

## California State Polytechnic University, Pomona

*“WORLD CLASS SCIENCE in a SMALL CLASS ENVIRONMENT for a CALIFORNIA STATE UNIVERSITY COST”*

### College of Science and the Preparation of Teachers

Science education in schools must be a priority for the United States to maintain its primary role in science and technology. The College of Science provides professional teacher development for K-12 teachers and outreach and support for teachers and students through a variety of programs and collaborations.

### Programs and Collaborations in Support of K-12 Education

- **CEEMaST** (Center for Educational Equity In Mathematics, Science and Technology), the formal outreach arm of the College of Science, provides professional development for K-12 teachers, workshops and conferences and support and technical assistance related to curricula and teaching of science mathematics and technology for district personnel and teachers. Collaborative projects include:
  - **SGVSP - San Gabriel Valley Science Project**
    - **CaMSP** (California Math and Science Partnership grant) Middle School Science Institute; a partnership with the Hacienda La Puente Unified School District provides 80-hour summer institutes with 6 follow-ups during the academic year that involves faculty from mathematics, biology, chemistry, geology and physics.
    - **HHMI** (Howard Hughes Medical Institute grant) High School Institute; a 40 hour summer research laboratory experience which involves university faculty and science educators with high school teachers, high school students and pre-service secondary teachers
    - **NSF** (National Science Foundation, Research On Learning in Education grant); an 80 hour summer intensive institute in partnership with LessonLab, Inc., a Pearson Educational Corporation. The 4/5/6 program includes a summer institute, and small study teams which meet 7 times during the academic year. This program currently has teachers from Pomona USD, Hacienda La Puente USD, Bassett USD and Claremont USD and Ontario/Montclair USD, Charter Oak and West Covina School Districts and LessonLab, Inc. for elementary teacher preparation.
  - **SGVMP - San Gabriel Valley Math Project**
    - **CaMSP** (California Math and Science partnership grant) Algebra institute; a partnership with Azusa, Bassett, Charter Oak and West Covina School Districts providing 104 hours of professional development for teachers.
    - **Technology Institute** open to secondary math teachers in the Cal Poly Pomona service area.
    - **Leadership Development** is an invitational secondary institute for math teachers in the service area of Cal Poly Pomona.
- **Department of Mathematics**
  - **CaMSP** (California Math and Science partnership grant) collaborative partnership with Rialto involving both math and science faculty from the College of Science; program includes intensive weeks of content instruction and follow-ups during the academic year. 104 total hours of professional development
  - **CPEC** (California Postsecondary Education Commission- Improving Teacher Quality Program) Includes partnerships with Pomona, Rialto, Roland and Snowline USD's in the preparation of prospective and content enhancement of current teachers. The work helps teachers to be aware of and prepare students for examinations needed to enter college.

With support from CPEC the Department of Mathematics and the College of Science host a residential summer tutor training program for high school students. Students reside on campus and complete a math tutor training program where they can earn national certification as a tutor.

- Gift of Numbers Program places prospective teachers into classrooms with at-risk students to enhance the K-12 students' mathematics experience while at the same time providing an early teaching opportunity for Cal Poly Pomona students.
  - The Department of Mathematics and the College of Science provide a one week summer institute on teaching math to English Language Learners. The institute supports current mathematics teachers in local districts in their work with English Language Learners.
  - Since 2001 the Mathematics Department has supported middle school math teachers in Apple Valley and Snowline Unified school districts by providing in-service training in content and pedagogy.
  - The College Readiness program has provided a two-week summer institute in Using Technology to Differentiate Mathematics Instruction and follow-up days that include opportunities for collaboration through Lesson Study.
  - The College of Science and the Mathematics Department have partnered with Rialto Unified School District to increase teacher content knowledge in mathematics and science. Through the MSP grant teachers attend a one week summer institute and 40 additional hours of follow-up led by Cal Poly faculty.
  - With support from a CPEC grant Cal Poly math majors, in the pipeline to become teachers, are selected as "Community Teaching Fellows" and provide math tutoring at local and middle high schools, and at the Boy's and Girl's Club in Pomona.
  - In Summer 2005, the Department of Mathematics and Statistics co-hosted a summer Research Experience for Undergraduates (REU) with NSF REU and National Security Agency grant support. The Applied Mathematical Sciences Summer Institute (AMSSI) brings together 16 talented undergraduates from around the country for an intensive seven-week research experience in various areas of applied math.
- **BioTrek** is a rainforest learning center with greenhouse, garden and labs that provide students and teachers hands-on experience with the tropical rainforest, tropical and California aquatic environments and California indigenous plants and people. (2003-2004 - 1,746 off campus students and their teachers, 1,799 visitors and approximately 2,400 on campus students and visitors used this resource.)
  - **Science Olympiad**, one of the country's premiere science competitions, brought 1,000 elementary, middle and high school students and their teachers to campus from nearly 90 schools from across the county.
  - **Department of Chemistry** Chemistry Magic Shows for elementary students are conducted 3-4 times a year with 60-100 students participating in each show along with teachers, parents and teacher aides.
  - **Department of Geology**
    - Redwood Elementary School - Earth Science Day: Service learning experience for Cal Poly Pomona elementary education students enrolled in SCI 212-S, directed by Geology Professor J. Marshall in cooperation with teacher A. Katze, Redwood Elementary School, Fontana Unified School District.

For more information please contact the College of Science Dean's Office at 909-869-3600.