



<http://www.csuci.edu/ira/index.htm>

Application
Instructionally Related Activities Funds Request
2013-2014 Academic Year

DEADLINES: Application Submitted to AVP:
Fall and Academic Year 2013-14: 03/01/13
Spring 2014 deadline: 10/01/13

Submittal Process: Applications must be first be signed by your program chair and then submitted to the appropriate AVP for approval. AVP's will next forward application to the IRA Coordinator for review. If there are questions or concerns, you may be asked for revisions or additional information. The IRA Coordinator will then forward applications to the IRA Committee for consideration.

Fiscal Management: Project Sponsor's program will be responsible for all costs incurred over and above what is funded through the IRA award and will be responsible for seeing that any revenue that is intended to offset the amount of the IRA award is transferred accordingly.

Duplicate requests- if Sponsor is submitting multiple proposals for recurring events involving speakers, musicians, etc., please combine your requests into one proposal.

Activity Title: Internships on the ATLAS experiment at the European Organization for Nuclear Research (CERN)

Project Sponsor/Staff (Name/Phone): **Dr. Geoff Dougherty (X 8990)**

Activity/Event Date(s): 10-week Internships starting 6/1/2014

Date Funding Needed By: **January 2014**

***Please Note that for Fall Requests the earliest that you will be notified of funding availability will be early June 2013 and for Spring Requests early January 2014.*

Previously Funded by IRA? YES NO If Yes, what Semester/Year? Summer, 2013
 Proposal(s) # ___521_____ (if known)

Report submitted for previously Funded Activity?: YES NO

***Please attach copy of previous IRA Report – See attached!**

Academic Program or Center Name: Math and Applied Physics

Estimated total Course Fee revenue:

Amount Requested from IRA: \$11,200 (Should match "Total Requested from IRA" on Page 5)

Estimated Number of Students Participating: 5

Conditions and Considerations Checklist

Please check if any of the following apply to your IRA:

- 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 themselves.
- Large Event**- For a large event, consultation with the campus Event Coordinator's office at (805)437-8548 is required.
- Equipment Purchase**- If requesting large equipment purchase -over \$200, or will be a fixture installed on campus- Project Sponsor must show proof of correspondence with OPC Administration. In addition, all other purchases must follow Procurement Guidelines.
- Field Trip**- Sponsor must comply with all policies found at <http://www.csuci.edu/hr/AcademicFieldTripGuidelinesandForms.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.
 - Exempt from IRB Approval** –If your project is exempt from IRB review, include copies of correspondence with IRB Board. It is the Project Sponsor's responsibility to inquire with the IRB **prior** to IRA application submission to determine if the project is exempt from IRB review so that funding is not delayed.
- IT Requirements**- If your activity has IT requirements, your application requires proof of correspondence and approval from IT Administration.
- 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.
- 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/OPC Requirements, Infrastructure/Remodel**-Requires proof of correspondence with OPC Administration.
- Late Submission** - Requires explanation for emergency funding.
- Other** -

Instructions and Requirements – Written Portion

Please provide the following in your application:

1. **Brief Activity Description.** Describe the activity and its relationship to the educational objectives of the students' program or major.

Last year Channel Islands joined the CSU-wide Nuclear and Particle Physics Consortium (<http://zimmer.csufresno.edu/~yogao/ATLAS/CSU%20ATLAS%20Consortium.html>), which offers students the opportunity to work and study on the ATLAS experiment of the LHC (Large Hadron Collider) at CERN for 10 weeks during the summer.

We sent 3 students to CERN in summer 2013. They were so successful that two have been invited back, and one has secured a MS place at CSU Fresno on the strength of his work at CERN.

We hope to build on this success by sending 6 students in the summer of 2014. They will work on ATLAS physics and computing projects and attend the famous CERN Summer Student Lecture Series. They will test the ATLAS detector, improve and develop tools to monitor the sub-detectors, and analyze ATLAS data. The ATLAS collaboration consists of ~3000 physicists from 38 countries, among them, ~500 US physicists from ~40 prestigious universities (Harvard, Yale, MIT, Columbia, UC-Berkeley, etc.). This offers our students outstanding opportunities to collaborate with top physicists, engineers and computer scientists.

2. **Relation to 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.
 - a. Please list all classes that directly relate to the proposed activity.
 - b. For each class listed in #2a, 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.
 - a. The students will do two courses in preparation for the internship, and report their experiences on completion ...
Phys 497-1 Directed Studies (Programming and ROOT), Fall 2013
Phys 497-2 Directed Studies (Particle Physics for CERN), Spring 2014
Phys 499 Senior Colloquium
 - b. Phys 497-1 will prepare the students to program in ROOT, as used in the ATLAS experiments at CERN
Phys 497-2 will prepare the students to understand the theory and hardware used at CERN for fundamental particle detection
On return, the students will report their experiences to their peers and the community through Phys 499 Senior Colloquium.

On return, the students will report their experiences to their peers and the community through Phys 499 Senior Colloquium.

3. **Learning Outcomes.** List all expected learning outcomes, as connected specifically with each course listed in #2.

Phys 497-1:

The student will have sufficient expertise in ROOT programming to undertake computational research under the direction of a faculty mentor in an area that applies physics to the generation of new knowledge or technologies, and will do this professionally.

Phys 497-2:

The student will be able to:

Apply principles to model and solve representative problems analytically and computationally, at an intermediate level from the primary physical theories of fundamental nuclear particles.

Design and conduct experiments, build scientific equipment, and analyze data.

Phys 499:

Communicate professionally to a technical audience both orally and in writing.

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 30 days after your activity.**

The students will be continuously assessed at CERN on their effectiveness and contributions to the ATLAS team, and will present their research work at ATLAS meetings. They will also be assessed in Phys 499 in the fall on presentations which they will give at CI and at CSU Fresno.

5. **Activity Budget.** Please enclose a complete detailed budget of the entire activity. **Bold** specific items that you are requesting IRA to fund (Page 6).

Excel file attached.

6. **International Trips.** If your event is an international trip submitted through the Center for International Affairs, you must include a copy of the program budget as submitted to CIA (to ensure congruency between the two budgets), as well as a copy of the course syllabus.

Must get this from Antonio ...

We are applying for support from Lottery funds (\$6000) and SRSC Travel funds (\$3000). We will also be applying to AAUW for support. An application to NSF has been made for CSU-wide funding.

8. **Audience/ Marketing/Promotions.** Who is your intended target audience? How will your event be advertised to students?

We are targeting all STEM students, undergraduate and graduate. Advertised meetings were held on 11th September in Broome 2325 to introduce and explain the program, and recruit applicants. The students who interned in summer 2013 explained their work and experiences at CERN. E-mails have been sent to all UD and graduate students in the STEM programs.

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

10. **Images.** For previously funded IRA activities, include copies of images from past IRA activity or activities, demonstrating student participation and levels of students served.

Included in previous year's report. A full set of images has been made available to the university for promotional purposes, and some will be uploaded to the applied Physics website.

11. **Acknowledgment.** Project Sponsor and Program Chair acknowledge that they have reviewed and accepted the Conditions and Considerations.

IRA Proposal # 612

Signatures and Dates (REQUIRED)

Geoff Dougherty

09/27/2013

Date

Ivona Grzegorzczuk

09/27/13

Date

KAREN CAREY

10/1/13

Date

REQUIRED: Attach a copy of the completed IRA Excel Budget (Either the "Regular Budget" or the "Travel Budget" page (see form for further instructions) <http://www.csuci.edu/ira/application.htm>)

IRA Travel Activity Budget



INSTRUCTIONALLY
RELATED
ACTIVITIES
CHANNELS

Activity Title: Internships at ATLAS (CERN)

2013-2014

Sponsor Name: Geoff Dougherty

Number of Students Participating: 6

Number of Faculty: 1

I.	Student traveling expenses:	Cost/ea	# Reques	Total	Comments/Additional Notes
	Airfare	\$1,500.00	6	\$9,000.00	
	Ground Transportation	\$100.00	6	\$600.00	
	Lodging			\$0.00	
	Registration Fees			\$0.00	
	Entrance Fees			\$0.00	
	Meals (included)			\$0.00	
	Cultural Activities			\$0.00	
	Vehicle/Van Rental			\$0.00	
	Other:			\$0.00	
	STUDENT TRAVEL TOTALS	\$1,600.00		\$9,600.00	
II.	Faculty Traveling Expenses:	Cost/ea	# Reques	Total	Comments/Additional Notes
	Airfare	\$1,500.00	1	\$1,500.00	
	Ground Transportation	\$100.00	1	\$100.00	
	Lodging			\$0.00	
	Registration Fees			\$0.00	
	Entrance Fees			\$0.00	
	Meals (included)			\$0.00	
	Cultural Activities			\$0.00	
	Other:			\$0.00	**
	FACULTY TRAVEL TOTALS	\$1,600.00		\$1,600.00	
III.	Operating Expense Budget	Cost/ea	# Reques	Total	Comments/Additional Notes
	Supplies			\$0.00	
	Other:			\$0.00	
	Other:			\$0.00	
	OPERATING EXP. TOTALS	\$0.00		\$0.00	
IV.	Out of Pocket Student Expenses	Cost/ea	# Reques	Total	Comments/Additional Notes
	Health Insurance	\$160.00	6	\$960.00	CSURMA cover
	Tuition/Registration			\$0.00	
	Travel Insurance			\$0.00	
	Out of Pocket Meals	\$1,000.00	6	\$6,000.00	10 weeks of meals at CERN cafeteria
	Other:			\$0.00	
	STUDENT EXP. TOTALS	\$1,160.00		\$6,960.00	
V. UNIV 392 INTERNATIONAL TRIPS ONLY. Total costs of the trip. Please Note that Formulas Calculate Automatically					
	Total Student Traveling Expenses			\$9,600.00	
	Faculty Travel Expenses, if funded at 100%			\$1,600.00	
	Operating Expenses, if funded at 100%			\$0.00	
	TOTAL IRA FUNDING REQUESTED			\$11,200.00	
	Out of Pocket Student Expenses			\$6,960.00	Not funded by the University
UNIV 391/392 & International Trips only					
	Maximum IRA student funding @ 2/3rd of student total cost			\$6,432.00	
	1/3 of total cost payable by students through course fees			\$3,168.00	
	TOTAL IRA FUNDING REQUESTED FOR INT'L TRIPS			\$8,032.00	
	Out of Pocket Student Expenses			\$1,160.00	Not funded by the University

INTERNATIONAL GROUP TRAVEL BUDGET

CERN Switzerland 2014

		Number of Participants	6		
I	Students traveling expenses:		Cost/ea	Total	Comments/Additional Notes
	Airfare		\$ 1,500.00	\$ 9,000.00	IRA application
	Ground Transportation		\$ 100.00	\$ 600.00	IRA application
	Hotel Accommodations		\$ 2,600.00	\$ 15,600.00	Lottery, SRSC, students
	Entrance Fees		\$ -	\$ -	
	Meals		\$ 1,400.00	\$ 8,400.00	Paid by students (70d x \$20 each)
	Cultural Activities		\$ -	\$ -	
	Travel Insurance		\$ 160.00	\$ 960.00	
	Vehicle/Van Rental		\$ -	\$ -	
	Other: Faculty travel		\$ 1,600.00	\$ 1,600.00	IRA application
	Other:		\$ -	\$ -	
	Other:		\$ -	\$ -	
	Other:		\$ -	\$ -	
	Other:		\$ -	\$ -	
TOTAL				\$ 36,160.00	(IRA application = \$11,200)

Please answer all questions, print, sign and submit form to Antonio Jiménez Jiménez, Director of the Center for International Affairs, BT 1275. This form must be submitted at least 6 months before departure date.

CSUCI INTERNATIONAL GROUP TRAVEL PROPOSAL
(Collaboration with CSU Consortium CERN program)

COURSE INFORMATION

Group leader(s)¹: **Dr. G. Dougherty (CSUCI); Dr. Yonsheng Gao (CSU Fresno)**

Travel location(s): **CERN, Geneva, Switzerland**

Dates of trip: **June – mid-August, 2014 (10 week internship)**

Event title: **CERN Internship**

Name of the group traveling: **CSUCI CERN**

Group leader email: **Geoff.dougherty@csuci.edu; yogao@csufresno.edu**

Proposed minimum number of participants: **4**

Proposed maximum number of participants: **6**

Do the dates of the program conflict with regular classes? Y N

Have you offered this program before? Y N

Are you a registered student organization with the Student Leadership Program?² Y N

Please respond to the following in the space after each item:

I) GROUP LEADER(S) INFORMATION

1. What is the linguistic, cultural, and/or academic experience of the group leader with the travel destination? If the group leader has limited experience with the destination, explain how the group leader plans to maximize participants' safety (for instance, will you be using a local tour company or tour guide?)

Dr. Gao is an experienced researcher in nuclear physics, and has been working at CERN for over 15 years on research projects. He is very familiar with the culture at CERN and in Geneva and the surrounding regions. He has working knowledge of French and German.

¹ At least one group leader has to be a CSUCI employee (faculty, administrator, or staff member).

² If yes, obtain signature from Assistant Director of Student Leadership Program.

Dr. Dougherty has extensive European experience. He has lived and worked there for many years, including 2 years in Switzerland).

2. Previous experience leading groups (nationally or internationally).

Dr. Gao, has accompanied CSU students to CERN for internships since 2008. Dr. Dougherty has led student groups for various internships in the US and Europe, and took the CI student interns to CERN in 2013.

II) RECRUITMENT AND ORIENTATION

1. How will participants be recruited?

The opportunity to intern at CERN was advertised by flyers posted throughout the CI campus, and at a presentation given by last year's interns at CI (Sept 11th, 2013). Interested students were advised that they would need to enroll for two courses in preparation for the internship.

2. For whom is the international group travel designed (CI undergraduate students, CI graduate students, students with a certain program area, open university students, community members, university club members, others)? Will there be any priority order when accepting participants to the program?

The CERN internship is aimed primarily at CI undergraduate students, although CI graduate students can also join. Students from all backgrounds can apply, as long as they can complete the preparation courses successfully.

The students must pass the two preparation courses to qualify for the internship. They will formally apply for a place at CERN by February, and their skills will be matched to current research. Those with the best match will be chosen. It is likely that 4-6 students will be placed.

3. **Attach an outline for the orientation session(s) for participants.** Make sure the orientation includes comments on the security of the country, both politically and medically, as determined from reports issued by the State Department.

Attached.

III) LOGISTICAL ARRANGEMENTS

1. Will your travel arrangements (e.g., accommodations, meals, excursions, airfare) be managed by an independent provider (e.g., AIFS, CEA, ISA, Australearn), a foreign university, a travel agent, etc.? Please explain.

We plan to arrange for air tickets to be purchased by the university travel office. Accommodation and meals will be at CERN. We will apply for support from a number of sources, e.g. IRA, Lottery, SRSC, AAUW.

2. Housing: where will be the participants stay during the study abroad experience? If staying with host families, are meals included?

The students will stay in hostel accommodation at the CERN facility (at a cost of approx. \$40/day/student – no meals included).

3. Meals: Are meals arranged for the participants? If not, where can participants find their own food?

Meals can be bought at the CERN cafeteria, at a daily cost of approx. \$20/student. Students will pay for their own food.

4. Transportation: What are the transportation arrangements for the trip? If traveling from location to location, what means of transportation will be used?

Transportation from the hostel to CERN and to Geneva is complementary. Side trips would be at the students' expense.

5. Safety/security: Please give a brief synopsis of the status of the security of the country, both politically and medically, as obtained from the Department of State. What arrangements have been made to maintain the safety and security of the participants throughout the program?

The Department of State website states that

“Switzerland remains largely free of terrorist incidents; however, like other countries in the Schengen area, Switzerland’s open borders with its Western European neighbors allow for the possibility of terrorist groups entering/exiting the country anonymously. You should remain vigilant with regard to your personal security. Although there have been no recent terrorist attacks in Switzerland, violence by anti-globalization, anti-Semitic, and anti-establishment (anarchist) groups does occur from time to time. This violence is typically in the form of property damage and clashes between these groups and the police. The potential for specific threats of violence involving U.S. citizens in Switzerland is remote. Nevertheless, the Consular Agencies in Zurich and Geneva may close periodically to assess their security situation.

Public demonstrations occasionally take place mostly in Zurich, Geneva, and Bern. These events are almost always known in advance to the police, who provide appropriate personnel to observe them and maintain order. Such demonstrations rarely turn violent; nonetheless, you should avoid them if at all possible”.

“Excellent medical care is widely available.” Our students will have CSU medical insurance coverage.

The students will spend the working week at the CERN facility, which issues its own security passes and monitors security and safety closely. Side trips will be monitored. Students will advise the group leader of any private trips at the weekends.

6. Attach an itinerary for the trip, including side trips.

Attached.

7. Only for student organizations: Attach a budget summary for the trip and explain how the group members are planning to pay for it.

N/A

Director Signature

Director Name (print)

Date

4. Administrative Approval

I approve this trip

Provost

Provost Name (print)

Date

President

President Name (print)

Date

Outline of orientation for work and study at CERN near Geneva, Switzerland

- 1) Travel and live in Switzerland: security issues
- 2) Medical insurance (each student is required to purchase his/her own medical insurance for his/her stay at CERN)
- 3) Paperwork (ID), security and safety training for working at CERN
- 4) Useful tips for living at CERN; possible side trips (at student's expense)

Itinerary

06/01/2014 LAX to CERN, Geneva

08/10/2014 Finish internship at CERN; travel for 1 week

08/17/2014 CERN to LAX



California State
University

**INSTRUCTIONALLY
RELATED
ACTIVITIES**

C H A N N E L
I S L A N D S

Proposal # 521

Instructionally Related Activities Report Form

SPONSOR: GEOFF DOUGHERTY

DEPARTMENT: MATH & APPLIED PHYSICS

ACTIVITY TITLE: INTERNSHIPS AT CERN

DATE (S) OF ACTIVITY: 1ST JUNE – 10TH AUGUST, 2013

E-mail to the IRA Coordinator at lisa.ayre-smith@csuci.edu within 30 days after the activity.

Thank you for your commitment to engaging our students!!

ANSWER THE FOLLOWING QUESTIONS:

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY;

The (3) students joined separate research groups at the top particle physics facility in the world, and were assigned specific tasks within the groups for a period of 10 weeks under the supervision of a CERN faculty member. They have presented the results from their internship at math seminars at CSU Fresno and CSUCI, as well as at the Channel Island presidents circle and other community events.

(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?

The activities were closely related to the preparatory courses (Phys 497), in which they learned how to program in ROOT and the basics of fundamental particle physics. Students learned about very current physics applications and worked with top scientists in the area.

(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?

The internship taught the students how to work collaboratively in a team with top international physicists and engineers, and take the responsibility for a specific part of the team's project. It showed them the level of effort, commitment and performance required to succeed in such an environment. Students being able to collaborate with the top scientists serve as role models for future science students at CSUCI.

(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?

The CERN faculty members generally took a 2-week vacation during the 10 weeks, and a back-up advisor was not always available. This is being addressed for future visits.



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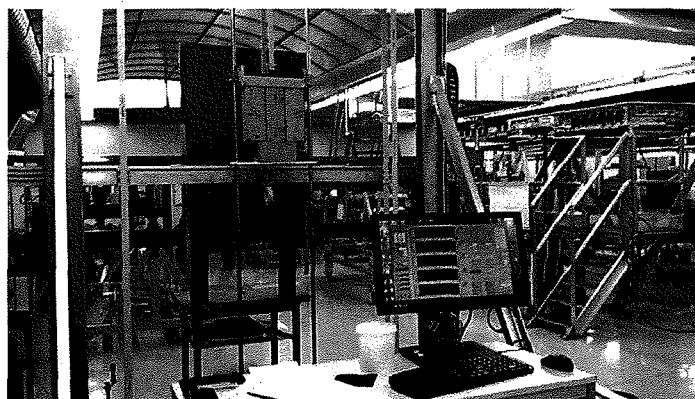
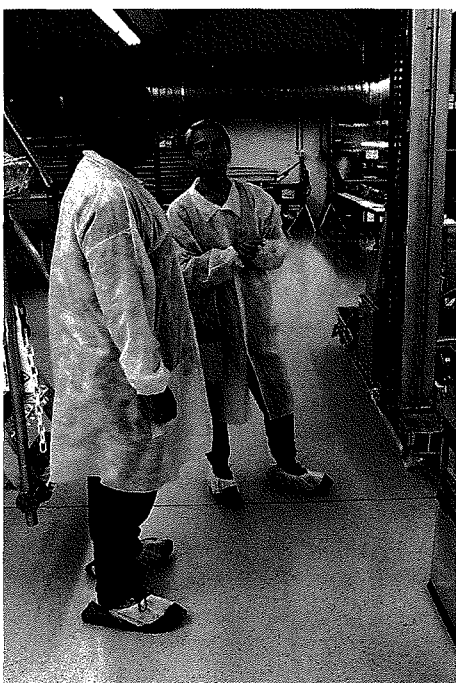
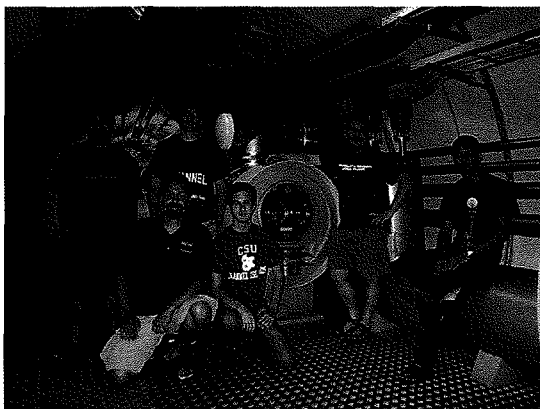
(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?

We will try to coordinate early with CERN advisors, so they can deliver more specific details of each project that our students will work on at an earlier stage. This way they can start preparing several weeks before they travel.

(6) WHAT DID YOU LEARN FROM THE PROCESS?

It was very interesting to be exposed to the procedures at CERN, and to see the multi-faceted research approach that has led to so many fascinating discoveries. It was also good to see that our best students are on a par with the best from around the world.

A selection of images (summer 2013)





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ACTIVITIES**

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