



# American Association of Physics Teachers

29 September 2016

President Barack Obama  
The White House  
1600 Pennsylvania Ave. NW  
Washington, DC 20500

Dear President Obama,

The American Association of Physics Teachers (AAPT) has been a long-time supporter of active learning and a leader in promoting research-based active learning methods for K-12 education. Our activities support both in-service and pre-service teachers. Here we list a few of the Association's activities.

### **AAPT Promotes Physics Education Research Providing Evidence for Active Learning**

For more than 40 years, AAPT has fostered the development of Physics Education Research that has provided the evidence of the effectiveness of active learning in physics education at all levels. A synthesis of that research can be found in Jennifer L. Docktor and José P. Mestre, "Synthesis of discipline-based education research in physics," *Physical Review Special Topics – Physics Education Research* **10**, 020119 (2014).

### **AAPT Provides Extensive Resources for Active Learning**

To make active learning strategies more accessible to faculty, AAPT, with support from the National Science Foundation developed the web site [PhysPort.org](http://PhysPort.org), which provides curated guides to more than 50 active learning strategies (with summaries of the evidence of their effectiveness) and more than 80 research-based assessment tools to test for the effective implementation of those strategies.

### **AAPT Provides Active Learning Professional Development for K-12 Teachers**

At the K-12 level, AAPT has provided peer-led professional development for teachers of physics through its [Physics Teaching Resource Agents](#) for more than 30 years. That program has emphasized the importance of active learning and provides teachers of physics with the content knowledge and the pedagogical knowledge needed to implement active learning effectively for all students.

### **AAPT Promotes Integrating Computational Thinking and Physics to Aid Active Learning**

Recognizing the importance of computational thinking in all STEM careers, the AAPT leads an NSF-funded [STEM+C project](#) and co-leads a [100Kin10-funded project](#) to integrate Modeling Instruction (an active learning strategy developed for physics) and Bootstrap (an active learning approach to learning algebra through computer science). These efforts are focused on "physics first" courses in schools where all students take physics, thus making computational thinking work accessible to a much wider range of students compared to those served by the typical stand-alone computer science courses in secondary schools.

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*Strengthening Physics Education. Supporting Physics Teachers.*

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**AAPT Increases the Number of Highly Qualified Physics Teachers Using Active Learning**  
AAPT and APS, with support from NSF, have developed the [Physics Teacher Education Coalition](#) to enhance the engagement of physics departments in the education of future K-12 teachers of physics. As a result of that program, the number of highly qualified physics teachers has almost doubled in the past ten years. In addition, the diversity of these new physics teachers is significantly greater than that of physics majors overall and that of the current cohort of teachers of physics nationwide.

**AAPT Engages Physics Master Teacher Leaders to Promote Active Learning**  
AAPT has recently established the [Physics Master Teacher Leader Corps](#) to provide the Association with guidelines and recommendations for enhancing its professional development programs for K-12 teachers of physics. Many teachers in the Corps will become leaders in those professional development programs, which then provide a platform for them to enhance the teaching of physics across the country.

**AAPT Foster the Development and Dissemination of Active Learning Strategies through Meetings and Publications**

AAPT's national meetings and its annual Physics Education Research Conference are the primary mechanisms for physics teachers and physics education researchers to meet, share the results of their work, and to develop new ideas to further enhance the adoption of active learning techniques at all levels of physics education. The AAPT's journals, *The Physics Teacher*, *The American Journal of Physics*, and *Physical Review Special Topics: Physics Education Research* support the dissemination from researcher to practitioner.

Sincerely yours,

Beth A. Cunningham  
Executive Officer