SES11-2011-000238

Abstract for an Invited Paper
for the SES11 Meeting of
the American Physical Society

Transforming the undergraduate physics program at Florida International University[1]

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We describe the ongoing physics transformation underway at Florida International University (FIU), highlighting activities that target institutionalization of innovative physics practices. We report on several coherent efforts to improve the undergraduate physics instruction at FIU. These programs include Modeling Instruction, a studio based, integrated lab-lecture course in which students learn by building, validating, and extending models; the Learning Assistant program, an experiential program that recruits top students into teaching careers and provides a vehicle for classroom reform; and reformed curricula in laboratory sections. These reforms have contributed to a 1500% increase in the number of graduates (comparing current three-year averages to the early 1990's), while FIU's undergraduate enrollment grew 180%. Our results are most compelling, as FIU is a minority-serving urban public research institution in Miami, Florida, serving over 44,000 students, of which 64% are Hispanic, 13% are Black, and 56% are women.

[1]Supported by NSF Award # PHY-0802184.