

Calculating women

Girls perform as well as boys in math. Let's get more of that talent into the academy

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A massive study of boys' and girls' math skills offers the best debunking yet that girls somehow lack a calculating chromosome.

The report, based on standardized test data from 7 million students, showed that, on average, boys and girls performed equally from second through 11th grades. The findings appeared last week in the journal *Science*.

The news is encouraging, and not just because it should finally muzzle stereotypical comments from the lips of parents, teachers, even Barbie ("Math class is tough!").

It means there is one less obstacle to putting women's skills to work in university math, science and engineering programs. With innate ability no longer in question, men and women leaders can focus on making academia more welcoming for female engineers, scientists and mathematicians.

Yes, men and women both. Kathleen Matthews, 62, is Rice University's dean of natural science and personally sailed through a historic series of "firsts" there — first woman on the science faculty, first female chair of the department, first woman dean in sciences.

As a recent Chronicle story noted, Matthews was "totally unconscious" of how rare women were in her field.

Raised in a family of academics, Matthews never considered that science and a scientific career might be hard for her because she was a girl.

Only in recent years, especially after studying the work of Hunter College's Virginia Valian, has Matthews become sensitized to how different the experience has been for most women.

Men and women faculty both inadvertently make math and science culturally difficult for women scholars, Matthews said. Valian's studies of perception show that both sexes make assumptions — sometimes incorrect — about women's leadership abilities.

Meanwhile, the trajectory of academic careers often forces young women to make debilitating choices between career-building and childbearing.

These cultural and structural blocks starve science and math departments of gifted women scholars. Nationally, women account for only 15 percent of Ph.D. students in engineering programs. Rice — which is actively attacking the imbalance — has one woman on its 14-person math faculty.

The problem is more substantive than political correctness. At a time when our international competitors are creating generations of math, science and engineering experts, the United States is needlessly missing almost half of its potential scientists and engineers.

Equally capable in these fields, women are failing to add their intellectual resources at a time when we need all the brainpower we can get.

Looking at the pinnacle of the math scores — the 99th percentile — the models indicate that boys outscore girls by at most a ratio of 2:1. Even if scores alone represented all a mathematician's problem-solving skills (they don't), the figures suggest that women should make up one-third of our math, science and engineering departments. We're not even close.

Now Rice and other universities are trying to lure some of the women scholars they've historically missed. Matthews is spearheading Rice's effort, which is funded by a \$3.2 million grant from the National Science Foundation.

Making the academy more rewarding for women is slow work, Matthews acknowledged. But once the bridges are built, American science, math and engineering will benefit from an army of untapped talent.