
ED51E-0558 Fostering Science Identity Through Research Experiences in a National Park: Stories From a Keck REU Gateway Project



Friday, 15 December 2023



17:30 - 21:50



Poster Hall A-C - South (Exhibition Level, South, MC)

Abstract

Identity and belonging are key components to student longevity in STEM and are particularly important for retaining BIPOC, low-income, and first generation students. Previous work emphasizes the importance of scientific competence, research performance, and recognition by scientific community members as key to building a STEM identity that persists (Carlone & Johnson, 2007), increasing the likelihood of retention into the STEM workforce. The Keck Geology Consortium REU, with funding from NSF, developed the Gateway program for rising sophomores in 2017 to support and build these three components of science identity for underrepresented undergraduates in the geosciences. Here we present stories from the Glacier National Park, Montana environmental geoscience Gateway project, alongside consortium-wide data, and consider ways in which scientific identity is developed.

In summers 2018 and 2022 we brought together groups of 5-8 students, mostly from underrepresented groups, all of whom were finishing their first year of college. Students were from a variety of backgrounds and institutions, but primarily from SLACs, and had little/no prior research experience. Projects lasted 5 weeks, with one week of pre-field knowledge and skill development (*competence*) two weeks in the field in eastern Glacier National Park collecting data, and two weeks at the Continental Scientific Drilling (CSD) laboratory at the University of Minnesota analyzing sediment cores. Students presented their research at subsequent Geological Society of America meetings (*performance* and *recognition*).

Survey results and anecdotal stories suggest all three key aspects of STEM identity-building were supported by the projects. In addition to identity and values activities at the project start, blogging and reflection activities supported development and integration of a science identity. Performance and recognition opportunities were threaded throughout; students shared their research with the public (Park visitors encountered in the field), with Park Rangers/Interpretive staff (during informal presentations), and with staff, students, and visiting scientists at the CSD (daily interactions in the lab). These less-official forms of performance and recognition greatly contributed to the students' sense of ownership and expertise.

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