Developing Pathways to Geospatial Intelligence for South Texas Students: First Year Results

Haibin Su and Brent Hedquist

Department of Physics and Geosciences, Texas A&M University–Kingsville, MSC 175, Kingsville, Texas 78363

ABSTRACT

   South Texas is one of the most underrepresented areas in terms of STEM (science, technology, engineering, and mathematics) education and one of the most economically disadvantaged regions in the nation, based on the 2010 U.S. census. Due to a lack of relevant curricula and the inadequacy of instructional infrastructure, public awareness and education and training in GEOINT (geospatial intelligence) within the region are far behind the national average across all education levels. The leading factors that deter students from entering a geospatial program were unawareness of the GEOINT disciplines and potential career opportunities after graduation. With the support of a NGA (National Geospatial Intelligence Agency) grant, we designed and built the pathways to train, educate and produce a workforce, particularly underrepresented Hispanic graduates, with necessary geospatial knowledge, skills and expertise in South Texas through research and development of relevant curriculum and establishment of GEOINT academic programs. The major approaches that are used for this project include: (1) introducing the importance and application of GEOINT in high schools and community colleges; (2) creating and offering a two-week training course for local high school instructors to teach geographic information system (GIS) courses; (3) providing course material, lab equipment, GIS software licenses and teaching support for local high schools; (4) establishing a new GIS Minor program by adding new GIS/remote sensing courses to existing courses offered within the GIS Minor program; (5) increasing on-campus student interest in geospatial technologies and attracting highly-qualified students to enroll in the GIS Certificate program by offering GEOINT research assistantship positions; and (6) establishing a department level two-day field trip to visit research-oriented universities in order to expose students to graduate level research and motivate students to pursue graduate degrees in GEOINT fields. During the first year, two local high schools have successfully implemented the GIS course, with three other schools committed to offer the class.