

Another Angle

Biology cannot explain lack of women in science

Science and engineering fuel the economy of many countries and are critical for solving societal problems in human health and the environment. Yet, no country currently draws on the entire pool of individuals capable of making a contribution to science, as the number of women in high-level positions in science and engineering remains small. At a recent conference on women and minorities in science, Harvard University President Lawrence Summers attempted to explain the underrepresentation of women in these fields. The



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explanations he provided created a controversy that may even cost him his job.

Summers began by contending that differences in innate ability between men and women may explain why fewer girls have top scores on science and mathematics tests in late high school years. This comment angered many female faculty members at Harvard and elsewhere. There are indeed innate differences between men and women in many traits, but does this apply to aptitude in science? The Y chromosome has very few genes. Except for the SRY gene, most of them are unimportant. The SRY acts as a genetic switch that triggers the expression of other genes, leading eventually to the production of high amounts of the hormone testosterone in individuals with a Y chromosome.

Differences in hormonal environments are responsible for differences in morphology and behavior of men and women. However, while hormonal differences cause men and women to differ in their levels of aggressive behaviors, there is no scientific evidence that supports an equivalent difference for



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SOPHOMORES STEPHANIE SIMON, left, Valerie Woodring and Eilan Levkowitz do genetics testing in a biology lab. Controversial comments from Harvard University's president have sparked discussion about why there are fewer women than men in the sciences.

intelligence, creativity or aptitude in science or mathematics. In contrast, there is a large body of literature on the complex sociological factors that reduce the attractiveness of science for females. For instance, being good in mathematics is typically not expected, not encouraged and not valued in women.

After making his initial claim, Summers then posited that inadequate representation of women in high-level positions in science reflected the reluctance or inability of women who have children to work 80-hour weeks. This assertion implies that 80-hour weeks are needed for intellectual creativity and academic excellence. But this is simply untrue. Though creativity needs hard work to be productive, several studies (including one published last month by a Harvard professor!) show that creativity is stifled by deadlines and overloaded agendas. The assumption that overloaded weeks are needed, and the fact that many men are willing and able to meet these

expectations, has driven many women away from faculty positions, especially from those at top universities where there are sometimes unreasonable expectations on young faculty.

A growing number of women have demonstrated extraordinary innate ability and the kinds of creativity, determination and hard work that are essential for success in science and engineering. To face the challenges ahead of us, we need more individuals with such talents to use their gifts for scientific discovery. Academic institutions have the responsibility to continue to nurture young women interested in science by providing strong and positive mentoring and by developing cultures and policies that enable women with children to better excel in the careers of their choice.

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