



# Field Studies Collaborative Paso Robles High School



## University Research Experience for High School Students *PROPOSAL*

### **PROPOSED Course Descriptions - PRHS Field Studies Collaborative**

#### **UNIVERSITY RESEARCH EXPERIENCE FOR HIGH SCHOOL STUDENTS (COURSE CODE: )**

**Credits:** 1 (20 hours of field research) Maximum of 3 units

**Teacher:** Anthony Overton

**Collaborating Partner:** California Polytechnic State University, San Luis Obispo

**Grade:** 11/12

**College Entrance:** UC/CSU (g)

**PRHS Requirement:** Elective

**Prerequisite:** "B" or better in Science Academy 2 **or** Chemistry

**Course Description:** Student will work with instructor, university faculty, and undergraduates at Cal Poly, SLO during their Summer Undergraduate Research Program in June and July. Students will be placed in laboratories based on coursework, experience, and interviews. Once placed students will collaborate with instructor and university faculty to develop a project within the scope of the research being performed. Students will develop understanding of the research lab's project, complete any required laboratory safety training, develop necessary laboratory skills to complete project, participate in data collection and analysis, and present a summary of the data collect and its contribution to the overall research being performed.

**Assessment:** Students will be assessed on three elements: 1) successful participation and application of research skills; 2) poster presentation of research; and 3) the completion of a laboratory notebook.

#### **Costs of Class:**

|  |              |
|--|--------------|
| Appropriate Safety Equipment @ \$30/student      | \$300        |
| Supplies for Posters Presentation @ \$50/student | \$500        |
| <b>SUBTOTAL.....</b>                             | <b>\$800</b> |

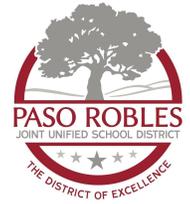
#### **Instructor Costs**

|   |                |
|---|----------------|
| 2 instructors, 30 hours @ \$33 curriculum rate            | \$1,980        |
| - Assuming students that take 3 units @ 60 hours          |                |
| 1 instructor 15 hours planning/grading @ \$33 curr. rates | \$495          |
| <b>SUBTOTAL.....</b>                                      | <b>\$2,475</b> |

**TOTAL COURSE COST.....\$3,275**



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### Field Studies Collaborative Program Overview

#### Field Studies Collaborative (FSC) Vision and Executive Summary:

- The Paso Robles High School Field Study Collaborative is a pathway for students interested in supplementing their PRHS standard based education with extracurricular field training and hands-on research.
- The required elements and objectives of the Field Studies Collaborative are tailored to encourage cross-curricular disciplines to be included under the Field Studies Collaborative umbrella. The goal is to offer students 1 unit of high school credit for 20 hours of field study work while creating a sustainable budget for teacher compensation that reflects the credits students earn.

#### Overarching Collaborative Principles

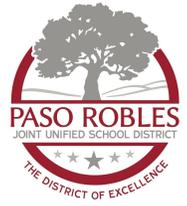
- Providing transformative and academically rigorous experiences through field-based research courses.
- Using the ‘Learn By Doing’ model to ensure career/college/community readiness in students while developing leadership, problem-solving, and innovative thinking skills as well as encouraging the character traits of self-discipline, self-motivation, and resourcefulness.
- Each Research course has measurable objectives that are linked to the actual data collection and best practices within that field of study

#### Required Elements for Courses Under the Field Studies Collaborative

1. Collaborative grounded in data collection based on professional training and instruction that culminates with an assessment that reflects the skills applied during the study.
2. Research and application takes place “in the field” off campus.
3. Courses are standards driven experiences with direct instruction on relevant research skills and background knowledge and assessment of the students mastery of these concepts and skills
4. Collaborative is a collaborative effort between Paso Robles High School and a participating university, government, non-profit organizations, or private institution.
5. Courses are open to all qualified students through standard application process developed by each course instructor.
6. Participating students earn 1 credit for 20 hours of qualified supervised training and/or direct hands-on field research.
7. Participating teachers earn curriculum rate that matches student credit hours.



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8. Lead teachers for specific Field Studies Courses may conduct fundraising projects to supplement district funding.

### STANDARDS

#### Common Core Standards

CCSS.ELA-LITERACY.11-12.7 Conduct short as well as more sustained **research projects** to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

CCSS.ELA-LITERACY.RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.

CCSS.ELA-LITERACY.RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.

CCSS.ELA-LITERACY.RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.



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### **CURRENT FCS COURSES OFFERED BY PRHS**

#### **MARINE INTERTIDAL MONITORING PROJECT (COURSE CODE: \_\_\_\_\_)**

**Credits:** 1 (20 hours of field research)

**Teacher:** Jon Paul Ewing

**Grade:** 11/12

**College Entrance:** UC/CSU (g)

**PRHS Requirement:** Elective

**Prerequisite:** “B” or better in Science Academy 2 **or** Chemistry

Students will conduct hands-on field research with Marine Biologists to collect scientific data along the Central Coast. The LiMPETS (Long-term Monitoring Program and Experiential Training for Students) Program is a partnership with the National Oceanic and Atmospheric Administration (NOAA) that puts students in contact with ongoing field research. PRHS students in this selective class will become part of a network of over 6,000 researchers studying the California coastline. Intensive training sessions on plant taxonomy, invertebrate zoology, and marine ecology will prepare students to set up a monitoring station in SLO County. Numerous trips to the study site will occur throughout the year, including overnight campouts to catch low tide conditions. At the conclusion of the course, students will analyze their data as well as present their findings to their peers and community.

#### **JOSHUA TREE/CLIMATE CHANGE FIELD BIOLOGY RESEARCH (COURSE CODE: \_\_\_\_\_)**

**Credits:** 1 (20 hours of field research)

**Teacher:** Geoffrey Land

**Grade:** 11/12

**College Entrance:** UC/CSU (G)

**PRHS Requirement:** Elective

**Prerequisite:** “B” or better in Science Academy 1 and 10th grade science

Students will work with Joshua Tree National Park staff during Spring break to conduct a long term research project to monitor the effects of climate change and drought on the dynamics of Joshua tree woodlands. Students are to be trained in “Leave No Trace” backpacking ethic, desert ecology and data collection protocols for desert Joshua Tree forest woodlands. Students will backpack to remote sites in the Joshua Tree National Park to collect monitoring data, with the oversight of PRHS teachers and park biologists.



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### SANTA CRUZ ISLAND FALL FIELD BIOLOGY (COURSE CODE: \_\_\_\_\_)

**Credits:** 1 (20 hours of field research)

**Teacher:** Mark Dimaggio

**Grade:** 11/12

**College Entrance:** UC/CSU (g)

**PRHS Requirement:** Elective

**Prerequisite:** "B" or better in Science Academy 1 and 10th grade science

Students will work with National Park Service and Nature Conservancy staff during Thanksgiving break to learn outdoor and field biology techniques while conducting long term botanical surveys on Santa Cruz Island (Channel Islands). Students will be trained to utilize topographic maps, follow compass bearings, use GPS devices and conduct field identification of numerous native and introduced plants. Students will establish plant tran. sects and use them for data collection, conducting high level research on island biology in cooperation with the UC Natural Reserve System. Students will participate in two vegetation surveys; one that focuses on the effects of feral pig removal on *Stipa pulchra* (purple needlegrass), and one that monitors the long term health of a variety of plant communities including chaparral, coastal sage scrub, bishop pine forest, grassland, ruderal, and oak woodland communities. Students conduct multiple protocols to collect data to support these studies. The fall trip to Santa Cruz Island lasts five days. Students are housed in rustic dorm rooms, and plan and prepare their own meals.

### SANTA CRUZ ISLAND SUMMER FIELD BIOLOGY (COURSE CODE: \_\_\_\_\_)

**Credits:** 3 (60 hours of field research)

**Teacher:** Mark Dimaggio

**Grade:** 11/12

**College Entrance:** UC/CSU (g)

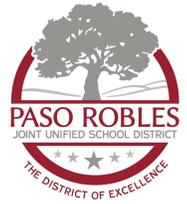
**PRHS Requirement:** Elective

**Prerequisite:** "B" or better in Science Academy 1 and 10th grade science

Students will work with National Park Service and Nature Conservancy staff during the summer of 2017 to learn outdoor and field biology techniques while conducting long term botanical surveys on Santa Cruz Island (Channel Islands). Students will be trained to utilize topographic maps, follow compass bearings, use GPS devices and conduct field identification of numerous native and introduced plants. Students will establish plant transects and use them for data collection, conducting high level research on island biology in cooperation with the UC Natural Reserve System. Students will participate in two vegetation surveys; one that focuses on the effects of feral pig removal on *Stipa pulchra* (purple needlegrass), and one that monitors the long term health of a variety of plant communities including chaparral, coastal sage scrub, bishop pine forest, grassland, ruderal, and oak woodland communities. Students conduct multiple protocols to collect data to support these studies. The summer trip to Santa Cruz Island lasts eight days. Students are housed in rustic dorm rooms, and plan and prepare their own meals. PRHS is the only high school in California with such a program.



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## University Research Experience for High School Students *PROPOSAL*

### **ETHNIC STUDIES ORAL HISTORY FIELD RESEARCH (COURSE CODE: \_\_\_\_\_)**

**Credits:** 1 (20 hours of field research)

**Teacher:** Seth Draine

**Grade:** 11/12

**College Entrance:** UC/CSU (G)

**PRHS Requirement:** Elective

**Prerequisite:** "B" or better in Modern World History

Students will work over the course of five weekends during Spring Semester with Professors and Graduate research students from Cal Poly State University Ethnic Studies Department to conduct a long term research project to collect oral histories from minority ethnic populations in northern San Luis Obispo County. Students will be trained in social science research protocols, oral history techniques and the use of digital recording equipment. Students will work alongside Cal Poly graduate students to conduct oral histories and catalog and document their interviews. Students will conduct the field research over the course of a semester under the supervision of PRHS teachers.