

Gender gap in STEM majors linked to high school job plans

May 10 2013, by Lori Sonken

(Phys.org) —The fact that women are much less likely than men to choose science, technology, engineering and math (STEM) majors in college can be traced to gender differences in occupational plans in high school, reports a Cornell study.

Male [high school seniors](#) are more than four times more likely than female students to plan to enter a STEM or doctoral-level medical occupation. When these same [young men](#) and women entered college, the young men were more than twice as likely as young women to select STEM or doctoral-track medicine majors.

Even women who aspire to STEM occupations are less likely to declare a STEM major in college than young men, the study reports.

"It's well established in the research literature that young women are more likely than young men to leak out of the STEM pipeline in college. Our study shows that this uneven attrition occurs even among young women who aspire to be scientists, doctors or engineers," said Stephen Morgan, professor of sociology and the lead author on the paper published online in the peer-reviewed journal *Social Science Research*.

"Surprisingly, the literature on STEM major choice has been so focused on gender differences in work-family goals, test scores and prior academic preparation that it hasn't carefully assessed the impact of gender differences in occupational plans," said Morgan. "We show that very little of the [gender gap](#) in STEM major selection is due to

differences between men and women in their desire to have children or in their standardized [math test](#) scores, grades or science coursework in [high school](#)," added Morgan.

"The weak effect of work-family goals contradicts a lot of popular theories that claim that women choose [motherhood](#) over science," said co-author Kim Weeden, also a professor of sociology. "And it doesn't seem to be the case that gender differences in occupational plans are just picking up differences in young men and women's desire for a family life.

"[The differences found] could be due to differences in men and women's experiences in science as college freshmen or sophomores," Weeden explained. "Other research shows that many women who enter college with the intent to major in a STEM field have interactions with peers and professors that discourage them from staying in STEM," she said.

The study used data from a random sample of 12,591 high school sophomores in 2002. The students were re-interviewed as seniors and two years after graduation by the U.S. Department of Education. These data allowed the researchers to trace students' educational decisions and occupational plans over time.

The paper, "Feeding the Pipeline: Gender, Occupational Plans, and College Major Selection," was also co-authored by Dafna Gelbgiser, a graduate student in the field of sociology. It was funded by the National Science Foundation and Cornell's Institute for the Social Sciences' (ISS) Faculty Fellows' program. Weeden currently serves as the Robert S. Harrison director of the ISS.

Provided by Cornell University

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