

Creating a Thriving Geoscience Program at a Small, Minority-Serving Public University

California State University, Bakersfield (CSUB) is located in Kern County in the southern San Joaquin Valley of California. It is the only comprehensive 4-year university within a radius of over 100 miles with a mandated service area the size of West Virginia that also includes parts of the Mojave Desert, the Sierra Nevada mountains, and the Great Basin. This is a rapidly growing area of California, generally characterized by low educational attainment and low income. It has a large and fast-growing minority population from groups underrepresented in the sciences (mostly Hispanic) and a low college-going rate. The vast majority of CSUB's students are from this region and the student body reflects its demographics. With about 8,500 students, CSUB is one of the smallest campuses in the 23-campus California State University system.

The economy of CSUB's service region is based primarily on petroleum and agriculture in the San Joaquin Valley, as well as military bases and research facilities, and the emerging alternative energy and private aerospace industries in the eastern desert areas. The low educational attainment and the lack of a well-trained science, engineering, and technology workforce is a serious impediment for these industries and the region's economy. Career opportunities for geoscientists in the region are excellent.

Our students, especially those from underrepresented groups, often have substantial responsibilities outside of their college career. Many are supporting families, others are single parents, and almost all work to pay for their education. As a result, students tend to be very pragmatic about their education and want a degree that will lead to professional employment in their chosen field. Due to the lack of rigorous geology classes at high schools, students enter the university unaware of the field and the excellent career opportunities it provides. If they have an image about geologists, it is usually that they work outside in hot and dusty places. This is exactly what our first-generation college students whose parents and grandparents are often field laborers want to get away from. Recruiting geology majors from our student body is therefore a challenge.

CSUB's Department of Geological Sciences has stepped up to this recruiting challenge in a number of ways: 1) We work with area high schools to offer rigorous geology classes that attract college-bound students (Gillespie et al, 2013). 2) We changed our promotional materials which used to highlight field trips and field work to a focus on job opportunities and geology students working on sophisticated analytical instruments or on computer models. 3) We provide scholarships that make it easier for students to succeed and complete their degrees in a timely manner. 4) We use students, alumni, and professionals from the community as role models in K-12 outreach efforts.

As a result, the department now has well over 100 undergraduate majors with demographics similar to the university as a whole. In 2012/2013, 18 students graduated, 8 from underrepresented groups. In Fall 2013 we had 33 new freshmen geology majors.

Reference

Gillespie J. M., Knight P., Kiouses S, and Baron D. (2013) The establishment of a successful dual credit high school geosciences program: A case history from Kern County, California. 2013 Annual Meeting of the Geological Society of America, Denver, Colorado, October 28, 2013. <https://gsa.confex.com/gsa/2013AM/webprogram/Paper229574.html>