshops desirable. Salary open. Coordinator, State Networks. Ph.D. required. Experience in teacher training and in individualizing instruction preferable. Salary 16,000+. Contact Doris M. Ardelt, Room 769F, 1025 W. Johnson St., Madison WI 53706. 608-262-4901.

SMITHSONIAN INSTITUTION. Fellowships for research in history of science, technology, math. 10,000 postdoctoral, 5,000 predoctoral. Contact Office of Academic Studies, Smithsonian Institution, Washington DC 20560. Deadline 15 January 1975.

GOODYEAR AEROSPACE. Senior Simulation Systems Analyst, Senior Systems Engineer. Masters or bachelors in EE, math or physics plus 3 years experience. Programmer/analyst. Bachelors in EE, Math or physics plus 2 years experience in FORTRAN. Contact Howard A. Walker, Manager, Tech and Scientific Personnel, Goodyear Aerospace Corporation, 1210 Massillon Road, Akron OH 44315.

STANFORD RESEARCH INSTITUTE. Various positions in programming, engineering, economics, OR.

Administrative

UNIVERSITY OF OREGON. Dean, College of Liberal Arts. Contact Glen A. Love, Chr, Search Committee, Office of VP for Academic Affairs, UO, Eugene OR 97403. 303-686-3081.

CENTRAL MICHIGAN UNIVERSITY. Dean of Off Campus Education. To begin January 1975. Deadline 1 October. Contact John W. Schmidt, Off Campus Dean Screening Committee, CMU, Mt. Pleasant MI 48859.

UNIVERSITY OF NEW HAMPSHIRE. President, Durham campus. Contact Virginia T. Steelman, Chr, Presidential Search Committee, McConnell Hall, UNH, Durham 03824. Chancellor. Contact Richard A. Morse, Chr, Chancellor Search Committee, McConnell Hall, UNH, Durham 03824. Deadline 1 October 1974.

OGLETHORPE UNIVERSITY. President. Contact Charles L. Towers, Chr. Search Committee, OU, 4484 Peachtree Rd, NE, Box 1079, Atlanta GA 30319.

GRINNELL COLLEGE. President. Contact Walter W. Straley, Chr., Presidential Search Committee, Box 3, GC, Grinnell IA 50112.

COLLEGE OF ALAMEDA. President. Contact Paul A. Elsner, Vice Chancellor, Educational Services, Peralta Comm. College District, 300 Grand Ave., Oakland CA 94610. Deadline 23 August 1974.

WHITMAN COLLEGE. President. Contact Bert R. Edwards, Chr, Search Committee, P.O. Box 907, Walla Walla, WA 99362.

ESSEX COUNTY COLLEGE. VP Academic Affairs. Earned doctorate, 10 years administrative experience, "open door" philosophy. 25,000-33,000. Contact Director of Personnel, ECC, 31 Clinton St., Newark NJ 07102.

GODDARD COLLEGE. President. Contact Mary Carter, Exec Asst to President, GC, Plainfield, VT 05667.

SOUTHEASTERN UNIVERSITY. VP for Academic Affairs. Ph.D. + administrative experience. Contact Chr, Search Committee, SU, 6th and I streets S.W. Washington DC 20024.

GULF COAST COMMUNITY COLLEGE. Exec VP, possibly leading to presidency after 1 year. Contact Dean Bob McSpadden, Chr, Search Committee, GCCC, Panama City FL 32401. Deadline 1 November 1974.

MORGAN STATE COLLEGE. President. Contact Executive Director, Board of Trustees, Maryland State Colleges, 16 Francis St, Annapolis MD 21401. Deadline 15 November 1974.

MARSHALL UNIVERSITY. President. Contact Ben L. Morton, Chancellor, West Virginia Board of Regents, 1316 Charleston National Plaza, Charleston WV 25301.

OHIO UNIVERSITY. President. Contact Alan R. Booth, Chr, Presidential Search Committee, 310 Cutler Hall, OU, Athens OH 45701.

UNIVERSITY OF COLORADO. President. Contact Clifford Houston, Exec Secretary, University Search Committee, P.O.D. 3038, HiMar Post Office, Boulder CO 80303. Deadline 15 September 1974.

PORTLAND STATE UNIVERSITY. VP for Academic Affairs. Contact Academic VP Search Committee, Office of the President, PSU, Box 751, Portland OR 97207.

ALABAMA ASSOCIATION OF INDEPENDENT COLLEGES AND UNIVERSITIES AND COUNCIL FOR THE ADVANCEMENT OF PRIVATE COLLEGES IN ALABAMA. Executive VP.

Contact N.H. McCrummen, Judson College, Marion AL.
NORTHEASTERN UNIVERSITY. President. Contact Lawrence H. Martin, Chr, Selection Committee, Room 136 Richards Hall, NU, 360 Huntington Ave., Boston MA 02115. Deadline 15 November 1974.
RUTGERS UNIVERSITY, COOK COLLEGE. Dean of Administration. Contact Charles E. Hess, Dean, Cook College, RU, P.O. Box 231, New Brunswick NJ 08903.
BOROUGH OF MANHATTAN COMMUNITY COLLEGE. Dean of Faculty. Earned doctorate, scholarly achievement, administrative experience. 30,000 minimum. Contact Man-Lim Yu, Chr, Search Committee, BMCC, 1633 Broadway, New York 10019.
HAMILTON COLLEGE. Dean. Contact Lawrence K. Yourtee, Chr, Search Committee, HC, Clinton NY 13323.
UNIVERSITY OF GEORGIA. Assoc Dean, Student Affairs. Doctorate, 3 years administrative experience. To start no later than 1 October 1974. Contact William Bracewell, 210 Academic Bldg, UG, Athens GA 30602. Deadline 20 August 1974.
EMMANUEL COLLEGE. Academic dean. To start no later than 15 December 1974. Doctorate plus 5 years teaching and/or administrative experience. Contact Chr, Academic Dean Search Committee, EC, 400 the Fenway, Boston MA 02115. Deadline 4 September 1974.
HOFSTRA COLLEGE. Assoc dean, University College and University Advisement. Doctorate and experience preferred. To start 1 September 1974. Contact H. Lichtenstein, Dean of University College and University Advisement, Hofstra Univ, Hempstead NY 11550.
EAST TEXAS STATE UNIVERSITY. Dean, College of Sciences and Technology. Contact Richard C. Meyer, VP for Academic Affairs, ETSU, Commerce TX 75428. Deadline 1 October 1974.
SUNY COLLEGE, NEW PALTZ, Asst dean, continuing education. Masters minimum. Contact Robert C. Davidson, Dean of Continuing Education, New Paltz NY 12561. Deadline 26 August 1974.
UNIVERSITY OF SOUTHERN CALIFORNIA. Dean of the College of Continuing Education. Contact Frederick Williams, Dean of the Annenberg School of Communications, USC, Los Angeles CA 90007. Academic Program Coordinator, Doctorate or equivalent. To start September 1974. Contact Jerome B. Walker, Research and Program Coordinator, Bovard 259 USC.
SUNY COLLEGE AT BUFFALO. Affirmative Action Officer. Masters, Ph.D. or law degree desirable. 16,000-18,000. To start 1 September 1974. Contact President's Office, Affirmative Action Officer Search Committee, SUNY College, 1300 Elmwood Ave., Buffalo NY 14222.
UNIVERSITY OF SOUTH CAROLINA. Provost. Contact Robert B. Patterson, Chr, Provost Search Committee, History Dept, USC, Columbia SC 29208. Deadline 1 September 1974.

SEEKING NON-ACADEMIC JOBS

The following is prompted by questions on applying for non-academic jobs raised in Alice Schafer's report in the last newsletter. In working on the AMS Employment Committee and in trying to help students in my own department look for jobs, I've been trying to find answers to these same questions. These suggestions have come from talking and corresponding with people who have successfully found jobs in industry or government.

One thing widely stressed is that the job applicant should try to find out as much as possible about a company before applying. This can help in several ways. 1. You will have a better idea of whom to

approach to express your interest in a position, or even to inquire about the availability of a position. The personnel office may be the worst place to start. Instead, go to the head of the department most likely to hire a mathematician (or of the department where the opening exists, if you already have this information.) 2. You will be better able to sell the prospective employer on the desirability of hiring a mathematician. Many jobs which a mathematician might fill well are not advertised as such. Do a bit of library work or asking around if necessary to find out what types of mathematics may be applicable in that field. 3. Try to discover what the company's practices in transferring employees are. If the organization has one location or for some other reason does not transfer employees, a personal commitment to settling in that area can be a factor and should be brought up.

Methods of finding job openings are diverse and may vary in different regions of the country. Scout out potential employers in your area or in an area in which you would like to settle, as mentioned above. Ask friends, relatives and neighbors to keep their ears open. (Yes, it sounds corny and antiquated, but many people get jobs this way. Don't neglect this approach, since some positions are advertised at best by interdepartmental memoranda.) Try the campus placement bureau at the university where you received your degree. (Some have more than one bureau--e.g., at Texas, the Liberal Arts, Education, Business and Engineering Placement Bureaus would all be potential sources for mathematicians. Remember that not all suitable jobs will have "mathematician" in big, bold letters. You will probably be competing with people in other fields.) Depending on the locality, want ads (particularly the New York Times) or private or governmental placement agencies may be helpful. Whether private agencies operate on an employer-pays or employee-pays basis also varies. In Texas, the latter prevails, which means you must shell out 1000 to 2000 dollars to get a job. Since most technical jobs in Texas (including State government jobs) are listed exclusively with private agencies, there is little alternative.

The question of (supposed) over-qualification is hard to deal with because of just plain prejudice toward mathematicians or Ph.D.'s. However, this prejudice often has understandable origins. It seems reasonable to try to deal with the origins of the prejudice in order to get around it. We all know that many people are scared of mathematics. Therefore emphasize any experience teaching mathematics to non-mathematics majors. Several mathematicians working outside of academia have remarked that such experience has been very valuable, since an essential part of their work involves communicating mathematical concepts to fellow employees. Many employers have had bad experiences, particularly during the recent job crisis in physics, with Ph.D.'s who were arrogant, wanted only to "do their own thing," were incompetent or unable to communicate, or who left as soon as an academic position became available. As a result, mathematicians now seeking jobs in industry bear the burden of convincing employers that they do not fall into any of these categories. Of course, emphasize any positive qualifications: experience with computer programming, statistics, differential equations or any other applied areas. (This need not be very extensive--a former Texas student whose specialty was algebra feels he got his job with the Texas Water Quality Board primarily because he knew some computer programming and had taught a course in differential equations as a teaching assistant.) Also, of course, emphasize any non-mathematical work experience or any interests, vocational, avocational or academic, relevant to that particular industry.

The AMS Employment Committee has been soliciting case studies of mathematicians working in non-traditional jobs. We hope that the Notices will agree to publish some of these as an aid to persons seeking non-academic jobs.

Martha K. Smith, University of Texas, Austin 78712

WOMEN IN MATHEMATICS, THE INTERNATIONAL SCENE

At the International Congress of Mathematicians in Vancouver there will be a panel on women in mathematics at 4p.m. on 23 August. There will be women mathematicians from France, India, the United Kingdom, the United States and Vietnam giving short talks and then there will be an opportunity for questions and discussion. Following this program there will be an AWM meeting centering on affirmative action and the job situation. We can use help at Vancouver publicizing these meetings.

The next few issues of the Newsletter will carry an article by Else Høyrup, a mathematician in Denmark. The first installment follows.

WOMEN - AND MATHEMATICS, PHYSICS AND TECHNOLOGY?

WOMEN - AND RESEARCH?

This article consists of excerpts from Else Høyrup's book Women: Work and Intellectual Development (Roskilde University Center Press, 1974). Sources cited may be found in the book. Translated from Danish by John Lamperti, Dartmouth.

1. Some figures, with commentary.

Since the Second World War, the fraction of girls among those completing the mathematics line at the gymnasium¹ has remained nearly constant at about 27 percent. In the most recent years there has been a small increase in the fraction of girls entering the gymnasium: in 1970 it was "way" up to 30 percent.

In the language lines of the gymnasium, the fraction of girls has increased steadily since the war: from 48 percent in 1941 through 57 percent in 1946 to 70 percent in 1971.

All in all, the women's share of the whole group of gymnasium students has increased so much since the war that the gymnasium now has a student sex distribution approximating that of the relevant age group in the whole population, it is about 49 percent women and 51 percent men. But the girls' choice of which line to study has become more and more lopsided during these years.

¹The Danish "gymnasium" is a 3-year secondary school attended after completing 9 years of basic education by between 10 and 15 percent of all school children; it is the usual way to prepare for university study. The gymnasium course is divided into more-or-less specialized "lines," such as "classical," "modern" (languages) and "mathematical" (including science and some modern language study as well). (Translator's note)

Among the students in the mathematics/natural-science division at Copenhagen University, just as in the mathematical line at the gymnasium, the proportion of women has not changed much during the post-war period: In 1948/49 it was 23 percent, in 1970/71 it was 25 percent and in 1971/72 it was 26 percent. (Among the mathematical sciences proper, the share of women is only about 16-17 percent.)

At the Polytechnical Institute (DTH) women in 1948/49 made up barely 3 percent of the student body, while in 1970/71 they were still only 5 percent. (Of the total of 135 female engineering students at DTH in 1970/71, 73 were enrolled in the chemical line, which both men and women students call the "kitchen line." The mechanical line, on the other hand, had only 11 women.)

At the Engineering Academy (DIA) in Copenhagen, the proportion of women students was barely 6 percent in 1965/66 and a little over 8 percent in 1970/71. (The courses at DIA are shorter and closer to school courses than are those at DTH, but in both places the courses are very theoretical in contrast to the education offered at the technical colleges. At DIA 2/5 of the women students take the chemistry line.)

At the technical colleges, women in 1970 made up only 0.5 percent (!) of the newly enrolled students.

In the technical schools for apprentices (which also train hairdressers, the majority of whom are women) women comprised in 1967 about 8 percent of the total number of apprentices, while in 1970 they were only 5 percent (because of the decline in the hairdressing trade).

On the other hand, looking at the Soviet Union we find quite different figures: About 30 percent of Soviet engineers and 30 percent of other sorts of technical workers, and about 45 percent of scientists, are women. (Sture Stiernlof: Women in the Soviet Union, Prisma (Sweden), 1970. See also Der Spiegel, 1971.)

These figures indicate that it is the cultural and social structures in Denmark which restrict the relationship of girls and women with mathematics, natural science and technology in our country. One gets the same impression when one observes that the girls who, despite everything, do enter the mathematics gymnasium line (and the women who study mathematics in the universities) do in fact perform about as well in mathematics as their male classmates. But for every new step up the educational ladder, there are fewer girls and women who enroll in the mathematical, scientific and technological fields, and for every additional step up the occupational/career ladder there are fewer women who are employed or promoted.

When it comes to employment and promotion there are many more or less hidden forms of discrimination against women. For one thing, their abilities are commonly underestimated simply because they are women; for another, many employers (even in the public sector) feel that it is troublesome to have female employees because of the "risk that they will have children" and will require maternity leave. Finally, in our capitalistic society a major factor is that women are regarded as a so-called flexible work-force reserve (and highly educated women are not as "flexible" as unskilled female workers).

It is this state of things which is behind the fact that female engineers have a more difficult time finding employment in private industry than male engineers: Either the female engineers lack some professional qualification such as authority, or else, having these qualifications, they are regarded as unfeminine women, unsuitable for maintaining the customary sex-role patterns which have certain advantages for the employers, such as the work-force reserve of low-paid women workers.

In the next 5 sections of this article, the development of sex-role differences will be illustrated with respect to mathematics, physics, engineering, the sense of spatial relations, and abstract thinking, together with the general retardation of girls' intellectual development which takes place especially during and after puberty. In the last section we investigate why there are so few women research workers--not only within the natural sciences.

ACADEMIC ADMINISTRATION INTERNSHIP PROGRAM. On September 3, 1974, the American Council on Education (ACE) invites its 1400 member colleges and universities, through their presidents and chief academic officers, to nominate candidates for the eleventh class of ACE Fellows in the Academic Administration. This program provides faculty and staff members with a preservice opportunity to learn about higher education administration through seminars and a 9-12 month internship experience. For the 1975-76 class, 40 Fellows will be chosen. For information, write or call Thomas M. Stauffer, ACE, One Dupont Circle, Washington DC 20036. You must be nominated by your institution for this program, and the first step is to be sure that your school is participating.

PAGES FROM THE PAST

In this issue we begin a series of reprints from the Math Monthly. The first few have been sent in by Susan Montgomery, USC. Other readers are encouraged to submit selections.

A TRIBUTE TO MILDRED LENORA SANDERSON (American Mathematical Monthly, vol. 22, 1915)

The remarkable mathematical ability and originality shown by Miss Sanderson in her master's and doctor's theses and the very unusual ease with which she assimilated ideas in all branches of pure and applied mathematics, combined with her enthusiasm for that science, gave full promise of a highly successful career for her in research. Her death on October 15, 1914, only a year after completing her graduate studies, was not only a distinct loss to progress in mathematical research in America, but was a very keen blow to her fellow students, to all of whom she had endeared herself by her most lovable personality.

Miss Sanderson was born May 12, 1889, in Waltham, Mass., on the place where her ancestors had lived for over 200 years. She graduated from the North Grammar School at 13 and was valedictorian of her class in the Waltham High School. One of her instructors in the latter school writes that "Miss Sanderson was gentle-mannered, of brilliant intellect, an exact student, broad-minded, self-reliant, and courageous." She entered Mt. Holyoke in 1906, received "Sophomore Honors" in June, 1908, for general scholarship, and "Senior Honors" in mathematics at graduation in 1910. She held the Bardwell Memorial Fellowship for 1910 and 1911, and began her graduate work in mathematics at the University of Chicago, taking the degree A.M. in 1911. The subject of her master's thesis was "Generalizations in the Theory of Numbers and Theory of Linear Groups." Of this original and valuable thesis a very brief extract was printed in the Annals of Mathematics, Ser. 2, Vol. 13, 1911, pp. 36-39. This work might well have served for her doctor's thesis; but she was quite willing to undertake a new investigation in

a wholly different field. The resulting thesis for the degree Ph.D., taken at the University of Chicago in 1913, was entitled "Formal Modular Invariants with Applications to Binary Modular Covariants," and appeared in the Transactions of the American Mathematical Society, Vol. 14, 1913, pp. 489-500. This paper is a highly important contribution to this new field of work; its importance lies partly in the fact that it establishes a correspondence between modular and formal invariants. Her main theorem has already been frequently quoted on account of its fundamental character. Her proof is a remarkable piece of mathematics.

During the year 1911-1913, she held a fellowship in mathematics in the University of Chicago. From October, 1913, to February, 1914, when her final illness began, she was instructor in mathematics in the University of Wisconsin.

If I may be permitted to add my personal tribute to the universally expressed tribute to her remarkable ability, it would be to say that she was my most gifted pupil.

The University of Chicago
June, 1915

L. E. Dickson

RETIREMENT BENEFITS

Another district director of the EEOC has ruled that the TIAA method of paying retirement benefits discriminates against women.¹ The current status of the issue is that EEOC contends that equal monthly payments must be made to those with the same work history while in enforcing the Executive Order, HEW has allowed either equal payments by the employer or equal monthly benefits. In issuing new Title IX guidelines, HEW has asked for comment on the three alternatives: 1) the current option, 2) mandated equal monthly benefits or 3) mandated equal monthly benefits and equal employer contributions. To further complicate matters, the Labor Department has scheduled hearings on whether to change its guidelines which are the same as the current HEW rule. In April the annual meeting of the AAUP called for equal monthly benefits and its representatives will testify in favor of this position at hearings of the House Special Committee on Education this month and at Labor Department hearings next month. Written commentary will be submitted to HEW on the Title IX guidelines.

The level of debate on this issue can easily descend to the emotionalism of "Women live longer" versus "But their pound of hamburger costs the same!" In subsequent issues of the Newsletter more attention will be devoted to the subject, but for now we present it as a question of spreading the risk of the tail end of the distribution of life spans for women not only over those with the same sex organs, but over the whole population, while at the same time sharing the "benefit" of the few men who die early with everyone.

Meanwhile, if you want to support the notion of equal monthly benefits write to HEW and to the Labor Department. To get a copy of a WEAL-prepared analysis of this and other issues in the Title IX guidelines, write to your Congressman and ask for a copy of that portion of the Congressional Record into which they were inserted by Cong. Bella Abzug. This procedure also serves the purpose of alerting your Representative to your interest in the issue.

¹In New Orleans, in response to a complaint filed by the American Nurses' Association on behalf of a faculty member at the University of Arkansas at Little Rock. A faculty member at Long Island University has sued TIAA directly.

PUBLICATIONS

Lynn M. Osen, Women in Mathematics, MIT Press.

"Laws of Special Interest to Women in New Jersey," N.J. State Commission on Women, 363 West State St., Trenton 08625. 50 cents (in English and Spanish)

"Sexism and Racism: Feminist Perspectives," special issue of Civil Rights Digest available free from Office of Information and Publications, U.S. Commission on Civil Rights, Washington 20425.

Maggie Kampelman, "My Son the Astronaut, My Daughter the Witch," sexism in education kit, 2.00 from WEAL, 799 National Press Bldg, Washington 20004.

L.M. Shulaman, A Woman's Place, MacMillan.

Bill Moyers Journal on Equal Rights Amendment--call your local PBS TV station and ask that they repeat it.

Guidelines for Improving the Image of Women in Textbooks, available from Scott, Foresman, 1900 East Lake Ave, Glenview IL 60025, free.

Susan Deller Ross, The Rights of Women, Avon paperback 1.25.

The next two items are from the newsletter of the Caucus for Women in Statistics.

Following is a quote from p. 22 of a booklet entitled "Careers in Mathematical Statistics--Men and Women Statisticians" (Research no. 45: Institute of Research, 637 Dearborn St., Chicago 60605). The paragraphs are under a subheading entitled "Opportunities for Women in Statistical Employment." The subsection starts off by stating "In the field of statistics, the opportunities for women are the same as those for men," but then continues..."Some jobs with which the statistician is confronted are better handled by women than by men. For example consulting statisticians spend a great deal of time performing computations and preparing material to be used on a computer. Women are often very good at operating the equipment, such as desk calculators and key punches, used in these operations. Also, women are frequently excellent computer programmers. ... Certain consulting jobs are more suited to women consultants than to men. For example, the food industry employs statisticians to design experiments for the purpose of finding the best combination of ingredients for a certain taste and texture of foods. Women fit nicely into this kind of job. Many other consulting jobs, such as those in the social sciences, benefit greatly from being exposed to a woman's point of view. It goes almost without saying that women are excellent university teachers. This applies to the field of statistics as well as to many other areas."

A Prentice-Hall book appeared in 1974--"Flaws and Fallacies in Statistical Thinking" by Stephen K. Campbell. The book contains several cartoons, and women are either portrayed as sex symbols or very ugly (curlers in hair, grossly pregnant). One cartoon attempts to illustrate mean, median and mode and has 3 "Joe College" type males talking to each other.

Male 1--"Last week we three dated 6 girls with bust sizes averaging 36 inches."

Male 2--"Lessee, their individual measurements were 30, 30, 37, 38, 39, and 42. That makes a median of 37 1/2."

Male 3--(with an angry look on his face) "Yeah, but the mode was 30 and I had both of them."

Some months ago this Newsletter printed a letter about a book by Goodman and Ratti, calling attention to some sexist features. We now print a letter from Alice Schafer to A.W. Goodman and his reply.

Dear Professors Goodman and Ratti:

For the past couple of years we have used your text Finite Mathematics with Applications in a course we teach for non science students here at Wellesley College. In the first semester of this past academic year I taught a section of this course. I realized that your text was already listed by the Association for Women in Mathematics as "sexist" in nature, but I had not realized how very much so until I used the book.

The students in the class and I objected particularly to two kinds of problems and discussions in your book: those that were obviously sexist and could be only thought of as insulting to women and those that were more subtle in nature which, by and large, assumed that all executives are men, people with interesting professions are men, college professors, doctors, etc. are all men, men always do the gambling, are members of political parties and are the members in the family who influence their sons--no mention that the daughters might be even interested in being members of political parties and therefore probably unworthy of being influenced. Just to give you a few examples of what we mean, in the first category see pp. 26-29, discussion centering around (a) through (d); p. 32, problem 10; p. 33, 19 (d); p. 67, Table 3. Of the latter category, again just to take a few: p. 89, problem 8; p. 90, 11; p. 112, 26; p. 134, 25; p. 145, 5; p. 151, 14; p. 155, 6; p. 157, 12; p. 165, Ex. 2; p. 168, 3; p. 175, 6,8,9; p. 182, 10; p. 188, 13; p. 194, 6; p. 250, 16; p. 258, Ex. 1; p. 265, 10,11; p. 289, 9; p. 296, 6,7,8; p. 314, Ex. 3; p. 331, 11; p. 337, 9; p. 375, 11.

In writing your text it is possible that you had never intended it to be sexist in nature. In its own way, that is equally discouraging and upsetting to women. At a time when the American Mathematical Society is now encouraging women to study and have careers in mathematics, it would be heartening if textbook writers would realize that women can do other things than be housekeepers.

Alice T. Schafer
President, Association
for Women in Mathematics

Dear Professor Schafer:

I have your interesting letter of June 11 concerning the "sexist" nature of the text "Finite Mathematics" by Goodman and Ratti.

You may rest assured that during the writing of this text neither Professor Ratti nor I had any intentions of being insulting to women or putting them in a degrading position. If there is any woman(or man) who feels insulted, degraded, or offended by anything that we wrote, we offer our humble and sincere apologies.

However, there are many items in your letter that deserve more attention than a mere apology.

A second edition of our text is now in the printer's hand. Most of the objectionable passages have been removed or altered, and we believe that the second edition will be free of anything that can be offensive to any fair-minded person of either sex. However, in looking over the list of offensive passages that you submitted, I must say that I can not agree with your view in every case. I do not wish to be involved in a lengthy discussion of each item, but I will touch on two points.

Many of your objections turn on the use of the pronoun "he". When

I was learning English grammar, I was taught that if the sex of a person is in doubt the correct pronoun is "he". I do not believe that this rule has been changed and since we intend to use good grammar (to the best of our ability) in all of our writing, we will continue to use "he" in the second edition, wherever good English dictates. Perhaps the English language must be modified by the addition of a new pronoun to cover the ambiguous case where the sex of the subject is unknown. Clearly "it" is unsatisfactory.

You list as objectionable, Problem 13 on page 188. In this problem we find Mr. Skidmore playing pool with Professor Bankball, and interrupting his play long enough to phone his wife that he will be home by midnight. I personally see nothing wrong with this problem. Mr. Skidmore is obviously very considerate of his wife's feelings and is behaving quite properly. A male chauvinist pig would not bother to phone his wife. But suppose for the moment that in problem 13, it was Mrs. Skidmore playing pool and betting 1 dollar on each game. Then the authors would be accused of portraying women in a very bad light as gamblers.

During the preparation of the second edition it never occurred to us that we should alter this problem, but had the question been raised, I would have insisted on leaving the problem intact, because it does portray the proper behavior of a gambler (of either sex) to her or his spouse (male or female).

Perhaps a word is in order about my life as a teacher of mathematics. I have been the successful advisor for 5 Ph.D. students: 4 men and 1 woman. I treated the young lady exactly as I did the men.

In many of my classes, the girls do better on my examinations than the boys, and occasionally I take pleasure in pointing out this fact to the class.

Let us put this discussion in its proper setting. We live in a world where: (1) a billion people do not have enough to eat. (2) billions of dollars of excess profits are concentrated in the hands of a selfish few. (3) prisoners of war (men) have recently been tortured and killed, (4) many countries imprison their citizens (men) for their political views, and finally (5) overpopulation and pollution may soon be the cause of still more starvation and still greater crimes. You are indeed a fortunate person, if the problem mentioned in your letter is the most important one you face. I sincerely hope that the energy you spend in attacking various problems is distributed in proportion to the importance of the problems.

One last item. Neither Professor Ratti nor I were aware that our book had made the "sexist" list of the Association for Women in Mathematics. We do not know the date of this action, nor the form and date of the publication of this list. Simple good manners would dictate that we be kept informed of any such action. If the Association for Women in Mathematics publishes a journal or newsletter, I request that you print this letter (not excerpts) so that my views are available to all interested teachers of mathematics and their students.

A.W. Goodman, University of South Florida, Tampa 33620

LEGAL NEWS

In the Bloomfield College (New Jersey) case a judge has upheld the traditional notion of tenure in a suit filed by the AAUP on behalf of dismissed faculty. However, in an Iowa case handled by NEA for a fired tenured professor a judge has declared that tenure can be abrogated by either party to the contract if due notice is given.

Copies of the Bloomfield decision are available from AAUP,
One Dupont Circle, Washington 20036.
The New York Supreme Court in Sanbonmatsu v. Boyer et al ruled
that antinepotism rules are illegal.

Although there are two women in the group of Sloan fellows in math
this year, none of the 14 Guggenheim Fellowships this year in math
went to women. Has a woman mathematician ever won a Guggenheim?

If you are interested in learning what sorts of projects on women
private foundations have funded, write Ford Foundation, 320 East
43rd St, New York 10017, and ask for the booklet "That 51 Percent."

AFFIRMATIVE ACTION TODAY

There seems to be general agreement that little positive has
been accomplished and that many abuses have occurred. This is
doubly unfortunate as women aren't being helped and many men are
becoming bitter--chairmen because of what is considered unwarranted
interference by the central administration, job-seekers because they
attribute their lack of success to preference being given to women.
There is a good article in the Chronicle of Higher Education, 5 August,
so I'll make only a few points here.

Abuses seem to be of the following sort:

- 1) Central administration requires the listing of jobs with sources
which are completely worthless. AWM is on a list of recruitment
sources and gets endless numbers of announcements of positions in
political science, PE, you name it. On the other hand, we still don't
get notices from all math departments.
- 2) In their zeal to make up for past sins, administrations impose un-
realistic demands. Then in response departments rebel and do not make
any efforts at all.
- 3) Sometimes in their haste to hire a woman, departments take the
first available without hunting for the best qualified. In fact,
some are suspected of deliberately hiring someone whom they can later
exhibit as proof that women are unqualified.
- 4) "Searches" are conducted for women to fill jobs already offered to
men.

The facts seem to be these:

- 1) Both men and women are having difficulty getting jobs, but aside
from a few superstars there is no rush to hire women. There are
many qualified women unemployed or underemployed.
- 2) There is a shortage of women for senior positions. However, schools
could easily get some of the women who do hold senior positions to come
as visitors for a year or semester and owe it to their students and
junior faculty to try.
- 3) There are qualified women for administrative posts, but aside from
some tokenism they are not being hired. AWM members should recommend
qualified women for administrative jobs on their campuses--what could
be better than a feminist mathematician making decisions on hiring,
budget, etc.?

This publication is on file at the Women's History Library, 2325
Oak St., Berkeley CA 94708.

We begin running the By-laws of AWM; they will be continued in subsequent issues as space allows.

BY-LAWS OF ASSOCIATION FOR WOMEN IN MATHEMATICS, INC.

Section 1. NAME, PURPOSES, LOCATION, CORPORATE SEAL AND FISCAL YEAR.

1.1 Name and Purposes. The name and purposes of the Corporation shall be as set forth in the Articles of Organization.

1.2 Location. The principal office of the Corporation in the Commonwealth of Massachusetts shall initially be located at the place set forth in Articles of Organization of the Corporation. The Directors may change the location of the principal office in the Commonwealth of Massachusetts effective upon filing a Certificate with the Secretary of the Commonwealth.

1.3 Corporate Seal. The Directors may adopt and alter the seal of the Corporation.

1.4 Fiscal Year. The fiscal year of the Corporation shall, unless otherwise decided by the Directors, end on May 31 in each year.

Section 2. MEMBERS

2.1 Qualification. Subject to approval of an officer of the Association, any person with a bona fide relationship to the teaching, learning, and pursuit of mathematics or the legal rights of women may become a member on the payment of dues as determined by the Executive Committee.

2.2 Powers and Rights. In addition to the right to elect Directors as provided in Section 4.1 and such other powers and rights as are vested in them by law, the Articles of Organization or by these By-Laws, the members shall have such other powers and rights as the Directors may designate.

2.3 Removal. A member may be removed only for cause by vote of a majority of members then in office, and (except in the event of non-payment of dues) only after reasonable notice and opportunity to be heard.

2.4 Resignation. A member may resign by delivering her written resignation to the President, Treasurer or Clerk of the Corporation, to a meeting of the members or Directors or to the Corporation at its principal office. Such resignation shall be effective upon receipt (unless specified to be effective at some other time), and acceptance thereof shall not be necessary to make it effective unless it so states.

Has your department become an institutional member yet?
Check the mailing label to see whether your subscription should be renewed.

Mary Gray, Editor, American University, Washington 20016

ASSOCIATION FOR WOMEN IN MATHEMATICS

MEMBERSHIP APPLICATION

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Institutional
(10.00) _____

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Individual
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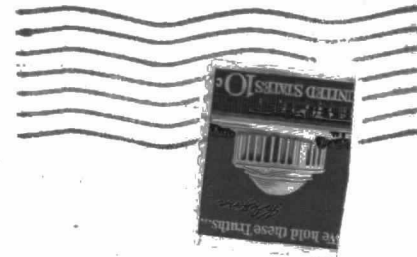
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Make check payable to
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WASHINGTON DC 20016

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