ABSTRACT

HCC-Dale Mabry is part of the Hillsborough Community College (HCC) District in Tampa, Florida, and a two-year, public, comprehensive, Hispanic-Serving Institution in the heart of Tampa’s Hispanic community. Unlike more affluent coastal neighborhoods, this area is severely disadvantaged: compared to Caucasians, Hispanic families have three times the incidence of poverty and half the per capita incomes and bachelor’s completions. Yet Tampa offers tremendous opportunity, notably in STEM, and a greater percentage of Hillsborough County’s bachelor-degreed Hispanics hold science, engineering, and related degrees than Caucasians (41% vs. 39%, Census 2009).

Recognizing this opportunity, HCC-Dale Mabry’s student body has grown to more than 14,000 per year, with 56% minority, 28% Hispanic, and a majority of low-income students. HCC-Dale Mabry is committed to preparing more Hispanic and low-income residents for careers in STEM, but gaps in our programming limit access and result in poor achievement: many would-be enrollees find their classes filled, and among students who do enroll, an average of 36% fail key math, life sciences, chemistry, and physics courses; some failure rates are as high as 68%. Only 12% of transfer-directed students graduate and only 16% transfer for bachelor’s degrees within three years of enrollment. Gaps include inadequate access through limited distance education and on-campus STEM facilities, ineffective STEM instruction, and insufficient academic planning, advising, and transfer support.

HCC-Dale Mabry therefore proposes a project titled Expanding STEM Access and Success which addresses the purpose of the HSI STEM and Articulation Programs, to expand and enhance educational opportunities for, and improve the academic attainment of, Hispanic students. The project will increase the number of STEM courses offered in distance formats, improve the effectiveness of instruction in key classroom and existing distance courses, and develop effective STEM planning, advising, and transfer support services. A Biology Lab, STEM Success Center, and STEM Transfer Center will be renovated, and current instrumentation will be installed in STEM classrooms and labs. The project also includes creating a model articulation plan with the University of South Florida, our transfer students’ primary destination, and USF supports joint faculty work toward more closely aligned curricula and standards and collaborative faculty development to improve instruction and student progress.

Meeting Project Objectives yields gains including enrollment access for nearly 600 more distance students, at least 160 of whom are Hispanic / low-income, nearly 900 more classroom and distance students (with more than 250 Hispanic / low-income students) earning grades of C or better in key courses, 5% greater fall – fall retention, and graduation and transfer rates meeting national averages as verified through formative and summative data collection and analysis. The project thereby addresses USDE HSI Program Performance Measures and responds to the 2011 Absolute Priorities (STEM, articulation) and Competitive Preference Priority: project management and ongoing evaluation will obtain high-quality, timely data to continuously improve outcomes for HCC-Dale Mabry STEM students. The five-year budget request totals $4,347,999, and annual expenses to sustain new practices and improvements represent $50.22 per key course student (5,560, including 1,612 Hispanic / low-income students).