

Instructionally Related Activities Funds Request Spring 2019

▼ Submitter

Submitter Name

Jason Isaacs

Submitter Email

jason.isaacs@csuci.edu

▼ 1. Basic Details

Activity Title

Exploring Swarm Robotics To Mars and Beyond (COMP470):

Activity/Event Date

04/15/2019 – 04/20/2019

Date Funding Needed By

February 2019

Previously Funded?

- ☐ No
☒ Yes

▼ Previously Funded Proposal

Semester/Year

Spring 2018 and Spring 2017

Proposal # (if known)

961 (S2018) and 871 (S2017)

Report submitted for previously Funded Activity?

- ☒ No
☐ Yes

Additional Proposers

Kevin Scrivnor

Academic Program(s)/Center Name(s)

Computer Science and Information Technology

Estimated total Course Fee revenue

0.00

Amount Requested from IRA

\$34,134.00

Estimated Number of Students Participating

24

▼ 2. Brief Activity Description

Describe the activity and its relationships to the educational objectives of the students' program or major

Brief Activity Description

The proposed instructionally related activity is a one week field trip to NASA's Kennedy Space Center in Cape Canaveral, Florida to attend the NASA Swarmathon Competition. This year CI was selected as one of 23 minority serving institutions to participate in a national competition called the NASA Swarmathon Physical Competition. The following description of the competition is taken from www.nasaswarmathon.com.

Twenty-Three Minority Serving Institutions were selected through a competitive application process to participate in the 2019 NASA Swarmathon Physical competition. Teams will develop their own search algorithms and test them at their own university using the 3 Swarmie robots. Prior to the competition, teams will upload their code to contest organizers who will then load each team's code on to 3 Swarmies at the Kennedy Space Center to see how the search algorithm performs. Teams will be ranked by the number of resources their search algorithm is able to locate in a specified period. The event will be held in April 2019 and broadcast live via an online video stream. Teams are welcome to attend in person and observe their code in action, but travel to the event is not required.

As stated above students are optionally invited to attend the competition at NASA's Kennedy Space Center in Florida and observe their robots in action. In addition to attending the 3-day competition, we will spend the final day touring Kennedy Space Center. Some possible options include:

- Space Shuttle Atlantis
- Shuttle Launch Experience
- Special Viewing for Rocket Launches
- Meet an Astronaut
- Numerous Shows and Exhibits
- KSC Bus Tour

Next Spring, I will offer a course COMP470: Mobile Robotics which will focus on the robotic components and algorithms associated with swarm robotics in space exploration. To be successful this student team will need to work many more hours than the three units of credit for COMP490, and they should be rewarded with the opportunity to witness the fruits of their labor at the physical competition.

A few things to note:

- 1) The trip is planned for April 15-20 which is the 12th week of the semester. This means that the trip should not fall on midterms or finals weeks.
- 2) The trip is totally optional for the class, so students may choose not to attend if they are concerned about other classes without any repercussions for my class. In the past we have not had any issues. Professors have excused the absence for the competition and allowed students to make up the work they miss.
- 3) I plan to provide each student with a letter of support prior to the start of the Spring semester requesting the other professors excuse their absence for this wonderful opportunity. Hopefully by addressing the issue on the first day of class will allow more flexibility for impacted classes and professors.

▼ 3. Learning Outcomes and Relation of IRA to Course Offerings

All IRAs must be integrally related to the formal instructional offerings of the University and must be associated with scheduled credit courses.

1. Please list all classes that directly relate to the proposed activity.
2. For each class listed, describe in detail how exactly the IRA activity will be integrated with the class's activities, how

often/ on what expected date(s), and to what extent

Learning Outcomes and Relation of IRA to Course Offerings

As mentioned in the activity description, the field trip will be directly tied to COMP470: Mobile Robotics which is a course offered by the Computer Science and Information Technology program.

This class will not only focus on the future of the space program (robotic exploration of other planets) but will also focus on the history of the space program and its importance to society. Being able to tour NASA facilities, see a space shuttle up close, and meet an astronaut provides a way to make this history real to many of these students who did not live through the glory days of the American space program.

While the main learning outcome of this field trip will be an appreciation of the history of the American Space Program, other outcomes include many of the positive outcome associated with project-based learning:

- Learning to work in a community
- Learning to take responsibility for their learning
- Learning to work with a diverse group with varying strengths and skills
- Learning critical thinking skills

▼ 4. Activity Assessment

Describe the assessment process and measures that the program will use to determine if it has attained its educational goals.

Please note that a report will be due at the end of the semester.

Description of Assessment Process

I plan to have each student write a pair of essays related to this experience. The first essay will document student expectations, and the final essay will be a reflective essay about the experience. I also plan to use a survey tool to quantify student outcomes before and after the experience.

▼ 5. Activity Budget

Please enclose a complete detailed budget of the entire activity. Indicate specific items that you are requesting IRA to fund.

You should use either the Regular Activity budget (for events on campus) or -- if your event involves any travel-- you MUST use the IRA Travel Budget Form.

You can download both of the IRA Excel Budget sheets at <http://www.csuci.edu/ira/application.htm>.

Activity Budget

[NASA_ira-travel-budget-form-ay18-19.xlsx](#)

▼ 6. International Trips

If your event is an international trip submitted through the Center for International Affairs, you must include copies of:

1. Complete Center for International Affairs/ UNIV 392 proposal
2. The program budget as submitted to the Center for International Affairs (to ensure congruency between the two budgets)
3. as well as a copy of the course syllabus

Center for International Affairs Budget

Copy of Center for International Affairs Proposal

Course Syllabus

Certification

☐ I certify that students attending this trip are not previous or repeat attendees of a prior International UNIV 392 Trip

▼ 7. Sources of Activity Support

Please list the other sources of funding (including course fees), and exact expected amounts of additional support for the activity. Please indicate if there are no other sources of funding

Other Sources of Funding

Currently there are no other forms of support for this activity.

▼ 8. Promoting Participation

What is your intended audience and how do you intend to market this to your students?

My intended audience is upper division computer science, mathematics, and physics students. I will begin by marketing by posting flyers around Sierra Hall. Then I will hold information sessions prior to course registration during Fall 2018 to encourage people to sign up for the course and answer questions about the competition.

If this is an event that is off campus, how do you plan to bring back the benefit of this event to campus?

Note about previous semesters: Our students actively participated in public relations efforts including radio and television interviews.

<http://kclu.org/post/south-coast-students-create-computer-code-could-send-nasa-robots-mars#stream/0>

<http://www.keyt.com/news/education/csu-channel-islands-students-shoot-for-the-stars/451342294>

Additionally, our students have presented at the Student Research Luncheon Lecture series. I have presented to the local chapter of IEEE, CSU Sonoma, and Kevin Scrivnor has presented for the Library Lecture Series at the Camarillo Library.

▼ 9. Sustainability

If appropriate, indicate how the content or delivery of the project promotes sustainability at CI.

Sustainability

The need to explore Mars is partially driven by our lack of sustainability here on Earth. The point of this competition is to forage for scarce resources and use them to create fuel for a return journey to Earth. In this way students will gain an appreciation for a situation where each and every resource has great importance to their overall outcome.

▼ 10. Approval and Acknowledgement

Program Chair/Director

Soltys, Michael

Dean

Adler, Mary

Conditions and Considerations

- ☐ **Artist/Performer/Speaker Fees & Honoraria:** On the Activity Budget, please indicate whether the vendor's price was set by you/CI Representative, or is a fee that was set by the vendor.
- ☐ **Large Event:** For a large event, consultation with the campus Event Coordinator's office at (805)437-8548 is required.
- ☒ **Field Trip:** Sponsor must comply with all policies found at:
<http://www.csuci.edu/rm/programs/academic-field-trip-guidelines-and-forms.htm>. If approved, Identified Risks of Participation and Release Agreement must be submitted for each student to the Program Office (Public Folders-HR Forms).
- ☐ **Involves Human Subject Data Collection for Public Dissemination -Requires IRB Approval :** If Project Sponsor proposes to conduct research with human participants, the proposal may be subject to Institutional Review Board for the Protection of Human Subjects (IRB) review. All research that involves any type of interaction with human subjects - from simple surveys to complex biomedical procedures - must be reviewed and approved by the IRB prior to starting the research. Data for "Public Dissemination" indicates interviews/surveys that result in a journal/poster session/newsletter, etc.
- ☐ **IT Requirements:** If your activity has IT requirements, coordination with and approval from IT Administration is required.
- ☐ **International Travel:** Requires International Travel application be submitted to Center for International Affairs. Include copy of CIA budget and course syllabus in your IRA application. Must utilize the University's Foreign Travel Insurance Program (FTIP) and follow all International Travel Guidelines listed at: <http://www.csuci.edu/rm/insurance/foreign-travel.htm>
- ☐ **Risk Management Consultation:** Events that involve or engage students directly with a performer or artist (i.e. in a workshop or other than as a passive audience member) will require consultation with Risk Management. Requires proof of correspondence with Risk Management.
- ☐ **Space/Facilities Services Requirements:** Consultation and coordination with Facilities Services is required.

Acknowledgement

- ☒ I acknowledge that I have reviewed and accepted the Conditions and Considerations herein. Please check off boxes as appropriate.

▼ Chair Review

Recommendation

- ☒ I recommend approval of the IRA Funds Request described on this page
- ☐ I DO NOT recommend approval of the IRA Funds Request described on this page

Comments

This has been a flag ship effort of the department, that garnered a lot of positive publicity for the university, and showcased our department's ability to bring students to a level where they compete successfully in NASA competitions. I support very strongly.

 Michael Soltys-Kulinicz

Oct 2 2018

▼ Dean Review

Recommendation

- ☒ I recommend approval of the IRA Funds Request described on this page
- ☐

I DO NOT recommend approval of the IRA Funds Request described on this page

Comments

Please submit a report for past funding. Also, please consult with Risk Management regarding faculty-driven rental vans for student transportation. Otherwise, I concur with the chair's comments supporting this event as of great benefit to CI students.



Marion Adler

Oct 10 2018