

New research may explain shortages within STEM careers

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A new study by the University of Georgia revealed that more college students change majors within the STEM pipeline than leave the career path of science, technology, engineering and mathematics altogether.

Funded by a National Institutes of Health grant and a National Science Foundation Postdoctoral Fellowship and done in collaboration with the University of Wisconsin, the study examined interviews, surveys and institutional data from 1,193 students at a U.S. midwestern university for more than six years to observe a single area of the STEM [pipeline](#): biomedical fields of study.

Out of 921 students who stayed in the biomedical pipeline through graduation, almost half changed their [career](#) plans within the biomedical fields.

"This was almost double the number of students who left biomedical fields altogether," said Emily Rosenzweig, co-author of the study and assistant professor in the Mary Frances Early College of Education's department of educational psychology. "This suggests that if we want to fully understand why there are shortages in certain STEM careers, we need to look at those who change plans within the pipeline, not just those who leave it."

Rosenzweig examined students' motivations for changing career plans and found that students were more often inspired to make a change because a new field seemed more attractive.

This finding pointed to an underexplored research area that educators, policymakers and administrators should devote more attention to in the future. Rather than focusing only on what makes students disenchanted with a particular career, factors that make alternative career paths seem valuable to students need to be considered.

"The sheer number of changes made by students who remained in the biomedical pipeline highlights the divergence of paths students take in their career decision-making," Rosenzweig said. "We should not simply assume that students are staying on course and progressing smoothly

toward intended careers just because they have not left the [STEM] pipeline."

Ultimately, the research provides new insights about students' motivations for choosing various careers inside the STEM pipeline and demonstrates the importance of understanding this group if schools are to promote retention in particular STEM careers.

More information: Emily Q. Rosenzweig et al, Inside the STEM pipeline: Changes in students' biomedical career plans across the college years, *Science Advances* (2021). [DOI: 10.1126/sciadv.abe0985](https://doi.org/10.1126/sciadv.abe0985)

Provided by University of Georgia

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