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Janet E Mertz* (mertz@oncology.wisc.edu), McArdle Laboratory, 1400 University Avenue, Madison, WI 53706-1599. *Girls Can Do Math, But Most Don't Due to Cultural Factors.*

Lawrence Summers hypothesized in 2005 that a major reason for the paucity of women mathematicians among the faculty of elite universities might be gender differences in extreme innate ability in mathematics. This commonly held belief is largely based upon data from standardized tests such as the SAT and GRE, tests which only examine proficiency in grade-level knowledge. The Study of Mathematically Precocious Youth also uses the SAT; thus, it mainly identifies moderately gifted children with the motivation, opportunity, and social environment necessary to accelerate through the US's K-10th grade mathematics curriculum. To identify students with truly exceptional ability in mathematics, I have collected data from the USAMO, IMO, Putnam Competition, and training camps for prospective participants in these competitions. The IMO, taken by the very top mathematics students from about 85 countries throughout the World, provides information regarding cultural differences among countries as well. I show that women who possess this extreme math ability do exist; however, cultural factors likely inhibit most girls and, even, many boys in the US from studying mathematics at the level necessary to be identified as very highly able in this field or to pursue it as a career. (Received September 23, 2006)