

**UNIVERSITY OF CALIFORNIA, SANTA BARBARA
CHANCELLOR'S OUTREACH ADVISORY BOARD
FACULTY OUTREACH GRANT AWARDS, 2015-2016**

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1. INNOVATIONS IN RECRUITMENT OF UCSB, TRANSFER, AND UNDERREPRESENTED MINORITY STUDENTS INTO STEM OUTREACH PROGRAMS

PI: Norbert Reich, Chemistry

Funded: \$20,000

Project Summary: SciTrek is a science outreach involving Chemistry/Biochemistry and education faculty and UCSB graduate and undergraduate students. The goal is to expose K-12 students and teachers to the scientific process, including critical thinking, evidence-based learning, and an understanding of how argumentation is essential. A key element is the professional development for teachers who typically do very little science activities (K-6) or do little inquiry-based instruction (grades 7 and on). SciTrek has significantly expanded in the last 12 months to include 24-7th and 8th grade classrooms in three schools in addition to 37-2nd-5th grade classrooms; with all but one of our affiliated schools being public, much of our engagement of these have high percentages of underrepresented minority (URM) students.

The project will identify the most impactful approaches to engage UCSB and Santa Barbara City College students. Such engagement improves student retention, academic performance, matriculation rates, and personal satisfaction. In particular, the project will work with transfer students, students attending SBCC with the intent of attending UCSB, and URM students. The goal is to identify the best practices to facilitate the growth of SciTrek as well as other outreach efforts at UCSB.

2. TRI-LINGUAL EARLY LITERACY EDUCATION FOR INDIGENOUS MIGRANT MIXTEC CHILDREN IN OXNARD: A COMMUNITY-BASED PRESCHOOL PROGRAM

PI: Amy Kyratzis, Education

Funded: \$18,308

Project Summary: This project will help the children of the indigenous migrant Mixtec community in Oxnard preserve and honor their home language and use their

community's language and literacy practices as a basis for learning literacy skills in English and Spanish by bringing the community's language and literacy practices into local area Migrant Head Start preschool classrooms and by bringing women of the community in to teach the children. Through honoring the indigenous language, community literacy knowledge, and ethnic identity of indigenous migrant Mixtec preschoolers in Oxnard as they are about to enter the elementary schools that are the feeder schools into Intermediate schools within Oxnard School District, which in turn are the feeder schools into UCSB "partner" high schools within Oxnard Union High School District, (Rio Mesa High School, Hueneme High School, Oxnard High School, Channel Islands High School, and Pacifica High School), the program will build extended discourse skills and establish a foundation for the future reading success of the children, strengthening their pathway to higher education.

3. THE OCEANS-TO-CLASSROOM CULTURALLY RELEVANT ENVIRONMENTAL SCIENCE AND TRAINING (O2C CREST PROJECT)

PI: Mark Brzezinski, Ecology, Evolution, and Marine Biology

Funded: \$10,000

Project Summary: The Oceans-to-Classrooms Culturally Relevant Environmental Science and Training (O2C CREST) outreach project consists of three main activities that are transformative in student academic preparation and classroom approach and curriculum: 1) a three-day, 24-hour professional development workshop for 6th-8th grade teachers from Santa Barbara and Ventura County Schools and two meaningful environmental educational experiences for the students of these teachers during the school year, 2) pedagogical and science content training for UCSB undergraduates to serve as outreach educators; and 3) program support for other on-campus outreach programs, such as EAOP, SIOP, etc. This project includes a number of unique opportunities designed to provide substantial contributions to the future of California's children from Preschool through College (P-20) and should significantly impact the aspirations and achievement of students.

4. DEVELOPING SELF-SUSTAINABLE STEM HANDS-ON "LEARNING BOXES" FOR 3RD AND 5TH GRADE CLASSROOMS

PI: Sumita Pennathur, Engineering

Funded: \$10,000

Project Summary: Based on recent successful outreach activities, the Pennathur Lab proposes to develop two of these activities into self-sustainable "learning boxes" that may be purchased by teachers/schools all around the country to enhance and supplement their current curricula with common core aligned hands-on learning activities. The activities include 1) a hands-on math learning technique using food coloring, water, plastic syringes and "solution dilutions" for 3rd graders and 2) a hypothesis-driven chemical

chromatography experiment involving household reagents and M&Ms® for 5th graders. The project will generate prototype boxes, research and align the boxes with the Common Core State Standards (CCSS) and Next Generation Science Standards (NGSS), test the systems with volunteer classrooms both locally and nationally, and finally develop next generation versions that will propel these learning boxes to the status of “self-sustained STEM education tools” by the end of the 2016-2017 school year., Proceeds generated will not only be sufficient to sustain these outreach activities, but also enough to enable donation of boxes to local schools with large populations of underrepresented students.

5. PERSONAL NARRATIVES FOR HIGHER EDUCATION

PI: Candace Waid, English

Funded: \$1,291

Project Summary: This project will create a series of four workshops entitled “Personal Narratives for Higher Education” for seniors at San Marcos High who are participating in PEAC (Program for Effective Access to College). PEAC is a college access program that seeks to increase high school and college graduation rates of low-income Latino students at San Marcos. PEAC seniors do not receive the support or guidance needed in the college application personal statement writing process because many are not in English classes during the fall due to SB Unified School District’s use of block scheduling. UCSB graduate and undergraduate instructors will support PEAC students in the planning, drafting and revision process through various activities, discussions, and editing sessions. PEAC students will produce personal statements, receive targeted writing tutoring, and through the process, reflect critically on their long-term educational and professional goals. The project staff will produce curriculum for this series that will be disseminated to PEAC and potentially the UCSB Pathways program for future implementation.