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## Expect the best: Girls can excel at math and science with the right encouragement

Thursday, February 17, 2005

By Barbara Mistick

Fred Rogers is well known around the world for his daily reassurance to children -- boys and girls -- that they are special. Fred believed -- and research has documented -- that the emotional development of children is equally important as the cognitive development of children. Some call this the nature vs. nurture question.

Last month Lawrence H. Summers, president of Harvard University, caused a stir with some private remarks that quickly became national news. At a conference of economists examining the role of women and minorities in science and engineering, Summers suggested that perhaps the reason we see an under-representation of women in science and math careers is because of innate differences. He referenced studies that show that boys continue to outpace girls in top scores on science and math tests. President Summers suggested that perhaps it is just not in girls' natures to be good at math and science.

President Summers -- the head of one of the nation's most respected institutes of higher learning -- was telling girls and young women that they are not expected to do well in math and science. What his remarks ignored, however, is the wealth of research that shows that gender gaps in interest, confidence and performance begin to emerge in late elementary and middle school years -- not at birth as the nature argument would imply -- and that before middle school years, girls outscore boys.

Research also shows that one reason why this gap emerges is because many people assume that math, science technology and engineering are intellectually out of reach and inappropriate for girls and women.

In the wake of the controversy he unleashed, Summers offered public apologies and appointed two task forces at Harvard, one on women faculty and one on women in science and engineering. But the fallout continues; many people at Harvard are calling his leadership into question.


Herein lies the dilemma: If you say girls can't, then girls will begin to believe that

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they can't. Summers has fallen into the age-old trap of getting what he expects.

In research recently conducted by the Girls, Math & Science Partnership at Carnegie Mellon University, we have been told by girls that there are several factors why they are not motivated to pursue math and science careers; it's because math and science are difficult, boring and personally irrelevant, they say. It is up to us -- parents, teachers, employers and even university presidents -- to find ways to prevent math and science from being boring and irrelevant and, instead, show and teach them the mysteries of science and the wonders of math. If we do, our young people will accept the challenge and work hard to reach these goals.

Why not expect the best from our girls? If we do, we'll get their best.

Family Communications, which was founded by Fred Rogers, initiated the Girls, Math & Science Partnership in response to research by The Heinz Endowments that showed girls in our Western Pennsylvania region were trailing boys in participation level and test scores in math and science. Recognizing that full participation by both girls and boys in math and science is necessary to meet future work force demands we have initiated a wide range of community engagement activities to promote math and science literacy.

As to nature or nurture? Girls tell us that they believe that boys and girls are equally good at both math and science. Let's listen to our children. It's time we recognize children are influenced by the messages they hear in the media, and from their parents and teachers.

Let's not tell our children that it's OK not to do well in math and science, and particularly that we don't expect girls to do well in math and science. Instead, let's encourage their curiosity, invite them to explore and give them room to grow.

By cultivating their best skills in math and science, art and literature, philosophy, music and engineering, we will secure their future and ours. This country needs every mathematician and scientist it can educate.

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