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Black Women Express More Interest in STEM Majors Than White Women, But Earn Fewer STEM Degrees, Study Finds

Blacks less likely than whites to view STEM fields as masculine, research shows

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Ethnic Variation in Gender-STEM Stereotypes and STEM Participation (PDF, 100KB) [↗](#)

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WASHINGTON — Black women are more likely than white women to express interest in majoring in science, technology, engineering or mathematics (STEM) fields when they enter college, but they are actually less likely to earn degrees in these fields, according to research published by the American Psychological Association.

Black men and women are also less likely than whites to subconsciously consider STEM fields more masculine, according to the article, published online in the APA journal *Cultural Diversity and Ethnic Minority Psychology* (/pubs/journals/cdp).

“Compared to white women, black women are less likely to hold gender-based stereotypes of STEM fields and, therefore, may be more likely to participate in these majors,” said the study’s lead author, Laurie O’Brien, PhD, of Tulane University.

The authors analyzed data from 1,772,133 college freshmen (56 percent female) who participated in the Cooperative Institute Freshman Survey (<http://www.heri.ucla.edu/cirpoverview.php>) between 1990 and 1999. They observed that 23 percent of black women said they planned to major in STEM fields compared to 16 percent of white women. Among men, 37 percent of blacks said they intended to major in STEM, compared to 34 percent of white men.

The authors noted that this sample was dated and thus conducted three studies surveying a total of 1,108 students at several universities across the United States.

In one of these studies, the researchers surveyed 838 college students (212 black) between the ages of 18 and 56 at four universities — one private, primarily white university in the South; one public, primarily white university in the Midwest; one private, historically black university in the South; and an ethnically diverse public university in the West. In this sample, 38 percent of black women had declared a major in a STEM field, whereas only 19 percent of white women had. Black women at the historically black university were more likely to participate in STEM majors than those at the other institutions. There were no significant differences between black and white men's enrollment in STEM majors.

In addition to asking about the students' majors, the researchers conducted tests to examine participants' subconscious beliefs about STEM fields being associated mostly with men. For example, the participants saw STEM-related words (e.g., astronomy, biology, math) or liberal arts-related words (e.g., arts, English, literature) flash on a computer screen and had to quickly categorize them with words related to men (e.g., boy, father, man) or women (e.g., girl, mother, woman). By examining participants' response times, these procedures measure a person's implicit, or subconscious, beliefs. Results indicated that regardless of their major or the type of university they attended, black women and men were less likely than white women and men to associate STEM fields with more masculine words.

However, among women who earned undergraduate degrees in 2010, only 8 percent of black women earned degrees in a STEM field, compared to 10 percent of white women, according to the National Science Foundation.

"If black women start out in college more interested in STEM than white women, but are less likely to complete college with a STEM degree, this suggests that black women may face unique barriers, such as race-based stereotypes," said O'Brien. "These stereotypes may have more of a negative effect on black women than gender-based stereotype and should be studied further."

Article: "Ethnic Variation in Gender-STEM Stereotypes and STEM Participation: An Intersectional Approach," Laurie O'Brien, PhD, Tulane University; Alison Blodorn, PhD, University of California Santa Barbara; Glenn Adams, PhD, University of Kansas; Donna Garcia, PhD, California State University, San Bernardino; Elliott Hammer, PhD, Xavier University of Louisiana, online Sept. 22, 2014, *Cultural Diversity and Ethnic Minority Psychology*.

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The American Psychological Association, in Washington, D.C., is the largest scientific and professional organization representing psychology in the United States. APA's membership includes nearly 130,000 researchers, educators, clinicians, consultants and students. Through its divisions in 54 subfields of psychology and affiliations with 60 state, territorial and Canadian provincial associations, APA works to advance the creation, communication and application of psychological knowledge to benefit society and improve people's lives.

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