

Researchers design survey to tap students' motivation in STEM

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Researchers at Portland State University are learning more about undergraduates' experience in science, technology, engineering and math (STEM) classes and sharing a set of survey questions that will help researchers and educators at other universities do the same.

This survey was developed by a team of [researchers](#) in PSU's STEM Equity and Education Institute with the help of instructors in chemistry, biology and physics. Published this October in the *International Journal of Science Education*, the survey can be used by educators, researchers and program developers to "peek under the hood" of students' experiences in STEM classes. These insights can help instructors improve their teaching strategies and reach out to students who may need some additional motivational support to perform better in challenging STEM courses.

Over the last several decades, scientists and mathematicians have helped education experts improve STEM courses at both college and K-12 levels. But previous studies have shown that success in math and science is not due solely to students' academic skills and preparation. Motivational factors—like feelings of belonging and a positive identity as a scientist—are also key to success in STEM majors and careers. These PSU study findings give researchers and educators some more tools to address those motivational factors in undergraduates.

"We all know that [student](#) motivation is essential to learning and success in STEM," said Ellen Skinner, a PSU psychology professor who led the

study. "But in a class of several hundred students, it can be hard to get a good read on where each student is at. We think that this survey zooms in on important student concerns, like whether they feel welcome in the community of [science](#). We are excited to help bring the student's voice to the ears of educators and researchers here at PSU and at other campuses nationally."

More information: Ellen Skinner et al, A motivational account of the undergraduate experience in science: brief measures of students' self-system appraisals, engagement in coursework, and identity as a scientist, *International Journal of Science Education* (2017). [DOI: 10.1080/09500693.2017.1387946](#)

Provided by Portland State University

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