



# Animo Leadership High School

11044 South Freeman Avenue, Inglewood, Ca. 90304

[www.animo.org](http://www.animo.org)

## ***C-DEBI Collaborative:***

### ***Exploring sub-ocean floor deep sea microbes & Adaptation to K-12 Teaching***

**Mark Friedman, Science Department Chair**

**August 7, 2012**

#### **Project Goal:**

Develop lessons, activities, labs, assessments to interpret science data for Biology, Chemistry, Physics, Earth Sciences and Marine Biology at the K-12 level. <http://joidesresolution.org>

#### **Project Description:**

Explore the new realm of life at the bottom of the ocean, the basement of the world, and discover along with scientists how microbes live in complete darkness on iron and rocks.

C-DEBI is part of an expedition on the drill ship – the JOIDES Resolution.

#### **Project impact:**

Investigative research about marine microbes on board the *Joides Resolution* was the basis of the materials developed for use by Middle and High schools nationally and internationally. Students collaborated with subject specific science teachers, developed lessons and taught the entire school.

All materials are posted on C-DEBI and COSEE websites for dissemination and free use by other teachers. Students will be a component of this teacher's workshop presentations at California Science Teachers Association in the fall 2012 and National Association of Biology Teachers conference, 2012. They were included in the June, National Marine Educators Association (NMEA) held in Alaska and the Ali'i Astrobiology workshop at the University of Hawaii (Manoa) in July.

The Marine Biology Club and students working with the C-DEBI project of deep sea energy research have been involved in some awesome activities during the project's life including: individualized monthly Saturday internships with USC scientists, C-DEBI presentations at 5 different Earth Day events/festivals, and they even taught a workshop on their project and research for high and middle school teachers at the Cabrillo Marine Aquarium

In 2011 they won the QuikScience Southern California regional award for best new research and investigation. Students from all grade levels, 9-12, presented their findings in PowerPoint presentations in each of their six science classes based on grade level subject: Biology, Chemistry, Physics, and Marine Biology/Research.

They entered the 2012 QuikScience competition and won an award for the best project on Harmful Algal Blooms and their impact on the ocean and human activities that cause them.

They were part of the Animo National Ocean Science Bowl team, participated in several Friday night lectures once a month at the Natural History Museum, and attended one COSEE lecture at the Cabrillo Marine Aquarium ...

We are so thankful for this grant opportunity...the club will pursue its environmental and science endeavors.