

Work In Progress - Expanding the Ph.D. STEM Student Pool along the US-Mexican Border

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Abstract - Nationwide, minority students remain largely underrepresented in Science, Technology, Engineering, and Mathematics doctoral programs. The University of Texas System Louis Stokes Alliance for Minority Participation has spearheaded a project to increase the number of underrepresented minorities who pursue graduate degrees in these disciplines. Through the “Bridge to the Doctorate” project, we have recruited 34 students and offered them financial support to succeed in their efforts. We have monitored their progress as they transition into the research phase of their doctoral programs, informed them about the dissertation process, offered workshops about effective teaching strategies, prepared them for faculty interviews, and advised them on the process of negotiating start-up research packages for new faculty. With this level of financial support and mentorship, we anticipate that 100% of the students will earn a Master’s degree and that more than 90% will earn a Doctorate within five years.

Index Terms – underrepresented minorities, support, matriculation, doctoral programs

PROJECT DESCRIPTION

In an attempt to broaden participation by underrepresented groups in science, technology, engineering, and math (STEM) disciplines, the National Science Foundation (NSF) created the Bridge to the Doctorate (BD) project under the umbrella of the Louis Stokes Alliance for Minority Participation (LSAMP) program. The goal of these projects is to support and mentor students during the initial two years of graduate study at Phase III LSAMP institutions. The University of Texas (UT) System LSAMP, which brings together nine UT institutions and six community colleges, has participated in this supplemental activity since its inception in 2002.

Typically, BD funding is \$360,000 per year to provide stipends for twelve (12) Master’s students (\$30,000/student) and \$126,000 each year for tuition and related cost-of-education expenses (10,500/student). A high level of importance is placed on providing enhanced opportunities for LSAMP graduates. These opportunities include support for them to succeed in graduate programs at the UT System host site and preparation for them to enter and complete doctoral programs, both in STEM fields. These students begin graduate studies in STEM disciplines in the fall of the cohort year with plans to enter the professorate after the completion of their Master’s degree. The students in each cohort are also

provided funds to attend one professional meeting or conference per year. They are also expected to attend the National Science Foundation’s Joint Annual Meeting.

To date, the UT System LSAMP program has recruited 34, qualified students to the BD projects on the University of Texas at El Paso (UTEP) and the University of Texas Pan American (UTPA) campuses. These students were separated into three cohorts for a period of two years per cohort at the two institutions. The distribution was: 2003-2005 cohort (UTEP; 10 students), 2004-2006 cohort (UTPA; 12 students), and 2005-2007 (UTEP; 12 students). After completing the first phase of the BD project at UTEP, 100% of the students earned MS degrees and 50% of them matriculated to doctoral programs. By the fall of 2006, 100% of the students involved at UTPA will have earned MS degrees and 90% will have matriculated to doctoral programs in the U.S. The prospective site for the 2005-2007 BD cohort is the University of Texas at Dallas (UTD).

A system has been developed to track BD students. Contact information is obtained from the students before they graduate. The LSAMP coordinator follows up every six months with the students via phone or email to determine their employment or academic status. A spreadsheet contains this information and will be updated every six months. There is also contact between the LSAMP coordinator and a representative at the doctoral institution of interest for each student to insure matriculation of all students into the doctoral program of their choice. The LSAMP coordinator works with the campus representative to schedule site visits and additional activities that facilitate matriculation.

As of spring 2006, six of the BD students from UTEP have matriculated to doctoral programs. Two students have graduated with MS degrees in Electrical Engineering. Of these two students, one has matriculated to the doctoral program at Texas A&M University and the other has been accepted into the doctoral program at Rice University. Two students have graduated with MS degrees in biology. One of these students is currently in her second year of the doctoral program at Washington University and the other has finished her first year in the M.D./Ph.D. program at the University of North Texas. The remaining two students have earned MS degrees in Materials Engineering and both are enrolled in the Materials Engineering doctoral program at UTEP. The remaining students from this cohort are currently using their MS degrees to work in the industry.