Instructionally Related Activities Funds Request Spring 2017

IRA Funds Request for Exploring Swarm Robotics To Mars and Beyond (COMP490)

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Instructionally Related Activities Funds Request Summary

Project Sponsor	Jason Isaacs
Activity Title	Exploring Swarm Robotics To Mars and Beyond (COMP490)
Activity/Event Date	04/18/2017 – 04/21/2016
Date Funding Needed By	01/23/2017
Previously Funded?	No
Semester/Year	—
Proposal #	—
Report submitted for previously Funded Activity?	—
Report submitted for previously Funded Activity	—
Additional Report #1	—
Additional Report #2	—
Additional Report #3	—
Additional Proposers	—
Academic Program(s) / Center Name(s)	Computer Science and Information Technology
Estimated total Course Fee revenue	$12195.48
Amount Requested from IRA	$26420.52
Estimated Number of Students Participating	24
Conditions and Considerations	Field Trip
Brief Activity Description	The proposed instructionally related activity is a one week field trip to NASA's Kennedy Space Center in Cape Canaveral, Florida. This year CI was selected as one of twenty 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 Minority Serving Institutions will be selected through a competitive application process to participate in the 2017 NASA Swarmathon Physical competition. Each team will be provided with 3 Swarmie robot kits (valued at $5,000) on loan, as well as webinars, instructional documents, and other training materials. The Faculty Member for each team will receive a $1,000 stipend. 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 of time. The event will be held in April, 2017 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 Kenned 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 COMP490: Exploring Swarm Robotics and Beyond which will focus on the use of swarm robotics in space exploration. This course will be open to all students at CI with no prerequisites. The intent is to run the course like a business where students have the opportunity to select different ways to contribute to the overall team mission based on their own backgrounds and strengths. There is tremendous interest in this course. Last week I held an information session to recruit students for the course, and I had 29 students attend the meeting and express interest in participating in this IRA Field Trip. Among those students the following majors were represented; Applied Physics, Art, CS, IT, and Math. Students have already begun voluntarily participating in the competition. Our first weekly meeting was held on Friday September 31 and we had 15 students participate in the unboxing of our Swarmie kits and begin the assembly process. Ultimately 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.
Learning Outcomes and Relation to IRA to	As mentioned in the activity description, the field trip will be directly tied to COMP490: Exploring Swarm Robotics and Beyond which is a special topics course offered by the Computer Science and Information Technology program that is open to all students at CI.

Course Offerings	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 headquarters, see a space shuttle up close, and meet an astronaut provide 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
Description of Assessment Process	The will be required to record a short video diary at the end of each day describing how the experience of the day has affected them. Additionally, students will be asked to interview each other about their experiences during the activity.
Activity Budget	IsaacsNASAiratravelbudgetformay1617.xlsx
CIA Budget	—
CIA Proposal	—
Course Syllabus	—
CIA Certification	—
Other Sources of Funding	Currently there are no other forms of support for this activity. In the coming months we will plan and conduct other fundraising activites to help offset any out of pocket costs to the students.
Target Audience/Student Marketing	This course is open to all CI students. I will market this event through fliers around compus and my website.
Bring Benefit to Campus	The students will be expected to document their journey with a blog dedicated to the project. In this way we will be providing a viewpoint of our experiences for others 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 a way students will gain an appreciation for a situation where each and every resource has great importance to their overall outcome.
Program Chair/Director	michael.soltys
Dean	james.meriwether
Acknowledgement	I acknowledge that I have reviewed and accepted the Conditions and Considerations herein. Please check off boxes as appropriate.

Program Chair/Director Review

Recommendation	I recommend approval of the IRA Funds Request described on this page
Name	Michael Soltys
Date/Time	10/4/2016 9:06:30 AM
Validation	myCI-signin-5W-2732
Comments	—

Dean Review

Recommendation	I recommend approval of the IRA Funds Request described on this page
Name	James Meriwether
Date/Time	10/5/2016 10:04:41 AM
Validation	myCI-signin-N3-6649
Comments	—

IRA Committee Decision

Decision	—
Comments	—

Current Tasks

Task	Time Assigned	Assigned To
IRA Committee Decision	10/5/2016 10:04:41 AM	David Daniels

Completed Tasks

Task	Time Assigned	Time Completed	Completed By
Review from james.meriwether, Dean	10/4/2016 9:06:30 AM	10/5/2016 10:04:41 AM	James Meriwether
Review from michael.soltys, Program Chair/Director	10/4/2016 9:04:26 AM	10/4/2016 9:06:30 AM	Michael Soltys
Fill out Request	10/4/2016 8:52:42 AM	10/4/2016 9:04:26 AM	Jason Isaacs

Actions

- IRA Committee Decision
- View IRA Funds Request