

## **Katie Sweitzer**

Measuring the Impact of Introducing Computation in Introductory Physics Courses: The STEMcoding Project

Computation has become a standard tool for practicing scientists and engineers. Educators and education researchers have been working to find the best ways to integrate this into the curricula at all levels to best prepare students for careers in STEM fields. The STEMcoding project integrates programming activities in introductory physics courses at the high school and undergraduate level. I analyzed pre- and post-assessment data from the Fall 2017, Spring 2018, and Fall 2018 semesters of General Physics II at the University of Mount Union and compared this data with results from the Brief Electricity and Magnetism Assessment – a nationally recognized undergraduate physics assessment. I analyzed how students answered a few basic conceptual questions before and after completing the STEMcoding activities to see if the activities helped provide a better understanding of those concepts. I also compared the STEMcoding assessment results to the BEMA results to see how the context of these questions reflected students understanding of certain physical concepts. This work will contribute to the pursuit of integrating computation into classrooms to prepare students for STEM careers.