In this paper we examine the challenges of recruiting and retaining underrepresented and first generation students in the STEM fields for a Hispanic-Serving Institution and present some of the successful solutions we have utilized. Some of the challenges we have observed are: getting the students in the STEM fields and educating the students about careers; reaching and helping the students that are not prepared for college courses in math; and finally making sure our students have the resources necessary to be successful in school and when they leave. To help our students from the time they arrive until they finish we have developed an advising center staffed by scientists. They meet with the students to discuss the classes they are taking, research and internship opportunities, graduate school, and possible career paths. The advising office has been successful in helping students conduct research, present their work at conferences, get into graduate school, and medical school. For incoming students a transition program was developed to help students needing developmental math courses. This was done by producing peer led team learning to help with course material and the transition to college. In general the students that have used these opportunities have performed better. (Received September 21, 2011)