

Work in Progress: International Experiences for Undergraduate Scholars through the University of Texas System Louis Stokes Alliance for Minority Participation

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Abstract - Since 1992 the National Science Foundation (NSF) has provided funding to the University of Texas (UT) System to maintain a state-wide Alliance under the auspices of the Louis Stokes Alliance for Minority Participation (LSAMP) initiative. Currently in its fourth five-year phase, the UT LSAMP maintains its initial vision of producing high-quality scientists and engineers from underrepresented backgrounds through the proven method of intensive undergraduate research. With the inception of Phase IV, the expectations were elevated to include an international travel component for students involved in LSAMP research. This component was implemented based on the NSF's declared goal that all STEM graduates should be prepared to compete in a global economy following graduation. To date, nineteen students have participated in UT LSAMP international activities. The expected outcome for each student involved is an understanding that science and engineering are international fields and that effective research collaboration is now truly international. All STEM students should shift their thinking to maintain a "global" mindset whether they prepare to enter academia or industry. This paper will discuss our experiences with international travel coordination, strategies for conference and student selection, faculty opinions on the international component, and student perceptions before and after the international experience.

Index Terms - global, international, research, underrepresented students

PROJECT DESCRIPTION

Based on the NSF's goal of preparing underrepresented minority students for international STEM collaboration, the UT LSAMP has organized a series of international activities that primarily involve international conference participation for undergraduate students who participate in the annual UT LSAMP Summer Research Academy (SRA). The Alliance's leadership team meets annually to select the international conference that the group will attend. One

international activity is planned per year and a total of two have been completed. Three more will be executed by the completion of the UT LSAMP's Phase IV grant cycle in 2012. Each campus in the Alliance selects one student to participate in the international experience and each student is accompanied by their UT LSAMP campus director, and occasionally, by their research mentor. To date, eighteen students have participated in the international group experience. In total, eight females (4 Hispanic and 4 White) as well as ten males (2 Black, 7 Hispanic, and 1 White) have attended.

RESULTS

After implementing a student selection process, a total of nineteen students have participated in our international experiences. The student selection process consists of an essay competition in which each interested student composes a detailed essay discussing several topics: 1) the importance that undergraduate research has had in their academic career, 2) their motivation to attend an international conference, and 3) how this international experience will positively affect their future plans as STEM researchers. Each student submits their essay to their SRA campus director and the directors select the best essay during a blind review that takes place in August of each year. The student who is selected is the official representative for their campus and is contacted immediately regarding their selection and preparation for international travel. The selection of the international conference is made by the Alliance's leadership team and conferences that are considered must meet the following criteria: 1) take place during the fall semester, 2) have a comprehensive theme that includes disciplines in science and engineering, 3) has a focus on international collaboration and its benefit to society, and 4) be an English-speaking conference. To pilot this experience, one student attended a week-long visit to *La Universidad de Concepcion* in Concepcion, Chile in 2007. The first, official group experience took place in October of 2008 when eight students attended the Futuropolis 2058 Conference in Singapore. The second event took place in November of

2009 when 10 students attended the World Science Forum in Budapest, Hungary.

After two group excursions, several observations have been made by the leadership team: For the majority of students participating this was their first international trip. In fact, it may have been the first out-of-state trip that the students had experienced in their lifetime. Consequently, most students do not have a passport and need to acquire one before the official departure date. Since students are selected to participate in August of each year, they must apply for their U.S. passport immediately in order to receive it by the selected travel date. The third observation is that most students who participate in the SRA do not want to attend the international conference for various reasons. The most common reason is the consequence of missing one week's worth of classes. The second is a fear of being in a foreign country and not knowing the language. The third is lack of funds to support travel costs beyond conference registration, hotel, airfare, and per diem, all of which are covered by the UT LSAMP. In terms of travel coordination, the Alliance has noted that in addition to official conference activities, the participating students also enjoy touring local universities and visiting several cultural sites. The Alliance has noted that it is best if these extracurricular excursions occur before the start of the conference so that the students are focused and engaged during conference sessions.

A total of 18 campus directors and/or faculty members have participated in the UT LSAMP international experiences as chaperones. All chaperones have expressed their support and gratitude for the experience that these activities provide to them and their students. Most chaperones are able to use these conferences as networking opportunities for their research and campus-based programs. Additionally, each chaperone has expressed how positively each experience has affected their student. This activity also allows the chaperones to mentor their students in a way that cannot be achieved through on-campus activities or laboratory experiences.

All students who have attended these activities expressed a new-found interest in studying abroad once they returned to the United States. Their reflective essays literally state that working in a foreign country had never been an option to them until they participated in their LSAMP international experience. Many of the essays also state that the students were not aware of how many resources were available to them to perform research at their

home campus. Although they admit that there were many similarities in the research work that was being done both locally and abroad, they noticed that many of the labs they visited on their trips were ill-equipped to handle the intensity of the research. One interesting point that was noted from the reflective essays was the amount of research that each student put into the trip before their departure. Each student expressed the fact that many hours were spent researching the conference they would be attending, the workshops it would offer, the country they would be visiting, the history of the city they would be visiting, and the language and currency that would be used. In researching all of these points, the students also indicated that they had a preconceived notion of what their international experience would entail. In most cases, the students admitted that they had underestimated the importance of their trip and that the experience had a profound impact on them once they returned home.

CONCLUDING REMARKS

After three international experiences, it is clear that these conferences and group experiences are having a positive impact on our students. The simple fact that they have changed their mindset to think globally and work and study abroad speaks volumes to the influence of a well-planned, one-week activity. Additionally, it is essential to have a strong chaperone team in place to assist with the planning, execution, and maintenance of an international experience involving inexperienced undergraduates. The ultimate goal of our activity is to encourage our students to expand their horizons and to understand that science and engineering are universal themes, have a universal language and a worldwide impact for our society.

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