SPRING 2024 | ISSUE 6

TRANSFORMING TOGETHER

The Newsletter of the SIRIUS* II Project

Photo: Andrea Palacio

YEAR 4 SIRIUS STEM CONFERENCE

The second SIRIUS II STEM Conference, held on March 26, 2024 at the Sacramento State Alumni Center, brought together over 100 students, faculty, administrators, and community supporters for an evening of sharing, celebrating, and networking. Students from the Los Rios Community Colleges and Sacramento State presented work from their course-based Authentic Learning experiences (cALEs) in the form of 17 posters and variety of other creative formats. The Northern California Chapter of the Society of Environmental Toxicology and Chemistry (NorCal SETAC) joined the event for the second year and shared information about their annual conference and other activities.

Networking was encouraged with a scavenger hunt that prompted students to meet SIRIUS members from other institutions and disciplines. The evening concluded with dinner and a raffle of prizes (College of NSM totes, notebooks, stickers). We appreciate all of the SIRIUS II participants and supporters who made this year's conference a fantastic event!


Photo: Andrea Palacio

RESEARCH HIGHLIGHTS FROM THE SIRIUS STEM CONFERENCE

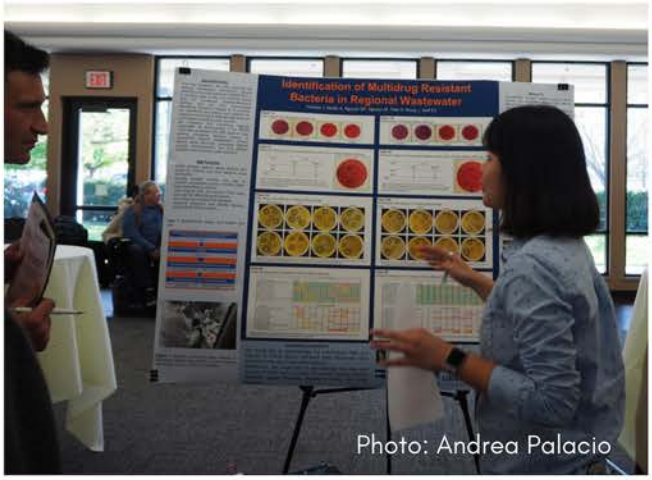

Photo: Andrea Palacio

Identification of Multidrug Resistant Bacteria in Regional Wastewater. J. Hosmer, A. Martin, D.P. Nguyen, M. Nguyen, T. Wong and E.S. Neff (CRC). Students in Professor Eric Neff's course at Cosumnes River College use molecular and microbiological tests, followed by bioinformatic analysis, to test for the presence of antibiotic-resistant coliform bacteria in the wastewater, effluent, and secondary treatment samples from Sacramento Regional Wastewater Treatment Plant.

Can We Be a Sponge Campus? A. Meusling, J. Seymour, R. Berg on behalf of ENVS 135. (CSUS) Professor Julian Fulton's Environmental California Water and Society class at Sacramento State is working in ecology, social science, and hydrology-focused groups to ask interdisciplinary questions and conduct their investigations. Through their cALE, they aim to make evidence-based recommendations about the campus' stormwater management strategies.

Photo: Andrea Palacio

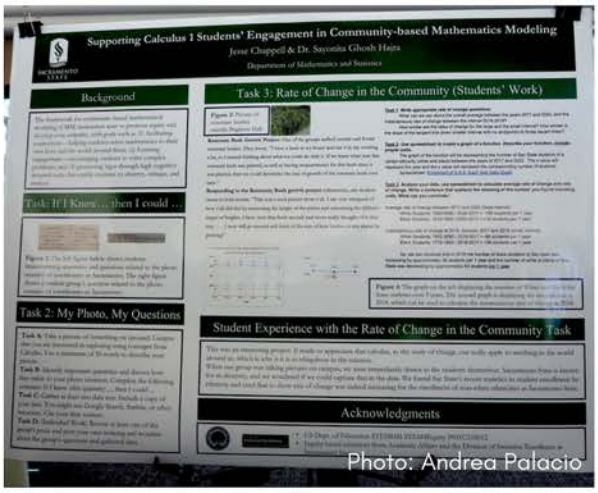

Photo: Andrea Palacio

Supporting Calculus 1 Students' Engagement in Community-based Mathematics Modeling. J. Chappell and S. Ghosh Hajra (CSUS)
Professor Sayonita Ghosh Hajra's Calculus 1 course at Sacramento State is using a Community-based Mathematical Modeling lens to draw relationships between mathematics and the world around them - specifically as they apply what they know about quantities and rates of change. They employ observation, photography, brainstorming, calculations and peer feedback - and a lot of creative thinking!

Is There Excess Iron in the American River? (ARC) Students enrolled in Professor Brian Weissbart's CHEM 400, General Chemistry, class at American River College use a colorimetric method to analyze dissolved iron levels from water samples collected at the base of the Guy West Bridge. Students in CHEM 309 used the same samples to measure pH, water hardness, conductivity and dissolved oxygen. These data are providing baseline measures to compare to other sites potentially impacted by farming and other human activities.

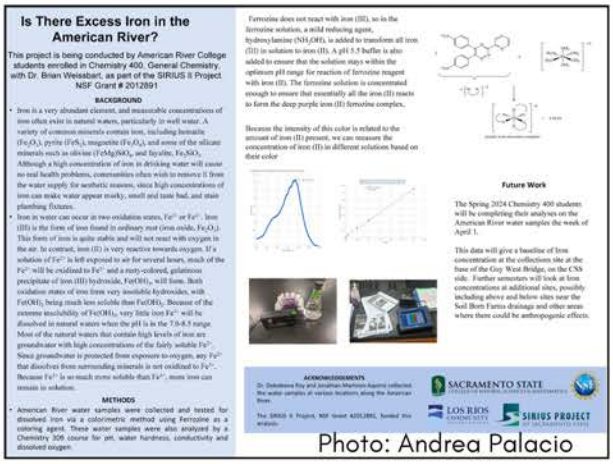

Photo: Andrea Palacio

Science Communication Projects for the Tiny Earth Network (BIO145). Professor Enid Gonzalez-Orta's students at Sac State illustrate the aims and findings of their cALEs to find antibiotic-producing bacteria in a variety of creative formats.

Photos: Andrea Palacio


Photo: Enid Gonzalez-Orta

Professor Anna Klimaszewski-Patterson and students from Geography at Sacramento State remind all SIRIUS II classes to SHARE THEIR DATA on the Network Drive. As part of their cALE, the GEOG 155 class has designed a strategy for SIRIUS Project participants to manage and share data.

ACHIEVEMENTS TO CELEBRATE

Congratulations to **Professor Fran Keller**, from Folsom Lake College's Department of Biology. Professor Keller is conducting sabbatical work at UC Davis focused on wetland monitoring and applying eDNA technology to the silk of spiders from the coastal dunes. FLC students will certainly benefit, as Prof Keller plans to integrate some of what they are learning into cALE courses in the next academic year.

Congratulations to **Eric Pennino and Ethan Roberts**, who passed their exit exams and completed their Master's theses evaluating the impacts of the SIRIUS Project on students and faculty participants. Both will be graduating from the Department of Biological Sciences at Sacramento State in May 2024 and presenting their thesis work at the 2024 Annual Society for the Advancement of Biology Education Research conference in July (Minneapolis, MN).

We celebrate **Shelby Chandar,** who studied the impacts of cALEs on students with disabilities as an undergraduate. She is a recipient of a prestigious 2024 NSF Graduate Research Fellowship Program award that will support her through her Master's in Biological Sciences at Sacramento State.

We are thrilled to welcome 10 **Sierra College faculty** representing five STEM departments to the SIRIUS II community! They will be participating in a SIRIUS Summer Institute from May 20-23, 2024.

LOOKING AHEAD

SAVE THE DATE for ALE-apolooza III
August 16, 2024 from 9am - 5pm in the Tschannen Science Complex at Sacramento State.

QUESTIONS? CONTACT US!

https://www.csus.edu/college/natural-sciences-mathematics/sirius/ sirius@csus.edu