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Preparing minority undergraduate students for successful science careers.¹

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Xavier University of Louisiana is well known for being number one in graduating the most minority students in physical and biological sciences. The reason for this success is built on the concept of Standards with Sympathy in the Sciences (Triple S). This is an outgrowth of over twenty years of planning and development by the Xavier science faculty to devise a program for preparing and retaining students in the sciences and engineering. Xavier has been successfully conducting for over ten years, Summer Science Academy (SSA) for middle and high school students; Science Technology, Engineering and Mathematics (STEM) Scholars and Howard Hughes Biomedical programs for in-coming freshmen. Recently, through a grant from NSF, we have developed the Experiential Problem-solving and Analytical Reasoning (EPsAR) summer bridge program for in-coming freshmen who were given conditional admission to the university (i.e., those students who scored below the acceptable range for placement into degree mathematics courses). In this program, EPsAR participants will be engaged in problem-solving and critical thinking activities for eight hours per day, five days per week, for six weeks. Additionally, an interdisciplinary approach is taken to convey the mathematical skills learned to relate to physics, chemistry, biology, and computer science. Sixty-six students have participated in the last two years in the EPsAR program. During the first year 23 of 28 students successfully bi-passed the algebra review course and were placed into a degree credit course in mathematics. In the second year, thirty-one (31) of the 38 were advanced to a higher-level mathematics course. Twenty-three (23) out of 38 went on to degree credit math course. To retain students in the sciences peer tutoring in all the science disciplines are made available to students throughout the day for 5 days per week. Faculty and students are available to give guidance to the needed students. The University has established a Graduate Placement Office and a Center for Undergraduate Research to facilitate students' pursuit of graduate studies. The results of these efforts indicate a 40 percent graduation rate in four years and increased to 90 percent in six years in the natural sciences and 50 percent of these graduates pursue graduate/professional careers.

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