How to Approach and Sustain a Department-Level Introductory Teaching Reform
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The Department of Physics at The George Washington University started to reform the introductory physics and astronomy courses in active-learning format in 2008. These changes have been informed by the SCALE-UP pedagogy and targeted both algebra-based and calculus-based physics courses, as well as astronomy courses. As of last year, all of the introductory physics courses are delivered in SCALE-UP mode, and half of the introductory astronomy courses follow that format as well. These courses are taught by 15 faculty assisted by 11 graduate teaching assistants (GTAs), accommodating about 600 students per semester. The transformation involved faculty at all levels (tenured, tenure-track and part-time), as well as GTAs and undergraduate Learning Assistants. I will describe the critical implementation elements of the approach and the infrastructure that was created to sustain the reform. In addition, I will present several assessments with the most impact on long-term changes of faculty attitudes towards the adoption of evidence-based teaching methods.