

**UNIVERSITY OF CALIFORNIA, SANTA BARBARA
CHANCELLOR'S OUTREACH ADVISORY BOARD
FACULTY OUTREACH GRANT AWARDS, 2016-2017**

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1. CREATING AN AUGMENTED-REALITY SANDBOX FOR TEACHING AND LEARNING ABOUT EARTH SURFACES (CASTLES)

PIs: Jennifer King, Kelly Caylor, Danielle Harlow, Alan Murray.

Award: \$15,253

Project Summary: CASTLES will focus on exposing students of all ages to geographical sciences through a hands-on, low barrier, highly accessible, intuitive sandbox activity to explore processes at Earth's surface. This high tech augmented reality sandbox (AR Sandbox) allows users to shape and interpret landforms in real time through projection of topographic contours and hydrologic features onto the manipulated sand surface. FOG funding will enable the PIs to collaborate on the development and implementation of a STEM outreach program centered on multidisciplinary ways of studying Earth's surface through use of the AR Sandbox. We are partnering with programs on campus (e.g. Early Academic Outreach Program; Mathematics, Engineering, Science Achievement) to engage students, especially high school students, to encourage pursuit of college degrees in STEM fields. The interactive capabilities combined with science and technology in real time is particularly ideal for reaching a broad audience, enabling the engagement of diverse ethnic, cultural, socio-economic and gender groups.

2. MOTIVATING LATINA HIGH-SCHOOL STUDENTS TO PURSUE AND PERSIST IN STEM MAJORS: A MENTORING PROGRAM LED BY UCSB UNDERGRADUATE WOMEN

PI: Laura Romo

Award: \$11,263

Project Summary: Latina women are significantly underrepresented in the number of all STEM degrees earned, across academic levels. While much of the research on STEM majors in college has focused on the college years as the source of racial and gender gaps in STEM degree completion, more research is needed on the high school years to explain why students do or do not pursue STEM majors in college. The goal of this project is to create a program which will enable high-ability-STEM Latina high-school students to receive mentoring from UCSB undergraduate women who are STEM majors. All high school students will be participants of the MESA program which provides both motivational and academic support to underrepresented minority students to increase the likelihood that they will attend college and pursue a STEM career. The undergraduate women will host luncheons to share stories of their journey from high school to college and conduct focus groups for the high-school students to share concerns about potential challenges. Continued contact will be maintained through the undergraduates'

participation in activities held by the MESA program and through social media. Longitudinal data will be collected through interviews to assess the effectiveness of the mentoring program on students' motivation and also environmental factors that led to their decisions to ultimately pursue or not pursue a STEM major. In addition, interview data will be conducted from the students at the completion of their freshman year of college to understand factors that led to them persisting in the major.

3. THE CURIE-OSITY PROJECT: A COMMUNITY-BASED COLLABORATION WITH GIRLS INC. AND UCSB

PIs: Diana Arya, Danielle Harlow, Rick Benjamin

Award: \$7,000

Project Summary: The Curie-osity project aims to engage groups of young female students (8-11 year olds) in research about women scientists and engineers at UCSB and hands-on, inquiry-based activities related to the work of these women. All participating members of nearby Girls Inc. sites (which serve girls from Goleta and Santa Barbara schools) are eligible to join this yearlong science and literacy program designed to benefit young female students and elevate the visibility of UCSB female scientists and engineers. The final outcome of this collaboration will be a series of publications celebrating women in STEM career contexts.

4. THE COMMUNITY ARTS COMMONS

PI: Kim Yasuda

Award: \$6,000

Project Summary: The Community Arts Commons proposes a year long, community-engaged classroom exploration in partnership with pre- and after-school programs that serve the underrepresented resident families of Isla Vista. Initiated by a team of UCSB faculty and students from Art, Theatre and Dance, Film + Media, Black Studies, Music and Sociology, this proposal builds upon existing relationships and established partnerships forged through past successful pedagogical pilots at UCSB and in Isla Vista: Jeffrey's Jazz Coffeehouse 2016; Art + Energy: Elementary School Energy Education and Public Lighting, 2015-16; Creative Placemaking Isla Vista, 2015. The requested funds will support the critical next year of curricular arts program development and attendant social programs, shaped in partnership with community stakeholders to assure future K-12 classroom integration and long-term impacts through multi-generational family member participation. Implementation and assessment of this next year of programming will identify key mechanisms and opportunities to be integrated and sustained in the K-12 classroom to become part of a year-round arts curriculum, while also fostering educational innovation through academic and community partnerships.