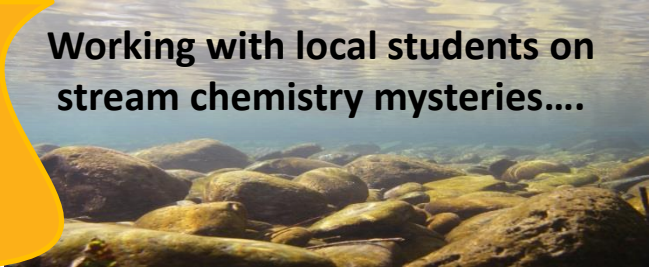


The Herbst Lab

at the Sierra Nevada Aquatic Research Lab,
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www.vesr.ucnrs.org/pages/herbst/index.html

Working with local students on
stream chemistry mysteries....



Snow, rocks, and water pHreaks! The idea behind the stream pHreak project is to involve students interested in environmental science, chemistry, and biology in a learning-based research project directed by the Herbst Lab.

The study engages local students from Mammoth and Bishop High schools. Students conduct research to understand how stream chemistry is related to flow, season, and geologic setting. The goal is to have this group of students be co-authors on a published scientific paper based on the work they do. There is also opportunity for independent but guided studies to be set up by individual students to earn separate credit and experience in developing their own ideas and projects.



Basic research problem being investigated:

Little is known about how the chemistry of stream water changes with season, flows, and with the differing types of geology and rock types in watersheds of different drainages in mountain regions. As snow melts and stream flows increase especially during flood conditions how does pH and water quality change in different drainage basins of the Eastern Sierra? How do rocks dissolve and contribute to chemical composition and buffering? This is important because stream flow patterns are becoming altered with climate change, and because pH and mineral content of streams has an important influence on the organisms that live in streams. Results from independent studies done in recent years show declines into the acid range in streams under high flow conditions as stream buffer capacity is possibly washed out or diluted under long periods of high flow. Among the other questions we can ask in this study are how do streams behave that have large groundwater inputs? Is there a pulse of ionic content with first melt? How does stream chemistry change in burned landscapes? Posing questions and finding answers as we gather data allows us to engage students in science through the research experience of asking questions of nature.