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Application Summary

Competition Details

Competition Title: Funding Opportunity: IRA Applications for 2021-2022

Category:

Award Cycle:

Submission Deadline: 11/12/2021 11:59 PM

Application Information

Submitted By: Udayabagya Halim

Application ID: 923

Application Title: Quantitative Chemistry & External Partner Collaboration

Date Submitted: 04/21/2021 2:45 PM

Personal Details

Applicant First Name: Udayabagya

Applicant Last Name: Halim

Applicant Department: Chemistry & Biochemistry

Email Address: udayabagya.halim@csuci.edu

Phone Number:

Additional Applicant Name:

Additional Applicant Email:

Additional Applicant Department:

Application Details

Proposal Title

Quantitative Chemistry & External Partner Collaboration

Total Amount Request from IRA

7,460

Brief Activity Description

Activity:

Every semester Faculty and Students will initiate and create a short-term collaboration with External Partners (local private businesses or non-profit institutions). We will ask External Partner about their institutional scientific needs, then Faculty & Student will devise and produce a solution.

Inspired by the 2025 Arts & Sciences collective vision, this activity is intended for the long-term deployment (multiple semesters) to satisfy:

Goal I. Create high-quality Academic programs that promote success.

The activity will require faculty and student to reassess the curriculum to satisfy skills needed by employers every semester. This will raise the competitiveness of CSUCI students.

Goal II. Prepare students for a post-graduate opportunity

The activity introduces students to potential employers and the type of work that a person with a science degree will perform. Students will also have the opportunity to **solve an applied science problem** where the solution is valued by external partners. Students will have the opportunity to present their findings to external partners and have a better sense of non-academic work standards.

Goal V. Transformative teaching that offers the opportunity for students to excel in and out of the classroom.

Active learning will be the central theme of the course: identify a need, propose a solution, data analysis, and present an answer. Most importantly, students will have the opportunity to see the relevance of their study at CSUCI.

Example activity flow (Fall 2021 and Spring 2021):

- The faculty & students will find an External partner.
- Faculty and External partners will determine an applied-science problem that CSUCI students in Quantitative Analysis Lecture/Lab could tackle.
- External partners present their work and introduce the problem for students to solve.
- Device a short research/experiment/data analysis task that students can perform.
- Students perform experiments/research/data analysis
- Students present their findings to the External partner.
- Organize field trip (if possible).

Activity or Event Date

07/1/2021

List all classes that relate to proposal

Chem 250, Chem 251 (Quantitative Analysis Lecture & Laboratory)

Learning Outcomes & Relation to Course Offering

Benefits for students: Students will have an example of how their lessons can solve real-life problems. Students will have exposure to external partner's work in the field of science.

Benefit for the external partner: CSUCI students can help external partners to solve a problem. External partners are exposed to the talents of CSUCI students.

Benefit for campus: Introduce local businesses/non-profit (external partners) to CSUCI students and faculty. Hopefully, a long-term engagement will result in more collaboration.

Chem 250 (Quantitative Analysis Lecture)

- External partners will provide a speaker to explain their work and the type of Quantitative Analysis techniques they use in their profession. In addition, the external partners will explain the scope of projects for students to tackle. (Week 3-5)
- The instructor will provide additional lectures/activities/workshops that would help students tackle the project. (Week 4-7)
- Students proceed with the experiment (See Chem 251)
- Students will submit/present their results to the class (Week 10-12) for review before presenting them to an external partner.
- Students will present their result to the external partner (Week 12-15)

Chem 251 (Quantitative Analysis Laboratory)

- The student will establish and/or perform experiments to tackle the problem presented by an external partner. (Week 6 - 11)
- This activity may include sample collection, data mining, and analysis as needed.

Is this activity off campus ?

No

Off Campus - Describe benefit brought back to campus

IRA Activity Title

Name of Sponsor

**Quantitative Chemistry & External
Partner Collaboration**

Udayabagya Halim

Operating Expenses Budget	Comments/Notes
Honoraria (Price set by CI)	
Honoraria (Price set by CI)	
Professional Svcs/ Speaker Fees (Price set by vendor)	Speaker fee and coordination fee with external partner. Once every semester. Fee will be set by us.
Special Consultants (existing CI employees)	Find and coordinate with external partner, create new lessons based on needs, device new experiments to satisfy needs
Other Consultants /Other Professional Services	
Independent Contractor(s)	
Printing	
Advertising (such as in a magazine or publication)	
Copier Chargeback	
Event Signage (wayfinding on day of event)	
Event or Parking-related Staffing	
Rentals or Leases	
Promotional Items (with logo)	

Awards	
Registration- Conferences & Meetings	
Supplies & Services- Other	Chemical and consumables needed for experiments. Approximantely 30 students every semester
Supplies & Services- Other	
Parking (please describe)	Parking passes for up to 5 speakers/visiting organization staff
Other (specify)	
Other (specify)	
Total	

		\$ 2,500.00			
		\$ 10.00		\$ 10.00	\$ 10.00
\$ -	\$ 300.00	\$ 3,410.00	\$ -	\$ 10.00	\$ 10.00

		\$ 2,500.00			
		\$ 10.00		\$ 10.00	\$ 10.00
\$ -	\$ 300.00	\$ 3,410.00	\$ -	\$ 10.00	\$ 10.00

Grand Total	
\$	-
\$	-
\$	600.00
\$	1,800.00
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-
\$	-

\$	-
\$	-
\$	5,000.00
\$	-
\$	60.00
\$	-
\$	-
\$	-
\$	7,460.00