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**Research on U.S. physics teacher education**

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College and university physics departments have long been the primary source of physics-specific education received by the nation's high school physics teachers, who now number nearly 30,000. Since the 1880s, U.S. physicists have set out specific expectations and recommendations for the education of physics teachers, and various methods and programs have been utilized to prepare these teachers. However, relatively little research has been done regarding the effectiveness of the various instructional methods. Only rarely have there been investigations of links between physics teacher education programs, and the learning outcomes of students taught by teachers who were educated in those programs. The available evidence suggests that physics teacher education programs that utilize materials and methods developed and validated through physics education research (PER) have been particularly effective in preparing well-qualified teachers. I will give an up-to-date review of the research in this area, and discuss relevant details of the investigation recently reported by the APS/AAPT/AIP Task Force on Teacher Education in Physics (T-TEP) [D. Meltzer, M. Plisch, and S. Vokos, editors, *Transforming the Preparation of Physics Teachers: A Call to Action* (APS, College Park, 2012)].