

ChemTeach



(Please visit our Web site: <http://csufresno.edu/chemteach>)

ChemTeach is the brainchild of **Jerry Bodily**, a chemistry teacher at Fowler High School who is seeking to address the critical shortage of **chemistry and physics teachers** in the Central Valley. An article about ChemTeach appeared in the *Fresno Bee* on May 6, 2008 (see http://csufresno.edu/chemteach/docs/FresnoBee_050608.pdf) and helped generate great interest in the program. ChemTeach is associated with California State University, Fresno and receives funding and support from the University's **Mathematics and Science Teacher Initiative (MSTI)**, a project funded by the CSU Chancellor's Office. Curricular materials and a description of instructional strategies will be made available in Summer 2009 for replication in other regions of the state.

ChemTeach strives to strengthen the chemistry and/or physics subject matter knowledge of (a) **current teachers** who don't have a credential in these areas and (b) bright and motivated **career changers** who have at least a bachelor's degree, with the goal of preparing the participants to pass the Physics and/or Chemistry subtests of the California Subject Examinations for Teachers (**CSET**) on May 16 and/or July 18, 2009. The CSET assessments are one way to demonstrate subject matter competency in a desired teaching area. In addition to demonstrating subject matter competency through passing these tests, participants who don't have a teaching credential will also need to successfully complete a Single Subject credential program at Fresno State in order to teach in a public school setting. All CSET topics are being addressed in the program, with the **chemistry track** emphasizing the particle nature of matter and the role of energy in change as unifying themes, and the **physics track** emphasizing mechanics, electricity and magnetism.

The complete ChemTeach program (subject matter preparation) covers **10 months**—the program began on **June 21, 2008** and will conclude in **April 2009**. The program is divided into three sessions (summer, fall, spring). The 21 participants (13 chemistry; 8 physics) attend a **6-hour laboratory session every other Saturday**. The curriculum developers, laboratory instructors, and online assistants in this course are master teachers who employ a science pedagogy called **Modeling Instruction**, which is a guided inquiry approach structured around scientific models (see <http://modeling.asu.edu/modeling-HS.html>). It was recognized as an Exemplary K-12 science program by the U.S. Department of Education.

A **Web-supported home study component** comprises a major portion of the ChemTeach experience, with a minimum of 1.5 hours per day of study suggested for participants. They use the foundation developed during the lab sessions to continue to develop the concepts at home using **online activities and discussion forums**, and **receive support through a Web-based platform called Moodle** (<http://moodle.org>). Physics and chemistry textbooks are provided for additional study and practice. Modeling Science online instructors facilitate small group discourse and respond to participant questions. A number of master teachers, both local and from outside the state, serve as ChemTeach instructors and facilitators. Online and face-to-face assessments are administered during lab meetings.

In addition to content and pedagogy instruction, ChemTeach participants will also have all CSET and credential application fees covered by the MSTI grant.

~ Prepared for the MSTI Panel Presentation at the 2008 CMC-N Conference by Carol Fry Bohlin