
High School AP Physics Education through a Small Private Online Course

Description

Boston University (BU) proposes to implement a new model of Advanced Placement (AP) physics instruction for high school students by using a Small Private Online Course (SPOC). The project seeks to work with schools and students from schools that do not offer AP Physics 1. The course will run from September 2015 through May 2016.

The BU AP® Physics 1 Small Private Online Course is an official College Board audited course.

The primary instructional tool will be the BU AP® Physics 1 edX platform SPOC and associated online discussion forum. The Small Private Online Course model will come in two flavors. In Model 1a (SPOC⁺) participating students will also come to the BU campus to receive additional mentoring/tutoring from near peer BU undergraduate physics majors trained in instructional engagement and supervised by the project director. These tutoring services are provided at no cost to student participants or participant's school. In Model 1b (SPOC^o) students will not receive additional supports outside the online components.

Students will receive a stipend for their full participation, be eligible to receive high school credit for AP Physics 1 and, based on financial need, will have their College Board AP Physics 1 May 2016 test registration fee waived.

BU Team and Project Director

There is a strong team at Boston University interested in working on this initiative: It will be led by Mark Greenman, Research Fellow and Teacher in Residence working jointly in the School of Education and physics department in the College of Arts and Sciences. Also, Bennett Goldberg, director of STEM Education Initiatives in the Office of the Provost; Karl Ludwig, chair of the physics department; Andrew Duffy, physics faculty, AP® Physics 1 MOOC primary author, and principal investigator for our PhysTEC grant; and Peter Garik, SED faculty and principal investigator for our Robert Noyce Teacher Scholarship grant.

Mark D. Greenman will serve as the project director. Mark has served over the last three years as a Research Fellow and Teacher in Residence (TiR) at Boston University (BU). Prior to joining the Boston University staff, he served as a science and mathematics teacher, district science curriculum director, district math curriculum director, district computer coordinator and science professional development provider for the state of Massachusetts. Mark has taught AP physics for 25 years and his students over that time period obtained an average score of 4.2 out of a maximum score of 5 with 70% of all his students taking the AP physics exam. Mark has received national recognition as recipient of the Presidential Award for Excellence in Mathematics and Science Teaching, the Paul W. Zitzewitz Award for Excellence in Pre-College Physics Teaching from the American Association of Physics Teachers and the Albert Einstein Distinguished Educator Fellowship served at the National Science Foundation (NSF) in Washington, DC. Mark, along with 4 other high school AP physics teachers and lead author Professor Andrew Duffy, BU physics department faculty, authored the BU edX platform "AP® Physics 1" massive open online course (MOOC).

If you are interested in learning more about participating in this project, kindly respond to Mark D. Greenman at your earliest convenience.

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