Abstract Submitted
for the TSS17 Meeting of
The American Physical Society

Review of research on student learning of physics through computation AARON COLLINS, HUNTER CLOSE, Texas State University — "Programming is everything." According to the recent Joint Task Force on Undergraduate Physics Programs report "Phys21: Preparing Physics Students for 21st Century Careers", the most common thing that physics graduates entering the STEM workforce say they wish they could have learned is programming. The growing PICUP (http://www.compadre.org/PICUP/index.cfm) movement in physics instruction is expanding both the opportunities and the need for physics education research focusing on student learning of computation. New research should be grounded in existing literature on student learning in computer science. We review studies to understand the state of teacher professional development in the area, visual programming environments, and student learning of computational concepts. In particular, we look at research on Scratch and VPython environments and idea-mapping as a method of assessing computational thinking.

Hunter Close
Texas State University

Date submitted: 17 Feb 2017 Electronic form version 1.4