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Sustained programs in physics teacher education

RACHEL SCHERR, Seattle Pacific University

For over a decade, physics teacher education programs have been transformed at a number of institutions around the country through support from the Physics Teacher Education Coalition (PhysTEC), led by the American Physical Society in partnership with the American Association of Physics Teachers. In 2012-2013, PhysTEC supported an independent study on the sustainability of its sites after project funding ends. The study sought to measure the extent to which programs have been sustained and to identify what features should be prioritized for building sustainable physics teacher education programs. Most PhysTEC legacy sites studied have sustained their production of physics teachers. A few sites studied have thriving physics teacher education programs, that is, programs that have continued to substantially increase their production of teachers since the PhysTEC award. All of the studied sites that sustained their production of physics teachers have a champion of physics teacher education and corresponding institutional motivation and commitment. The necessity of the champion was known from the Report of the Task Force on Teacher Education in Physics (T-TEP report) and borne out by this study. The necessity of institutional motivation and commitment is a finding of this study. At some sites, PhysTEC support has precipitated an institutional focus on physics teacher education, leveraging other resources (including both awards and personnel) benefiting physics teacher education. The study also documented the sustainability of components of physics teacher education programs, such as recruitment, early teaching experiences, and a teacher in residence. Sustained components tend to be those that have direct benefit to undergraduates in the physics department, whereas less-sustained components seem to be those that primarily benefit secondary teachers. The number of sustained components does not appear to correspond to teacher production; that is, sites that have sustained more (or fewer) components do not produce larger (or smaller) numbers of teachers. This result further supports the finding that the presence of the champion and corresponding institutional motivation and commitment are the key features of successful physics teacher education programs.