The early decades of the Association for Women in Mathematics (AWM)

Linda Rothschild, sixth president of AWM

First I would like to thank Carol and Marie-Francoise for their work in organizing this symposium and for inviting me to participate. In this discussion of AWM, the Association for Women in Mathematics, I want to devote my time to the early history and prehistory of this organization, and give some context to its origins.

The first rumblings of the need for an organization supporting women in the profession of mathematics in the U.S. began in the turmoil of the 1960s, coinciding with the women’s movement, the anti-war protests, as well as the fight for racial justice. In that decade of the modern era women’s lives were still limited in all areas, including education. At the elementary school level girls had classes in cooking and sewing, while boys learned to work with tools and do carpentry. At the high school level girls were often offered separate, but unequal opportunities. For example, in Philadelphia, the city in which I was raised, the most prestigious and best funded public high school admitted only boys. At the level of higher education, many of the Ivy league universities, such as Yale and Princeton, were completely closed to women students, while others, such as Harvard and Columbia, admitted women in smaller numbers and in separate colleges. The number of male college graduates greatly exceeded that of females in the U.S. Career opportunities for women, even college graduates, were limited. All of this has changed, at least to some extent. In America women now outnumber men as undergraduates in universities. But we are not nearly done!

Although women comprised a fair proportion of mathematics majors in the 1960s, most intended to become teachers, and there was little encouragement for them to pursue graduate study in mathematics. In fact the Ph.D. program in mathematics at Princeton University, arguably the top program in the U.S. at that time, did not admit women at all. (I still have a formal rejection letter from Princeton in 1965 stating their policy.) Very few women had permanent positions as faculty members in mathematics departments, and many of the top graduate programs had no women at all on their faculties. Several steps in the pipeline led to this result: few women were admitted to Ph.D. programs in math, some of those who started did not finish their degrees (which justified admitting few female students), and the old-boy network meant that female students were rarely recommended for academic positions. To make matters worse, many universities had anti-nepotism policies, meaning that a married couple could not be employed in the
same department, or, in some cases, the same university. Women often had to choose between having a partner and having an academic career in mathematics. Bearing children was regarded as a sign of not taking one’s career seriously.

Inspired by the social movements in the 1960’s and early 1970’s groups of women mathematicians seeking action formed around universities in the U.S., in particular in the Berkeley area on the West coast and the Boston region on the East coast. AWM was founded during the 1971 annual meeting of the American Mathematics Society (AMS) with the energetic mathematician Mary Gray as the first leader of the organization. Of the first six presidents of AWM, three had been active in Berkeley during the late 1960’s and early 1970’s, including Mary, while the other three, myself included, had been part of a group meeting in person in Boston during that time. Alice Schafer from our Boston group became the second president and grounded the organization by establishing a physical office with staff for AWM at Wellesley College near Boston. Although Alice was older, by many years, than most of the rest of us, in her quiet but persistent manner she was a driving force in keeping AWM moving forward for several decades. I apologize here for not mentioning names of the other women who were instrumental in AWM’s early years, but I want to go on with the rest of the story.

In the 1960s, it was relatively easy for a new PhD from a good university to find a position in a math department, unless the applicant was female. In contrast, in the decade of the 1970’s the academic job market dried up, and many men felt that hiring a woman would be taking a job away from a man who really needed it. AWM generated much activity in the 1970s, its first decade. Early achievements included the publication of a newsletter and the sponsoring of meetings and receptions at AMS annual and regional meetings. At last women attending mathematics meetings could find each other and have a “home away from home.” AWM established a written set of bylaws, formally incorporated in the state of Massachusetts, and was granted tax-exempt status. The organization gained recognition as an affiliate member of the mathematics consortium, Conference Board of the Mathematical Sciences (CBMS). At national mathematics meetings, AWM held panels in topics of special interest to women, but which were also attended by men. The organization also supported some political issues, including the proposed national Equal Rights Amendment (ERA). AWM supported some lawsuits brought by other women’s groups against discriminatory practices, including one targeting the National Institutes of Health (NIH).

Nevertheless, through the 1970s AWM remained small in membership numbers, and the organization was not universally respected by prominent male mathematicians. One
of the main reasons women in mathematics needed to create an organization outside the AMS was the lack of women in AMS leadership. The male AMS leadership regarded itself as an elite clique of mathematicians from top research universities, while members of the fledgling AWM leadership were not regarded as major figures in the research community.

By the early 1980s about 20% of mathematics PhDs were being earned by women, up from about 6.5% in the 1960s. Hiring in mathematics had recovered, and women were beginning to obtain permanent positions at many universities, though not in proportion to their numbers. Some leading mathematics departments had still failed to hire any women at all, perhaps hoping that the “problem” would just go away. Women still had difficulty being taken seriously as mathematicians. Maternity leave (or parental leave) did not yet exist, and those of us who had young children sometimes had to pretend that our teaching or research lives were not affected by pregnancy or family responsibilities. Some female mathematicians even felt that joining AWM might endanger their future careers or make them appear to be less serious about research. For example, a young woman holding a tenured professorship in a top-rated math department turned down an invitation to give a major AWM address, saying that she wanted to be chosen for her research, not for being a woman. It has not happened again! As the number of female mathematicians in the research universities grew throughout the 1980s, AWM recruitment drives were successful in greatly increasing the size and prominence of the organization. Furthermore, women were now also becoming leaders in AMS also. In 1983 the distinguished logician, Julia Robinson, who had long been denied a professorship because of nepotism rules, became the first female president of the AMS.

All the presidents of AWM through the 1970s and 1980s came from academia, with backgrounds in “pure” mathematics. Since AWM at this point was being criticized for being too focused on academia and research in pure mathematics, it was time to expand its outreach to applied mathematicians, including members working in industry or government and to mathematicians who devoted their efforts mainly to teaching at the college level or working to improve the teaching of mathematics to children. Later AWM presidents and officers have worked to make AWM into the much more inclusive organization it is today. In some of the other sciences, women have organized themselves only as a committee of an umbrella organization. However, perhaps because of its independence, AWM has been able to do more to help women in mathematics, such as sponsoring conferences in which all speakers are women. As an organization, not only a committee, AWM gives opportunities for women to speak out and to take more leadership roles.
The proportion of women among new PhDs in math in America has increased to about 30% in the present, but this number has not grown in the past 15 years or so. We need to understand this lack of growth in the context of other opportunities that have opened to women in the last few decades. Young female scientists are now achieving prominence in other scientific fields, such as biology, chemistry, computer science, and astrophysics for example.

Women mathematicians may not achieve equality in numbers with men, but perhaps this should not be a major goal of AWM. There are still many barriers to equal opportunities for women in mathematics in the U.S. AWM can continue to encourage girls to become mathematicians and to make it possible for them to have full lives and successful careers.

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