

Math key factor in career fields where women are underrepresented

July 24 2015, by Christine Metz Howard

Math – not college faculty's belief that female students lack brilliance – points to why fewer women are in STEM fields, research at the University of Kansas shows.

The findings challenge a study published earlier this year in the journal *Science* that concluded women were underrepresented in academic fields where faculty believe success is dependent on "raw, innate talent," which faculty chronically stereotype as a shortcoming for women.

Recent research at KU shows when GRE scores are factored in, female representation correlates with the amount of [math](#) in the field, making faculty beliefs about a student's ability irrelevant.

"To me it is all about the mathematical content of the field. Girls not taking math coursework early on in middle school and high school are set on a different college trajectory than boys," said Donna Ginther, KU professor of economics and director of KU's Center for Science, Technology & Economic Policy at the Institute for Policy & Social Research.

Ginther and Boston University economist Shulamit Kahn's technical comment challenging the Jan. 16 article, "Expectations of brilliance underlie gender distributions across academic disciplines," will be published Friday, July 24, in *Science*.

Ginther noticed that a graph from the Jan. 16 article showed similar

results to a graph that she and a team of researchers compiled for a study on science's gender gap.

The faculty beliefs study correlated academic fields by the percentage of females who earned doctoral degrees and faculty beliefs about innate ability. Ginther's graph correlated academic fields by percentage of female doctoral degrees and average GRE math scores. Both showed the most math-intensive fields had the lowest percentage of female doctoral degrees.

"Their results didn't add up," Ginther said of the faculty beliefs study.

Combining data from the faculty beliefs study with GRE scores, Ginther and Kahn found the higher the field's GRE math requirements, the fewer women in the field. The research also found the larger the gap between a higher math and lower verbal score, the more likely someone was to enter a math-intensive field, which favored men.

"What we are saying is very similar. They say the attitude of the people in the field is preventing women from getting a Ph.D. We are saying those attitudes may or may not be a factor, but really it happens a lot earlier than college," Ginther said.

The research supports Ginther's earlier study on the gender gap in math-intensive STEM fields. In that study, the main policy recommendation was to provide intervention programs as early as elementary school to improve young girls' math skills.

"If you want to increase women's participation, you have to really target your intervention at the source, and that source is young girls, not women in college," Ginther said.

Provided by University of Kansas

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