

Findings are presented on educating K-12 students and teachers on water sustainability for PIREWolf Productions Video Program survey results and informal observations of H2Outreach participation in the Orange County Children's Water Education Festival.

### PIREWolf Productions Video Program

This **project based learning exercise** prepared students for a debate about the fate of the O'Shaughnessy Dam, which created the Hetch Hetchy Reservoir in Yosemite. PIRE researchers made videos to directly address students and their questions, discussing factors they should consider when debating removal of the dam. Of the 130 **Academy High School** students in Santa Ana that participated in this class debate, 116 (89%) completed a survey about **Goal 2** of the PIRE project.

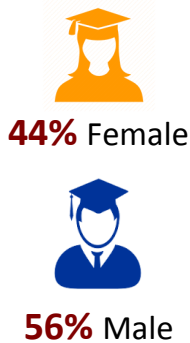
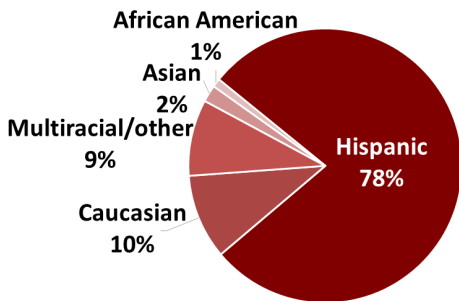


#### PROJECT GOALS

- Goal 1: Knowledge/Research/Discovery
- Goal 2: Education/Workforce Development**
- Goal 3: Partnerships
- Goal 4: Institutional Capacity

- Objectives of the PIREWolf video program are to increase students':**
1. Positive perceptions of outside experts as valuable resources
  2. Knowledge and interest in the topic
  3. Ecofriendly behaviors as a result of learning more about the topic
  4. Preparedness to participate in class activities related to the topic

**84% of students are from underrepresented groups.**



#### Student satisfaction

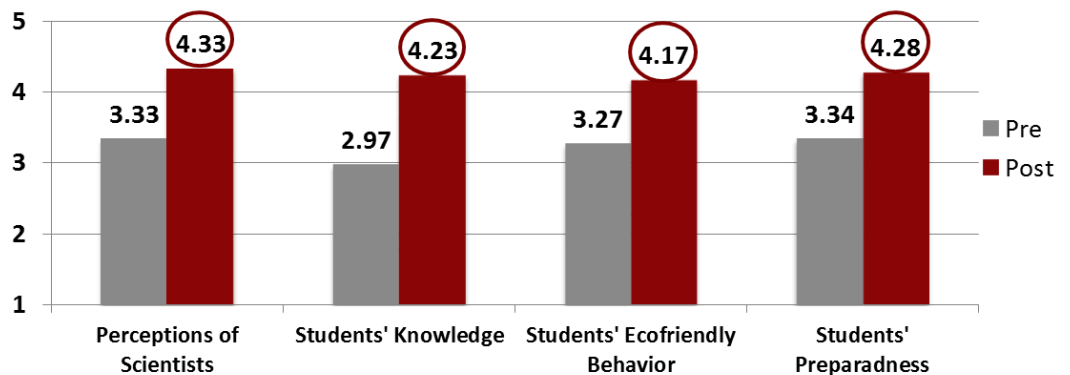
Student satisfaction with the program (1 = not at all satisfied; 5 = extremely satisfied)	Mean
Videos provide info to help with class assignment.	4.02
Videos were personalized for class' needs.	4.16
Scientists showed interest in whether you learned.	4.29
Scientists showed interest in the class and debate.	4.45
Scientists were friendly and personable in videos.	4.53

#### Achievement of program objectives

**Students had statistically significant gains in all four objective areas.**

= statistically significant improvement

**Students were very or extremely satisfied with all aspects of the video program.**



# H2Outreach — Orange County Children's Water Education Festival



The H2Outreach group, which is part of the UCI-Water PIRE project and also contributes to **Goal 2: Education and Workforce Development**, has been involved with several activities this semester aimed at educating K-12 students, one of which includes participation in the Orange County (OC) Children's Water Festival.



H2Outreach undergraduates hosted a booth to educate 3<sup>rd</sup>-5<sup>th</sup> graders on the draught in California as part of the annual OC children's water education festival.

### Learning objectives:

- Understanding the approaches to sustainable water management
- Awareness of the function and use of a Biofilter
- Knowledge of how to create a Biofilter
- Identifying themselves as scientists by the end of the session

### Teacher feedback

**98%** believe overall festival activities had educational value.

**95%** rated the water festival as *very good or excellent*.

*"I thought all of the festival booths were exceptional. We had several that were very hands-on. A group of UCI students had a "Bio[filter activity]" where the children made water filters out of plastic water bottles, cotton, grass, bark, etc. The children loved it!"*

### Reach and impact

**2** days

**11** presentations

**10** schools

**15** UCI H2Outreach undergraduate students

**319** elementary students

**1000+** (reusable) biofilters made



### Evaluator's Recommendations

#### PIREWolf Productions

- Incorporate additional activities each year to enhance partnership between UCI and The Academy, enabling more education and professional development in the classroom.
- Add complex questions and more explanations into PIREWolf videos to develop student's critical thinking skills.

#### H2Outreach: OC Children's Water Festival

- Connect with schools participating in the Water Festival to further educate the K-12 population on water issues.
- Foster relationships with OC Water District and continue to participate in the water festival, incorporating suggestions from Department of Education evaluation of booth.
- Continue to work with SmartStart to develop methods to evaluate outreach activities.

### Upcoming Project Activities

- UPP Down Under for undergraduates
- Research Abroad Experience for graduate students and postdocs

### Upcoming Evaluation Activities

- Annual post-survey of project participants
- Evaluation of UPP Down Under program
- Evaluation of Research Abroad Experience
- Interviews with project leaders

