

Social Problems

Demographic Characteristics of High School Math and Science Teachers and Girls' Success in STEM

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Abstract

Given the prestige and compensation of science and math-related occupations, the underrepresentation of women and people of color in science, technology, engineering, and mathematics majors (STEM) perpetuates entrenched economic and social inequities. Explanations for this underrepresentation have largely focused on individual characteristics, including uneven academic preparation, as well as institutional factors at the college level. In this article, we focus instead on high schools. We highlight the influence of the intersection between race and gender of female math and science teachers on students' decisions to major in STEM fields. Theoretically, this article extends the political science concept of representative bureaucracy to the issue of women's and disadvantaged minorities' underrepresentation in STEM majors. We analyze longitudinal data from public school students in North Carolina to test whether organizational demography of high school math and science faculty has an association with college major choice and graduation. Using hierarchical probit models with an instrumental-variable approach, we find that young white women are more likely to major in STEM fields and to graduate with STEM degrees when they come from high schools with higher proportions of female math and science teachers, irrespective of the race of the teacher. At the same time, these teachers do not depress young white or African American men's chances of majoring in STEM. Results for African American women are less conclusive, highlighting the limitations of their small sample size.

<https://academic.oup.com/socpro/article-abstract/63/1/87/1845557/Demographic-Characteristics-of-High-School-Math?redirectedFrom=fulltext>

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