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Physics Teacher Preparation's Role in the Transformation of a Physics Department

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Physics teacher preparation programs offer one vehicle of creating sustained educational transformation within a physics department. Strategic implementations pave the way for developing more and better prepared physics teachers while providing a cohort of trained peer instructors to drive reform in the physics course sequence. We present the design and results of the new physics teacher preparation programs implemented at Florida International University (FIU). FIU implemented University of Colorado's Learning Assistant (LA) program in 2008, through the support of a PhysTEC Primary Partner Institute Grant. The LA program is an experiential teaching program for undergraduates that recruits and prepares future teachers while driving reform in the department, as LAs must experience research-validated curricula in order to make informed decisions about teaching in their future. FIU's Physics LA program now employs over 40 LAs, impacts over 2,000 introductory physics students per year, and is now fully sustained by university funding. The LA program's success has prompted a spread to chemistry, earth science, mathematics, and biology and serves as the foundation in the university's strategic vision. The impact is most compelling as FIU is a minority-serving urban public research institution in Miami, Florida serving over 42,000 students, of which 64% are Hispanic, 13% are Black, and 56% are women.