Organization and Goals
A major objective is to expose both high school students and high school science teachers to what it is like to perform actual research, that has the potential to contribute to the scholarly work of a single CSUF faculty member or to the collaborative research of more than one faculty member addressing a scientific question or hypothesis for which the answer(s) is/are unknown. The rationale is that most young people in public schools do not know what it means to do research, especially in the sciences, and we need to increase the numbers of our young people going into science. Early exposure is important for them to consider and prepare to further educate themselves in science and math. At the same time, high school teachers can become acquainted with the research underpinnings of the sciences and mathematics they are teaching, so we hypothesized that exposure to research would give them a fresh interest and perspective as teachers.

WREs are offered once a year, usually in November, to groups of 18 undergraduates, 8 HS students, and 4 HS science teachers (a total of 30 participants). A given WRE is proposed and organized by a single or pairs of collaborating CSUF faculty and is real research, designed to test hypotheses and answer questions stemming from their own work. Potential research projects are selected from the CSUF faculty in the summer and decided upon through discussions with the director, so that publicity can be developed before the start of the academic year in August. The project is broken down into portions of experimental work that can be tackled by small groups of participants (typically 4-5). Groups contain random mixes of undergraduates and HS students and teachers. Faculty from our participating CSUF, and potentially also post-doctoral fellows from neighboring universities who are interested in becoming teachers, help the CSUF faculty member or collaborators organize and run the research project.

Research is carried out during the Saturday and Sunday of the first weekend, and the data are compiled, analyzed and presented on the following Saturday. Projects for the weekend experience range from (a) examining the effects of delayed hatching on the development of grunion, and the genetic bases of plant resistance against pathogens, to determining whether a particular membrane protein in lysosomes transport iron and/or zinc, and synthesizing and screening a library of compounds that might inhibit one type of bacterial toxin.