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Freshmen show gains in aspirations for science degrees, but not all arrive at finish line

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While entering college freshmen of all racial and ethnic groups display an equal interest in attaining degrees in science or technology, disparities exist among these groups in degree-completion rates, according to new research by the Higher Education Research Institute (HERI) at UCLA.

Trends from the Cooperative Institutional Research Program's annual [Freshman Survey](#) show that students entering college over the last five years have expressed a much stronger interest in pursuing majors in science, technology, engineering or mathematics (STEM) than students who entered college in the late 1980s and early '90s.

More than a third (34 percent) of entering freshmen now aspire to a major in these areas. Additionally, underrepresented racial minority students have reached parity with their white and Asian American counterparts in their initial interest as freshmen in majoring in a STEM discipline.

The HERI report, "Degrees of Success," also indicates that underrepresented minority students who aspire to a STEM major as entering freshmen have a substantially lower likelihood of completing such a degree within five years than their white and Asian American peers.

Among students who aspired toward a STEM degree as entering freshmen, 33 percent of white students and 42 percent of Asian Americans completed a bachelor's degree in a STEM discipline within five years of entering college, compared with 22 percent of Latinos and 18 percent of African Americans.

Such findings underscore efforts by the federal government and individual institutions to improve STEM degree-completion rates for underrepresented racial minorities.

"It could be that initial STEM aspirants have to redirect their studies and take longer to complete, or that they seek to complete their science degrees elsewhere," said HERI director Sylvia Hurtado, a UCLA professor of education and co-principal director of the study. "This is an area we are pursuing in our study, along with understanding the factors associated with higher retention rates."

Disparities in four- and five-year bachelor's degree-completion rates also exist between students who initially intended to major in a STEM discipline and their peers who entered college with plans to major in other fields of study.

While approximately 56 percent of white students who entered college as STEM majors completed a bachelor's degree in *any* field within five years, more than 73 percent of white students who began as non-STEM majors did so. Similarly, 32 percent of African American STEM aspirants completed a degree in any field within five years, compared with 58 percent of African Americans who aspired to majors in other fields.

"We are losing an alarming proportion of our nation's future science talent during their undergraduate studies," said Mitchell Chang, a UCLA professor of education and co-principal investigator of the study. "If an important national goal is to produce more scientists, it seems that our colleges and universities can aim to improve science-student retention at rates comparable to those for students in other majors."

The research is based on a sample of 201,588 students who entered college in 2004 at one of 326 four-year, nonprofit higher education institutions. Within this sample are 62,115 students who initially reported plans to major in a STEM field.

To view the research brief, visit www.heri.ucla.edu.

The **Post-Baccalaureate Experiences, Success and Transition (BEST)** project conducted this research with funding from the National Institutes of Health and the National Science Foundation. The BEST project is one of several grant-funded projects within the Higher Education Research Institute.

The Higher Education Research Institute is widely regarded as one of the premier research and policy organizations on postsecondary education in the country. Housed in the [UCLA Graduate School of Education & Information Studies](#), the institute serves as an interdisciplinary center for research, evaluation, information, policy studies and research training in postsecondary education.

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