

Instructionally Related Activities Funds Request Spring 2018

▼ Submitter

Submitter Name

Cynthia Flores

Submitter Email

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▼ 1. Basic Details

Activity Title

Mathematics, Architecture, Art, and Mission Culture

Activity/Event Date

January 9-13, 2018

Date Funding Needed By

December 15, 2017

Previously Funded?

- No
 Yes

Additional Proposers

Dr. Alona Kryshchenko

Academic Program(s)/Center Name(s)

Department of Mathematics

Estimated total Course Fee revenue

\$14,716

Amount Requested from IRA

\$9588

Estimated Number of Students Participating

15

▼ 2. Brief Activity Description

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

Brief Activity Description

We are proposing an intensive experiential learning activity that combines mathematics with architecture, art, and the culture surrounding the California Missions. The activity will begin with a tour of the Southern California missions including San Juan Capistrano, San Luis Rey de la Francia, Basilica San Diego de Alcalá, as well as local missions San Buenaventura and Santa Barbara. The experience will include student participation in a two-part special session, "Arts and Mathematics: The Interface" and visiting the Mathematical Art Exhibition held during the National Joint Mathematics Meeting (JMM) in San Diego.

Emphasizing the math department's commitment to providing students with multicultural perspectives and interdisciplinary applications of mathematics, this four-day tour will begin with a student carpool towards the San Diego region with two mission visits, San Gabriel Arcangel and San Juan Capistrano. Students will be asked to engage in discussions, focused on recognizing and appreciating the geometric and architectural presence in many artistic works found at each mission, as well as placing the work in historical context. We will be looking for specific patterns in both the architectural design of the missions and the artistic pieces (sculptures, paintings, murals, etc), as well as us of the rules of mathematical harmony, for instance, any symmetries present.

On Wednesday, January 10, students will participate in a day-long special session focused on "Arts and Mathematics: The interface," held at the national conference, JMM. This will allow students to place their observations in the context of where math and art meet and prepare them for the following day trip to two more missions: San Luis Rey de la Fancia and Basilica San Diego de Alcalá. As the experience comes to an end, students will ask to participate on the several conference activities aimed at capturing undergraduate student audiences held during JMM, such as attend the undergraduate math research poster session, and the graduate school fair.

The experience will be considered complete with a reflective writing assignment. Students will be asked to present mathematical ideas related to their observations of architecture, art, and culture in written form and in presentations. Students will form teams and create presentations of their findings to be delivered during our Math Undergraduate Seminar, and in relevant classes such as Math 330: Mathematics and Fine Arts and Math 308: Math for Secondary School Teachers (a geometric approach). The Math Undergraduate Seminar is a venue that is open to the public and regularly attended by undergraduate and graduate students from across disciplines, faculty, and community members. The best presentation will be selected to create a poster submission to the SAGE Poster Symposium giving all in attendance the opportunity to appreciate the historical missions, their architecture, culture, and their relation to mathematics concepts.

▼ 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

Since the learning experience takes place between semesters, it will relate to each of the courses differently in the Fall than in the Spring. Students will be selected from the fall semester and all students in the Spring semester will view the presentations in the following courses:

Math 330: Mathematics and Fine Arts: --emphasizing geometric concepts and patterns through hands-on learning. This course is taken by a several different majors.

Math 499: Seminar -- This seminar is open campus-wide, attended by undergraduate and graduate students, as well as faculty and community members, creating a venue with a wide impact. Students learn about the relationship mathematics has in various sub-disciplines, inter-disciplines, and careers. Large majority math majors with some Computer Science, Physics or Liberal Arts, especially those interested in elementary math education.

Math 318: Math for Secondary School Teachers: Geometry-based mathematics education course.

▼ 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

The attendance to all planned Mission trips and JMM Special Sessions on Mathematics and Arts and Art Exhibit will taken by a signup sheet. At the end of the trip students will be required to submit a reflective essay describing their findings and experience. We will also distribute an anonymous survey about students feedback to determine if our learning goals are met.

▼ 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

[MissionsJMM-ira-travel-budget-form-ay16-17 \(1\).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

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

Students and faculty are expected to pay for ground transportation and meals. The out-of-pocket expense is \$5,128, and is noted in the attached IRA budget travel form.

8. Promoting Participation

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

The Math Undergraduate Seminar is open to the public and regularly attended by undergraduate and graduate students from across disciplines, faculty, and community members. Since this venue reaches a large, broad audience, we will begin advertising the activity at the Seminar, in addition to the classes mentioned about (Math 499, Math 330, Math 318). Posters will also be created and strategically placed where there is a large foot-traffic. The intended audience is any undergraduate student interested in the interface of mathematics and art. Students will be selected from an applicant pool based on their answers to survey questions, and faculty recommendations.

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

Students that participate in this activity will be asked to compose reflective writing reports, and in teams, create presentations to be delivered in several venues. These include in-class presentations, Math Undergraduate Seminar, the Math Association of America regional conference, and the SAGE Poster Symposium.

9. Sustainability

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

Sustainability

This activity sustains the multicultural and integrative studies CI mission pillars, providing students with a unique experience that can only be found at CI. Visiting local sites will illustrate the use of mathematics as it relates to local art and architecture in an exciting way. It is an appropriate activity whenever national mathematics conferences includes interdisciplinary math and art seminars while taking place relatively locally.

10. Approval and Acknowledgement

Program Chair/Director

Grzegorzcyk, Ivona

Dean

Meriwether, James H

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 is a very interesting proposal that combines math and art. The activities will introduce students to applications of mathematics to art and architecture and make local landmarks it relevant to them. I strongly support it for funding.

 Ivona Grzegorzcyk _____ Oct 3 2017 _____

▼ 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

Makes use of multiple courses, strong in interdisciplinarity, and includes dissemination for a range of students on campus. Would suggest that if the project is funded by IRA, students be encouraged to apply to the Student Research Council to see if there is funding to help defray their out of pocket conference costs.

 Marion Adler _____ Oct 11 2017 _____

