



**San Diego to Hawaii**  
Matt Leader, Biology  
Chaz Parker-Olafs, Humanities  
11th Grade  
High Tech High North County

How has imperialism affected the biodiversity of two unique areas? This semester-long project was focused on telling the stories of San Diego and Hawaii and how imperialism has affected those places. Modeled after a UC San Diego PHD program, students developed focus questions by highlighting San Diego species that students had a connection to and engaged in deep inquiry to those research topics. Each student had a focus organism while developing a research study that they completed throughout the project. Some studies included coyote habitat interaction, ocean temperature affecting sea lion sun basking, and ocean acidification affecting coral health. The culmination was a defense of their knowledge and creation of a scientific poster at a school wide exhibition. Additionally, the students published their research findings in a book that will be used for subsequent classes to refer to when engaging in similar biology research projects.

**Teacher Reflection**

We modeled it after how UCSD has students really develop a form of study and dissertation in a PHD model. I had some collaborators help me to design that. Over the course of the semester it's like a six-year UCSD study essentially in four months on a high school level. They went through a period of getting some background info like in a master's degree, defending their knowledge with that and then using that knowledge to develop a part of study relating to biodiversity of the species. A good two months of the project was the research in which they spent each day pushing the study further and then every Friday they defended what they did for that week.

—Matt Leader

**Student Reflection**

I had the opportunity to work with a coral researcher who lives in Hawaii. Part of working with them was asking questions and working out our dilemma. She was really insightful only not with questions about my organism but also how to better conduct my experiment. Looking back, my experiment was kind of a flop but I realized what mistakes I made. I left the water open and it changed the PH while I wasn't technically conducting the experiment. My research paper reflected the information about cauliflower coral as well as my experiment data.

—Singi C.