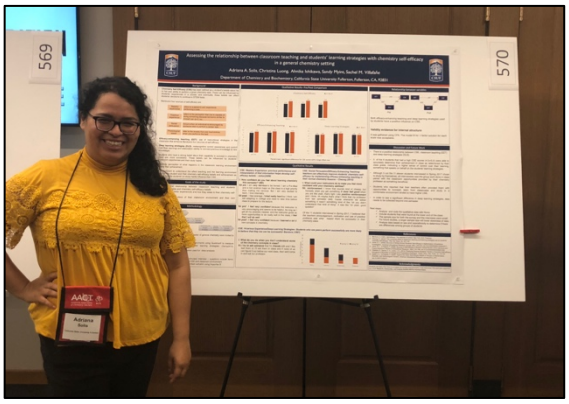
"Understanding how the chemistry curriculum and students' experiences in chemistry courses shape student's chemistry self-efficacy (CSE)"

Dr. Sachel Villafane-Garcia is an Assistant Professor in the Department of Chemistry and Biochemistry. Her lab is currently engaged in a research study to better understand how students' experiences in chemistry courses shape students' chemistry self-efficacy (CSE), and how CSE relates to performance and retention.



Villafane-Garcia lab member, Adriana Solis, presents research at the Biennial Conference on Chemical Education.

Retaining students, especially females and Hispanics, in STEM is of great interest for educators and researchers. Thus, it is important to understand the factors that influence students' retention in STEM. One factor is chemistry self-efficacy (CSE). CSE has been defined as a student's beliefs about his or her own ability to perform a given chemistry task. These beliefs can be influenced by students' experiences in a course, and eventually, these beliefs can affect students' decisions to continue in STEM fields. The Villafane-Garcia lab uses qualitative and quantitative approaches to understand how the classroom and instructors are helping students shape their CSE in general chemistry. They have interviewed over 30 students from general chemistry courses and are in the process of analyzing those data through the lens of the different sources of self-efficacy and determine how are they related to the classroom experience. They also conducted an online survey of students to determine students' self-efficacy scores at the beginning and end of the semester to determine if there is any change after a semester of instruction. Understanding students' CSE trends, especially for a diverse population like that found at CSUF, could help instructors inform their instruction and create interventions to help students to stay in STEM.