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Closing Transfer Gaps Could Add 18,000 More STEM Bachelor's Graduates

Community College Transfers Less Likely to Earn Degrees in STEM

New York, November 5, 2026 — Each year, tens of thousands of graduates awarded STEM bachelor's degrees are community college transfer students.

But transfer students are less likely to earn degrees in STEM than graduates who start at four-year institutions. Those who earn STEM degrees face longer paths to graduation and are less likely to pursue graduate education—even though prior research shows that their academic performance after transfer is comparable to that of non-transfer students.

A new report from the Community College Research Center at Teachers College, Columbia University—*Unlocking STEM Talent: What Happens to Transfer Students at the Four-Year College?* by Tatiana Velasco and Lois Miller—is the first to provide a national and state-by-state breakdown on the trajectories of community college transfer students in STEM fields and to provide evidence on the extent to which transfer bachelor's completers in STEM pursue graduate education. A central finding from this study is that if transfer students graduated in STEM at the same rate as students who started at universities, there would have been 18,000 more STEM bachelor's graduates in the cohort studied.

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Read the report and executive summary | View state-by-state data on the data dashboard

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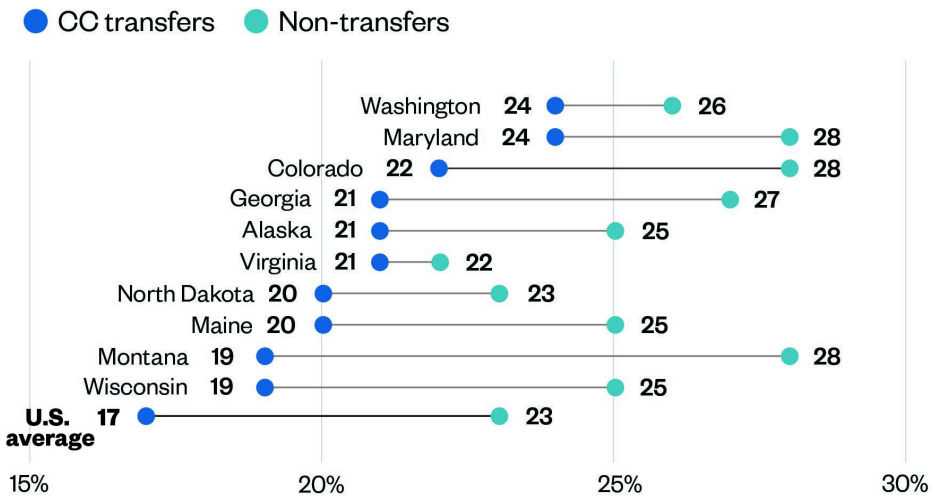
As four-year colleges face growing pressure to expand the number of students pursuing STEM degrees, community colleges offer a largely untapped source of talent. This new report highlights opportunities to increase STEM bachelor's attainment and graduate enrollment while broadening socioeconomic and racial diversity.

"For transfer students, the path to a STEM bachelor's degree is often harder than it needs to be. Our report shows where students fall behind—even compared with transfer students in other fields—and what colleges and state systems can do to strengthen these pathways," said Tatiana Velasco, senior research associate at CCRC, and lead author of the report.

Using data from the National Student Clearinghouse Research Center, the report examines students who entered four-year institutions in 2015–16 and earned bachelor's degrees within six years. It identifies differences across states and opportunities to improve STEM transfer pathways. Here are the major findings:

- **Talent pipeline:** Community college transfers accounted for nearly 56,000 STEM bachelor's graduates, 15% of all STEM bachelor's degree earners in the study cohort.
- **STEM share:** Among bachelor's graduates, 17% of community college transfers earned a bachelor's degree in STEM, compared with 23% of students who started at four-year colleges. Closing that gap would grow the number of STEM graduates by more than 18,000 a year.
- **Time to degree:** Only 16% of STEM transfer graduates finished within four years of starting community college, compared with 20% of non-STEM transfer graduates. The delay mostly happens after transfer, with STEM transfers spending an average of nearly five months longer at their four-year institution after transfer. Graduates in engineering, computer and information sciences, and physical sciences face the longest post-transfer paths.
- **Graduate enrollment:** STEM transfer graduates are less likely to continue into graduate school within one year than non-transfers (12% versus 17%).
- **State comparisons:** State differences point to opportunities for improvement. Washington, Maryland, and Colorado had the highest STEM shares among transfer bachelor's graduates. Washington's gap between transfer and non-transfer graduates was just 2 percentage points (24% versus 26%), compared with 6 points nationally. California and Florida also performed well on several measures.
- **Demographic differences:**
  - **Broader diversity:** Community college transfers broaden the socioeconomic and, to some extent, the racial diversity of STEM bachelor's graduates.
  - **Race, income, and gender gaps:** Among community college transfer bachelor's graduates, the share earning STEM degrees was below the overall average of 17% for Black (13%), Hispanic (14%), low-income (16%), and female (10%) students.
  - **Gaps in timely completion:** Among STEM transfer graduates, only 12% of Black, 11% of Hispanic, and 14% of low-income students finished within four years of starting at a community college, compared with 16% overall. Their longer paths reflected additional time both before and after transfer. In contrast, women who completed in STEM were more likely to complete on time (21%).

Top 10 States by STEM Share Among Transfer Bachelor's Graduates



Transfer and timely graduation are challenges across fields, but tightly sequenced STEM programs make course planning and credit alignment especially important. Drawing on these findings and prior transfer research, the authors recommend three priorities for universities, community colleges, and state systems:

1. **Four-year institutions need to remove barriers after transfer**. They should clearly map STEM prerequisites and course sequences, help transfer students enter the appropriate sequence immediately, and ensure access to required upper-division courses. They should also strengthen pathways from STEM bachelor's degrees into graduate education.
2. **Community colleges should help more students enter and successfully navigate STEM transfer pathways**. They should expand STEM career exploration, particularly among women, Black, Hispanic, and low-income students, and help students become 'major-ready' by completing the math, science, and other lower-division requirements for their intended major before transfer.
3. **States and higher education systems must build the infrastructure for strong STEM transfer pathways.** They should bring community colleges and universities together to align lower- and upper-division requirements, ensure community college coursework applies to STEM degrees, and use data to identify and close gaps in transfer, bachelor's completion, and graduate enrollment.

The findings in this report are aimed at helping college and state leaders assess challenges and opportunities in expanding STEM talent through community college transfer pathways. By focusing on the post-transfer pathway, this report highlights that broadening STEM attainment requires sustained collaboration among community colleges, universities, and state systems—from helping students explore STEM careers to supporting bachelor's completion and graduate study.

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The Community College Research Center (CCRC) has been a leader in the field of community college research and reform for 30 years. Our work provides a foundation for innovations in policy and practice that help give every community college student the best chance of success.