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The Scientific Teaching Practices Survey for Undergraduate STEM Courses

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Title
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Abstract
The National Academies Summer Institutes on Undergraduate Education (SI) is a faculty development workshop in which STEM instructors are trained in the Scientific Teaching (ST) pedagogy and encouraged to implement its practices at their home institutions. While participants generally report positive experiences at the SI, it remains unclear how these experiences affect instructors' teaching practices and associated student outcomes. As part of a larger effort to evaluate the SI, we developed a survey to gauge the frequencies of ST practices that could occur in undergraduate STEM courses. The ST Practices Survey is derived from the observable teaching practices described in the Scientific Teaching taxonomy (Couch et al., 2015). During survey development, we conducted interviews with a panel of experts, instructors, and students, and this input was used to make iterative revisions to the survey. After finalizing the survey, we administered the survey at 9 institutions with 62 instructors and 64 courses, with both instructors and students completing the survey for a given course. In this seminar, we will discuss the development, validity, reliability, factor structure, and implementation of the ST Practices Survey.