

The Science & Math Investigative Learning Experiences Program
(The SMILE Program)

Project:

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Project Website: <http://smile.oregonstate.edu>

Project Categories: Programs, Staff/Professional Development, Curriculum Development, Infrastructure, Evaluation and Assessment

Primary Target:

How to Reach Primary Target: We engaged underserved youth in afterschool STEM clubs to support their school success and college readiness.

Secondary Target: Classroom Teachers

How to Reach Secondary Target: Classroom teachers serve as club advisors and mentors for the youth in the afterschool SMILE Clubs.

General Demographics: rural, low-income, first-generation-in-college, mostly female, and Latino and American Indian

Funders

National Science Foundation
4201 Wilson Blvd
Arlington, VA 22230
<http://www.nsf.gov>

Funders: U.S. Department of Education
<http://www.ed.gov>

Howard Hughes Medical Institute
4000 Jones Bridge Road
Chevy Chase, MD 20815-6789
<http://www.hhmi.org>

Evaluation Strategy: The SMILE Program maintains a database of student participants to track their continuation in SMILE, school persistence, high school graduation, and college entrance. Additionally, survey instruments are used with teachers, students, and adult family members to assess both quality and impact of programming services.

Project Descriptions

Summary: The SMILE Program offers a comprehensive model for engaging 4th - 12th grade youth in meaningful STEM learning in the afterschool setting. Teacher professional development in science and mathematics is key to program success, as these classroom teachers

serve as club advisors and youth mentors. Engaging partners and supporting their participation is another critical program element. These partners include college faculty, undergraduate students, graduate students, agency officials, and community members. Students meet weekly in afterschool clubs of ~20 students and 2 advisors. In this community, students explore STEM content, process skills, and every day applications through engaging activities, occasional field trips. Annually, students participate in a college-connection event that is designed to provide a capstone academic experience and to immerse the students in a college environment. Club advisors participate in three professional development workshops each year. These workshops total 7 days of substantive learning opportunities in STEM content, pedagogy, and professional learning community interactions. Families are engaged through community family math and science nights, small and large group meetings, and other community events that support increased capacity of adult family members to support school success and college readiness of SMILE students. College students are integral partners in SMILE's work with youth. College students serve as team mentors, role models, camp instructors, cabin counselors, and activity leaders. They provide a connection that is powerful because it comes through a near-peer. College students are supported in their roles through a science education outreach class, pre-event preparation sessions, graduate assistantships, and senior capstone projects. University faculty partners help to ensure the accuracy of content, as well as meaningful context for both youth and teacher programming. They help to build the stories of why science and science research matter and facilitate connections to the lives of students and teachers. It is also through faculty partners that significant program funding is gained. SMILE has been very successful serving as science education outreach partner on various scientific research projects

Impact:

The SMILE Program supports the academic vision, school success and college readiness of the participating youth. SMILE students have learning opportunities that support their knowledge and skills in mathematics and science; experiences on college campuses that build their capacity to envision themselves as future college students; interactions that help them build connections between their classroom and SMILE Club experiences and the everyday world around them; and enhanced sense of belonging and self-efficacy. By working with the students' families and communities, SMILE helps to expand the base of support expecting the students to be successful.

Lessons:

Over our first twenty years, SMILE has learned much about effective strategies to engage and support partners in STEM enrichment; establishing and maintaining collaborative relationships with schools and classroom teachers; connecting with families through a variety of

STEM learning opportunities; and developing capacity and flexibility in STEM programming for youth.