

## What the World Needs Now: More Women in Mathematics and Science

Joy Wallace

"Expanding Your Horizons in Science and Mathematics" conferences are designed to nurture girls' interest in science and math courses and encourage them to consider nontraditional career options. The conferences were originated in 1976 by the Math/Science Network in Berkeley, California; since then, more than 142,000 students and 21,200 parents and educators have participated. Every year about 75 meetings are conducted in 20-25 states.

A typical conference takes place on a Saturday at a college or university and is attended by 200-500 young women from middle schools and high schools. The agenda includes a keynote address encouraging girls to persist in mathematics and science courses and two varieties of workshops. In some of the workshops, role models share career awareness information, including job satisfactions, necessary training, and a description of a typical day on the job. Other workshops feature hands-on activities related to a math or science career; workshop titles include "Designer Genes" (classifying genes using a microscope); "Are There Stars in Your Eyes?" (assembling and using a telescope); and "You've Got to Draw the Line Somewhere!" (designing and drafting a building).

Three major outcomes result from Expanding Your Horizons conferences. First, each participating community establishes a volunteer conference planning committee representing a wide range of community groups. Next, each committee develops an active pool of women who work in math- and science-related careers to serve as role models for these students. In 1988, for example, over 5,500 professional women volunteered as conference planners and career role models. Last and most important, young women take more math and science courses—and begin to think of themselves as future mathematicians and scientists.

The Math/Science Network provides sponsors with technical assistance, conference and planning materials, and support services such as coordinated publicity, public relations posters and buttons, and networking among sites. For information about sponsoring a conference in your community or school, or to receive a list of conference sites, please call the author at (415) 841-MATH or write to her at the address below.

*Author's note:* See B.G. Davis and S. Humphreys, (1983), *Evaluation Counts* (Berkeley, Calif.: Math/Science Network) for the results of a National Science Foundation longitudinal study that measured the impact of the conferences.

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## In the professional dialogue about education reform, gender equity received the silent treatment.

### Gender: Our National Blind Spot

The reform reports and the professional dialogue they have spawned fail to take into account the substantial body of research concerning different educational experiences and outcomes for boys and girls. Consider the following:

- Between 1970 and 1984 the National Assessment of Educational Progress conducted three assessments of reading achievement. While girls continue to outperform boys at the 9-, 14-, and 17-year-old levels, the achieve-

ment gap between the sexes has narrowed as girls' performance remains stable and boys continue to make achievement gains. A 1985 National Assessment of Educational Progress showed that by ages 21-25, males have caught up with females in reading and literacy proficiency (Mullis 1987).

- Males outperform females substantially on all subsections of the Scholastic Aptitude Test (SAT) and the American College Testing Program Examination (ACT). The largest gap is in the math section of the SAT followed by the ACT natural science reading, the ACT math usage, and the ACT social studies reading (Dauber 1987).

- On the College Board Achievement Tests, which are required for admission to more selective colleges and universities, males outperform females in European history, American history, biology levels 1 and 2, and mathematics (Stanley 1987).

- Girls attain only 36 percent of the National Merit Scholarships (more than 6,000) awarded each year. These awards are based on the higher Preliminary Scholastic Aptitude Test (PSAT) scores attained by boys (PEER 1987).

- On tests for admission to graduate and professional schools, males outperform females on the Graduate Record Exam (GRE), the Medical College Admissions Test (MCAT), and the Graduate Management Admissions Test (GMAT) (Brody 1987).

Girls encounter sex bias in the classroom as well as on the athletic field (Sadker and Sadker 1985). Report card grades, awarded for compliance as well as achievement, mask much of this educational deficit, but other measures, including standardized tests, highlight the need for gender equity in schools. Girls are the only group who enter school scoring ahead and 12 years later leave school scoring behind. The decline of academic achievement experienced by half our population remains an invisible issue.

### The Case for Real Reform

To ensure all America's children a window of opportunity in the nation's classrooms, a *reformed* movement

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