

Yakima WATERS Project: Watershed Activities to Enhance Research in Schools

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The Yakima WATERS project at Central Washington University (CWU), funded by the NSF GK-12 program, is an outreach project that involves students from rural central Washington schools in grades 5 through 11 in authentic research on watershed science. The goal of Yakima WATERS is for K-12 students to encounter the common theme of “Watershed Science of the Yakima River” at different grade levels and in different subjects. For example, a student might study salmon habitat in fifth grade, flood history of the Yakima River in seventh grade, and water quality of local streams and lakes in tenth grade.

The Yakima WATERS project is centered around eight professional teams, each consisting of a graduate student (GK-12 Fellow), a CWU professor, and a lead K-12 teacher. The teams work together over the summer to design watershed science research activities that they will integrate into the curriculum at a given grade level during the following school year. Study topics range from water quality issues to the impact of climate change on water availability to characterization of riparian habit. Last year, investigations included water chemistry analysis, salmon ecology, hydroelectric dams, amphibian ecology and disease, soil and microclimate mapping, water rights, and long-term data collection. The incorporation of watershed science activities has taken a range of forms, from stand-alone lessons and classroom activities, to extended class research projects, to field trips to locations within the Yakima watershed. In a number of cases, the K-12 activities link directly to the thesis research of the graduate student. For example, a graduate student who was studying disease tolerance of frogs raised frogs in tanks in two 10th grade Biology classrooms so students could conduct future research on the frogs’ tolerance to various environmental stresses.

Through the Yakima WATERS program, students are exposed to a variety of scientific problems and research topics throughout their K-12 career. The program aspires to underline the relevance of science by promoting an understanding of the importance of the Yakima watershed and related science among the K-12 students.

Carey Gazis

Carey Gazis is a professor in the Geological Sciences Department at Central Washington University. She teaches courses in geochemistry, hydrogeology, and environmental studies. Her research interests involve using stable isotopes and other geochemical techniques to study groundwater-surface water interactions, soil water movement, and biogeochemical cycles. Carey is one of the leaders of an NSF-funded outreach project called Yakima WATERS. In this five-year project, CWU graduate students work in K-12 schools in central Washington, teaching watershed science at different grade levels and in different subjects. Gazis received her B.S. in Geology and Mathematics from Stanford University and her Ph.D. in Geology from California Institute of Technology.