

Name of IRA Program: Race To Zero
Course Title and Number: ENGR 480
Faculty Program Director: Peter Alstone
College and Department: Environmental Resources Engineering
Campus Phone: x3135 Email Address: pmj2@humboldt.edu
1. Please describe the nature and objective of your activity and how it qualifies as an Instructionally Related Activity (IRA). Use the attached examples of evaluation criteria, reference in #3 provided by the IRA Committee. Address the issue of how the course/activity relates to the larger curriculum (i.e. general education, majors, minors, electives). What are the students expected to learn by the end of this course activity that they did not know before? Are there any special requirements for participating in this activity? Please be as clear and concise as possible in your response.

This funding would support the travel and lodging for four students who will travel from Arcata, CA to Golden, CO to participate in a national low-energy building design competition.

The students who participate in the competition gain valuable experience designing low-energy buildings, in project management skills, and public engagement and speaking. This directly supports the broad engineering skills that students develop in ERE, along with topical experience on low-energy buildings (which is one of the design course areas we offer).

The only requirement to participate is to sign up --- ~50 teams are selected to attend and HSU has attended in each of the last 3 years since 2014.

Participating in a high-profile event, competing and networking with their collegiate peers at a world-class national laboratory, is an invaluable experience for the students who are able to travel. The benefits to students include:

- **An opportunity to directly apply the engineering, design, economics, and environmental science curricular elements they develop in classes.**
- **Travel to competitions and conferences has been shown to have strong spillover benefits in terms of motivating students in their broader classes and keeping them engaged in their course of study (particularly for students in underrepresented groups)**
- **The students will have an opportunity at the competition to network with potential future employers (at the national laboratory), graduate schools (other competitors), and colleagues from across the country.**

In addition to benefits for the students, participation in the competition raises the profile of Humboldt State in the building energy efficiency world. The people who will be judging the competition at NREL are actively shaping clean energy policy and research at a national level.

2. How does your program meet all the General Requirements listed in #2 of the IRA Funding Guidelines?

If the IRA Program no longer has a course title and number, please explain why it should still be eligible for IRA funding.

The students who participate in ENGR 480 Race to Zero must be HSU students in good standing. While most are ERE majors, some come from Environmental Science and other departments. We plan to recruit more interdisciplinary representation in future offerings.

The competition is called "Race to Zero" and this is the 4th year HSU students have participated. The competition is organized around an official course offering (ENGR 480) that meets in the Spring Semester. The goal of the competition is to develop a new "Zero-Net-Energy" home design. This means a very efficient house that also has some renewable energy generation so that the overall use of fossil fuel energy at the house is zero (or less!). The competition is sponsored by the US Department of Energy, and culminates in a workshop and judging event that is held at the National Renewable Energy Lab in Colorado. The five students who travel to the event would be representing the approximately 15 students who actively participate in the class and develop the contest entry.

The course activities are structured to support development of the contest entry --- that is the whole of the course.

Applied research projects, particularly with an element of collegial engagement through competitions and conferences, are critically important elements of a well-rounded professional education for ERE majors. Activities like Race to Zero help to motivate our students and build a community of scholarship together.

3. What is the instructor's level of participation in this IRA funded course and activity?

The instructor is a resource for the students, attends the official ENGR 480 class meetings, and facilitates their work. The students are the overall leads on the project and the competition (this is part of the experience).

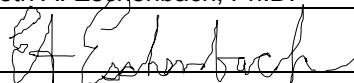
I have reviewed this Instructionally Related Activities Budget Request in its entirety:

IRA Program Director Name:

IRA Program Director Signature:

Department Chair Name: Elizabeth A. Eschenbach, Ph.D.

Department Chair Signature:



Line Item	Identify Priority: 1 = highest priority	Category (see definitions)	Total Funds Needed	Amount Requested from IRA	Difference	Other Source of Revenue			Explanation/break down of line items; if this line item includes per diem, what is the date(s) of the events? (add attachment if necessary)	# of students directly served per year
						University / Associated Students	Fundraised	Student Contribution		
Round trip to Colorado	1	Transportation	2,000	2,000	0				\$300 per person for round trip SFO <-> Denver. \$500 for car rental / mileage to cover transport to and from SFO from Arcata, and for ground transportation within Colorado.	5
Food and lodging 4 days	2	Per Diem	1,400	1,400	0				\$70 / student-day for a 4-day period of travel. The conference is 2 days, and there are 2 days of travel on either end.	5
Software and Supporting Services	3	Supplies and Services	1,000	0	1,000		1,000		The students network with the local professional engineering community to access pro bono consulting services, access free software licenses, and other services in support of the project. \$1,000 is a low-end estimate of the typical market value for the services and software that are provided, which varies year-to-year depending on the partnerships that are developed.	
					0					
					0					
					0					
					0					
					0					
					0					
					0					
TOTALS			4,400	3,400	1,000	0	1,000	0		
TOTAL REVENUE	4,400									
TOTAL EXPENSE	4,400									
REVENUE OVER EXPENSE	0									
2016-17 IRA Allocation	2017-18 IRA Allocation Request	Difference								
3,160	3,400	240								
If your 2016-17 budget request is different than the current year please explain: Increased per diem allowance, and added flexibility in airline tickets to get better schedule.										

