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Crewse

## **Examining Students' Expectations for Laboratory Learning in a Majors' Introductory Biology Course**

Presenter: Matthew Crewse

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**Abstract:** Within the last decade, authentic and inquiry-based laboratory experiences have emerged as a viable mechanism for promoting students' development of scientific reasoning and experimental design skills at both the introductory and advanced levels. Despite this being the case, however, little is known about students' expectations for learning in such contexts. To address this concern, we first developed and validated a novel instrument known as the Colorado Expectations for Laboratory Learning (CELL) survey. Using a pre-/post-course study design, quantitative and qualitative data were then collected in the laboratory sections of a large enrollment, majors' introductory biology class to identify students' initial expectations and to examine whether or not these expectations were met at the end of the semester. Preliminary data suggest that >70% of students prefer an inquiry-oriented laboratory course that includes a variety of both formative and summative assessments (e.g., Clickers, research proposals) and that is co-taught by both an undergraduate and graduate teaching assistant. Furthermore, while students initially possessed relatively high expectations in regard to the role of the instructor and overall learning objectives of the laboratory experience itself, post-course analyses indicated that these expectations were not entirely met. Together, these data reaffirm an important role for authentic research opportunities in introductory biology coursework and provide new insight into how such courses might be better structured to promote student learning and success.