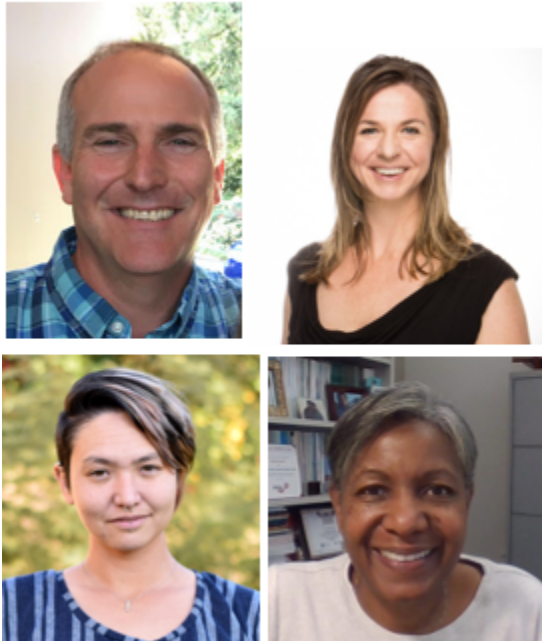


**Project Title:** Skills, Opportunity and Achievement through Research (SOAR)  
**Applicants:** Lisa Worthy, David Boninger, Ladonna Lewis, and Mari Willeman



**Category most strongly aligned to the project:** Learning and Teaching  
**Criteria that best apply to the innovation:** Replication, creativity, and timeliness

**Project summary:**

Glendale Community College's (GCC) Skills, Opportunity and Achievement through Research (SOAR) was a summer psychology research workshop designed for underrepresented, ethnic minority high school students. The purpose of SOAR was to provide a bridge to college for traditionally underrepresented students, by using a structured curriculum and engaging students in small group, student - directed research projects. Fourteen students created and implemented an experimental research study exploring topics in psychology. SOAR introduced students to educational opportunities in STEM, and careers in related fields and to psychology as a discipline. Additionally, students increased their knowledge of research methods and were provided opportunities for research skill development through peer to peer and faculty mentoring. Students reported increased confidence and college success self-efficacy. SOAR is a teaching and learning innovation that also addresses issues of equity on campus.

**Project Description:**

Glendale Community College's (GCC) Skills, Opportunity and Achievement through Research (SOAR) was a summer psychology research workshop designed for underrepresented, ethnic minority high school students. The purpose of SOAR was to

provide a bridge to college for traditionally underrepresented students, by using a structured curriculum and engaging students in small group, student - directed research projects. We used a lecture/lab format where students participated in 45 minutes of lecture followed by 45 minutes of lab time. During the lab, students worked on creating and implementing an experimental research study exploring topics in psychology. SOAR students earned college credit and received a \$150 stipend upon completion of the semester.

Higher education research indicates that minority students are underrepresented in science, technology, engineering and math programs and have higher numbers of attrition than white students. Research has revealed that high impact educational practices (HIP) can improve student retention and engagement while in college. Additionally, high impact practices have demonstrated long term benefits for graduate school application and career planning. Undergraduate research is a recognized HIP that contributes to student success. Several studies have demonstrated that participation in undergraduate student research builds critical thinking skills and analytical ability (Lopatto, 2003; Seymour, Hunter, Laursen & DeAntoni, 2004), and that students who participate in research as undergraduate students are more likely to finish a baccalaureate degree and go on to graduate school (Kinzie, 2010; Lopatto, 2007; Nagda et al., 2003). Because research experiences can help students gain cultural competence with regard to the research process, those experiences can encourage students to pursue careers involving research, which can be particularly beneficial for students from historically marginalized backgrounds (Schwartz & Brodsky, 2020).

Higher education research into the HIP of undergraduate research indicates that minority students who are given opportunities to engage with faculty, develop relationships with peers and faculty, gain confidence and are comfortable with a campus are more likely to persist and complete their academic goals (e.g, transfer or degree completion) (Nagda, Gregerman, Jonides, von Hippel & Lerner, 1998.) Research also suggests that underrepresented minority students may receive greater benefit by participating in undergraduate research because of exposure to faculty, mentoring and institutional support (Hurtado, Cabrera, Lin, Arellano & Espinosa, 2009; Kim & Sax, 2009), although there are some divergent findings (Collins, Grineski, Shenberger, Morales, Morera, & Echegoyen, 2017).

The goals of SOAR were:

- Introduce students to educational opportunities in STEM Introduce students to careers in related fields and to psychology as discipline
- Increase knowledge of research methods
- Provide opportunities for research skill development

- Enhance student confidence and self-efficacy
- Facilitate peer to peer and faculty mentoring

SOAR is an innovation in the area of Learning and Teaching because it:

- Provided a bridge from high school to college for students from traditionally marginalized groups and exposed them to our campus and faculty mentors
- Engaged students in undergraduate research, which is considered a high impact educational practice that we know impacts student recruitment, retention and persistence
- Improved student self-efficacy and knowledge of psychology as a field and the scientific method (as demonstrated by evaluation data)
- Facilitated additional community outreach with GCC partners and stakeholders

Twelve students completed CITI Human Subjects Ethics training and co-produced IRB applications that were reviewed and approved. Three independent research projects were completed and shared at a campus hosted poster session. Evaluation data gathered as part of the learning experience found that:

- 60% reported great gains in identifying research questions that can be answered with data
- 80% reported great gains in understanding the relevance of research to my coursework 40% reported great gains in their abilities to contribute to science
- 50% reported great gains in explaining their research project to people outside of psychology
- 30% reported great gains in their ability to write scientific reports or papers
- 70% reported great gains in preparing a scientific poster
- 70% reported great gains working with computers
- 6 students reported more confidence in making new friends at college
- 7 students reported more confidence talking to university staff
- 7 students reported more confidence talking to professors
- 8 students reported more confidence taking good class notes
- 6 students reported more confidence understanding textbooks
- 7 students reported more confidence keeping up to date with schoolwork