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2021 SEA Faculty Meeting Abstract

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Recitation Activities Support Better Understanding of Data Analysis in SEA-PHAGES CURE

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Course-based undergraduate research experiences (CUREs) are widely known to improve student learning outcomes in the sciences. However, undergraduate students have a particularly difficult time interpreting the scientific data that they generate in these experiences – especially when lacking opportunity and exposure to science processes prior to entering higher education. Therefore, it is vital to structure these research experiences such that students can see maximal gains in their skills. This is especially true in the SEA-PHAGES lab experience, where we must contend with intro-level students having little or no knowledge of phage biology. In the SEA-PHAGES lab experience at The Ohio State University, we observed that while students made rapid gains in science process skills over the course of the semester, they still struggled to interpret the data they generated. To address this issue, we designed and implemented a set of five recitation activities to complement the lab experience, termed Recitation Activities to Improve Literacy in Science (RAILS). Using an adapted student assessment of learning gains (SALG) survey, we observed that these activities improved students' perceived ability to interpret their data, and students reported that they experienced significant gains in their data analysis ability as a result of the activities. We hope that other SEA-PHAGES instructors will similarly benefit from utilizing these recitation activities as part of their implementation of the curriculum.