Science & Health Education Partnership (SEP)

20 years of partnership between the University of California, San Francisco (UCSF) and the San Francisco Unified School District (SFUSD)

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SEP

The Science & Health Education Partnership (SEP) is a collaboration between the University of California, San Francisco and the San Francisco Unified School District. Scientists and educators from both organizations work in partnership to support quality science education for K-12 students.

SEP, founded in 1987 and housed in the UCSF Department of Biochemistry and Biophysics, is nationally recognized as a model partnership between a university and a local public school system. Since 1989, SEP has been awarded nearly $9 million in federal, private and state awards. SEP is currently funded by the Howard Hughes Medical Institute, National Institutes of Health (NIH) Science Education Partnership Award from the National Center for Research Resources, the Bechtel Foundation, the UCSF Chancellor’s Office, the UCSF School of Medicine and the California Science Project.

Mission

SEP’s mission is to promote partnership between scientists and educators in support of high-quality science education for K-12 students. SEP develops and implements programs with the following goals: 1) to support teaching and learning among teachers, students and scientists; 2) to promote an understanding of science as a creative discipline, a process and a body of integrated concepts; 3) to contribute to a deeper understanding of partnership; and 4) to provide models and strategies for other institutions interested in fostering partnerships between scientific and educational communities.

Impact

In school year 2005-2006, SEP coordinated the efforts of 230 UCSF participants, who contributed more than 8,000 hours of service with 400 SFUSD teachers and their students in 60 partnership teams, with programs in 101 of the district’s 119 K-12 schools. In 2006-2007, participation increased from 60 to 72 partnership teams.

Programs

BIO&CHEMTEACH, funded by the UCSF School of Medicine, partners a middle or high school teacher with two to four UCSF volunteers to engage students in hands-on science and health activities in support of the human biology and health curriculum.

MEDTEACH, funded by the UCSF School of Medicine, partners two elementary school teachers with two to four UCSF medical students to engage students in hands-on science and health activities in support of the elementary curriculum. MedTeach, initiated in 1989, is one of SEP’s longest-running programs.

PHARMTEACH partners an elementary, middle or high school teacher with two to four UCSF pharmacy students to engage students in hands-on science and health activities.

STAT, the Scientist-Teacher Action Team, focuses on enriching and supporting the science and health curriculum by offering a short-term, introductory partnership that brings together teachers, scientists and students to do experimental
science at the elementary school level. STAT is funded by the Howard Hughes Medical Institute and the California Science Project.

**QUATTRO ALLIANCE FOR SCIENCE & LANGUAGE INTEGRATION** brings together four groups of participants – elementary school teachers, UCSF volunteers, elementary school English language learning (ELL) students and a collaborative of evaluators – to: 1) facilitate relationships between science learning and language development through scientist-teacher partnerships; 2) increase access to rigorous science learning for ELL students; and 3) generate knowledge of strategies for integrating science and language learning through engaging all participants in a professional community.

**FAMILY SCIENCE NIGHTS** are a great way for parents to learn more about scientist-teacher partnerships. Each Quattro team organizes a family science night at their school site, and students’ family members are invited to join the Quattro students, teachers and UCSF volunteers for an evening of science activities.

**HIGH SCHOOL SUMMER INTERNSHIP PROGRAM** is one of SEP’s longest-running programs. High school students gain authentic research experience and sustained support with the college application process. While the application process for this program is rigorous, grades and test scores are not used as gatekeepers. Instead, primary importance is placed on whether this program will make a significant difference in the lives of the high school students.

The majority of high school interns do not have family members with college degrees; additionally, many of the interns are immigrants or the children of immigrants. Yet, nearly all UCSF high school interns go on to college. For the 2001 cohort, all have matriculated at a college, with more than half attending a UC campus. In comparison, national data for students with similar backgrounds show that only 53 percent would be expected to attend college.

**SCIENCE SUPPLIES GIVE-AWAY GALA:** Teachers receive surplus UCSF supplies and equipment to augment their lessons, and are introduced to the Daly Ralston Resource Center and SEP programs.

**DALY RALSTON RESOURCE CENTER:** The cornerstone of all SEP partnership efforts is the Daly Ralston Resource Center, a library of more than 2,600 hands-on health and science materials available for checkout to all SFUSD teachers and UCSF scientists volunteering in SFUSD. The materials include more than 120 wet human anatomical specimens, animal skulls of 50 different species, classroom sets of compound and dissecting microscopes, anatomical models, kits of scientific equipment, and curricula. Whenever possible, scientific equipment is stocked in sets of 20, so that even large classes of 40 students can work on science experiments in pairs.

**SEP LESSON PLANNING RESOURCES (seplessons.ucsf.edu):**

- SEP’s Daly Ralston Resource Center – a library of thousands of hands-on materials and curricular resources, lesson plans developed by past participants, and even consultation services.
- SEP’s Online Lesson Plan Database – a growing database of SEP teams’ best K-12 science lessons. It is also a convenient way for SEP teams to plan lessons collaboratively and share them with the community.
- Strategies for Involving all Students – suggestions for giving students opportunities to talk about science, handle materials and think for themselves.

For an additional selection of online teaching resources, see biochemistry.ucsf.edu/~sep/lessonplanning.html.

For more information, see [www.ucsf.edu/sep](http://www.ucsf.edu/sep)