

Abstract Submitted
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Does interactive instruction in introductory physics impact long-term outcomes for students? VERNITA GORDON, The University of Texas at Austin — Early college classroom experiences contribute greatly to students leaving STEM majors. Peer instruction is a research-based pedagogy in which students, in small groups in the classroom, discuss concepts and work short problems. A single study at Harvard found that taking peer-instruction introductory physics also increases persistence in science majors. To what degree, if at all, peer instruction helps retention and performance for STEM majors at large public institutions (like University of Texas, Austin) is not known. Here I describe the results of a retrospective pilot study comparing outcomes for students who took different sections of the same calculus-based introductory mechanics course in Fall 2012 and Fall 2014. Compared with traditional lecture sections, peer-instruction sections had a 50% lower drop rate, a 40% / 55% higher rate of enrollment in the 2nd / 3rd courses in the sequence, and, for the Fall 2012 cohort, a 74% / 165% higher rate of graduating from UT Austin / the UT Austin College of Natural Sciences by Fall 2015. I will discuss weaknesses of this retrospective pilot study and present plans for an intentionally-designed study to be implemented beginning Fall 2017.

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