

TRANSFORMING TOGETHER

The Newsletter of the SIRIUS II Project*



https://commons.wikimedia.org/wiki/File:American_River_at_Sutter%27s_Mill.JPG

Photo by Howcheng

A COMMUNITY OF TRANSFORMATION

Welcome to the first SIRIUS II project newsletter! These communications will keep our greater community updated on the various project events and progress that occur throughout each year.

The Sustainable Interdisciplinary Research to Inspire Undergraduate Success II (SIRIUS II) project aims to provide interdisciplinary authentic learning experiences (ALEs) to Sacramento region university and community college students enrolled in a variety of STEM courses. Using the same disciplinary knowledge and processes that a professional would employ in the field, the ALEs implemented in the SIRIUS II project will be designed to solve real-world problems with unknown outcomes, and will focus in some way on a local, relevant problem: human impacts on Northern California's waterways and their surrounding ecosystems. The ultimate goal of the SIRIUS II project is to increase student engagement, retention and diversity in STEM.

In pursuit of these goals, the SIRIUS II project strives to create a community of transformation that includes faculty, staff and students from five institutions and ten disciplines working together towards shared goals. The project launched in October 2020 and is supported by the National Science Foundation Improving Undergraduate STEM Education Award #2012891.

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GETTING TO KNOW US

The SIRIUS II project is a collaboration between California State University, Sacramento and the four Los Rios Community Colleges: American River College, Cosumnes River College, Folsom Lake College and Sacramento City College. We are the project leadership team and we meet bi-weekly to oversee and plan various project activities. Among key activities this past year was the recruitment of members of the SIRIUS II community. Community College Campus Coordinators were recruited to liaise with faculty from their institutions, and an internal advisory board was established that includes faculty and administrators from each institution. Members of an external advisory board were also recruited, with representatives from key organizations in the greater Sacramento region such as Aerojet Rocketdyne, Sacramento County Regional Parks, the California Council on Science and Technology, U.S. Fish and Wildlife Service, U.S. Geological Survey, and the American River Parkway Foundation. And perhaps most importantly, 35 faculty joined the SIRIUS II Faculty Learning Community, the group of instructors who will collaborate across institutions and disciplines to design and incorporate ALEs into their classrooms.



UNDERSTANDING THE LANDSCAPE

One of the main goals of the first year was to understand the capacity for change, and to identify challenges and opportunities, within each participating institution and department. To this end, we designed a Landscape Analysis (LA) survey that included questions about motivation, desired student outcomes, current presence or absence of ALEs in curricula, potential challenges, available or desired supports, current existence of collaborations, and confidence in implementing ALEs and in student ability to succeed in ALE-based courses.

The survey was administered in early 2021 and was completed by 33 individuals. Motivations for participating in SIRIUS II included a desire to engage students, to promote student success, and to provide students with early authentic research experiences. The foremost challenge cited was time constraints; other challenges included insufficient funding or facilities, and Covid-19 challenges such as the feasibility of providing ALEs in an online environment.

Overall survey responses were similar across institutions and participant type, although the LA did also highlight some discrepancies; both types of information were used by the leadership team to design the inaugural 2021 Summer Institute for participating faculty and will be used in the future to create an effective program across all institutions and disciplines.

SUMMER INSTITUTE 2021

The SIRIUS II project includes training and support for participating faculty as they design and implement ALEs in their courses. As an initial step, we hosted a week-long virtual Summer Institute (SI) in May 2021. The design of the SI was based in part on previously successful institutes that provided a pedagogical foundation for authentic classroom experiences; however, the design was also largely novel because of two additional and crucial goals: creating a collaborative “community of transformation” among faculty from different disciplines and institutions, and addressing equity, inclusion and cultural sensitivity related to ALE implementation, including barriers to student success.

Our aim was to create a highly engaging experience that would provide a space for faculty to learn together, through discussion and online platforms designed to promote networking and collaboration. Faculty mentors and the leadership team were available throughout the week to provide support and feedback as participants navigated the largely novel task of designing equitable, collaborative, authentic classroom experiences.

Feedback from faculty was overwhelmingly positive. By the end of the SI, all faculty had at least one idea for an ALE including instructional and research goals. Additionally, nearly every participant met at least two people within and outside of their discipline, and group work and forming collaborations were consistently reported as among the most valuable and valued aspects of the SI. Finally, throughout the institute, many faculty noted the importance of, as well as an interest in, the equity and inclusion activities, culminating in approximately half of all faculty citing these activities as those from which they gained the most during the SI. We are thrilled by these successes and look forward to implementing collaborative, equitable ALEs across all campuses in the coming years.



Students analyze local water samples in a chemistry ALE at American River College.

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QUESTIONS? CONTACT US!

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