



**Instructionally Related Activities:
Proposal for New Recognition—Effective Fiscal Year 2022-23**

PLEASE READ BEFORE COMPLETING THIS PROPOSAL

Instructionally Related Activities (IRAs) are extra-curricular activities that are integrally related to formal instructional offerings at Cal Poly. IRAs are intended to enhance student learning and enrich the student experience. Please note: The university recognizes two distinct categories of student organizations: clubs and Instructionally-Related Activities. Each enjoys recognition by the university but have unique sources of funding which cannot be comingled. Therefore, a group that currently functions as a student club will lose its club status and associated funding if it receives IRA recognition.

Please keep your answers concise. Attach supporting documentation if applicable—web pages, newspaper articles, etc. Boxes automatically expand as you type.

1. Proposed Activity Name <u>Civil Engineering Design</u>	
2. Proposer/Advisor (Cal Poly Faculty or Staff Member) and primary student contact	
<u>Terry Johnson</u> <i>Proposer/Advisor Name</i> <u>Civil & Environmental Engineering</u> <i>Department/Unit</i> <u>tjohn123@calpoly.edu</u> <i>E-mail Address</i>	<u>Assistant Professor</u> <i>Title/position</i> <u>CENG</u> <i>College/Division</i> <u>6-1234</u> <i>Phone Number</i>
<u>Jael Wong-Gonzalez</u> <i>Primary student contact name (if applicable)</i>	<u>jwgonz89@calpoly.edu</u> <i>Student contact Cal Poly E-mail</i>
3. Category Select the category that best matches the proposed activity.	
<div style="display: flex; align-items: flex-start;"><div style="flex: 1;"><input checked="" type="checkbox"/> College – Activity will tend to draw participants from the college and be aligned with the objectives of one or more academic departments or programs. <input type="checkbox"/> Student Affairs – Activity will draw participants from the broad campus community and be aligned with the objectives of one or more departments or programs within Student Affairs. <input type="checkbox"/> University Interest - Activity will draw participants from the broad campus community and be aligned with the objectives of one or more academic departments or programs. The activity will not be directly aligned with Student Affairs.</div></div>	
4. Instructional/Program Affiliation. IRAs must be related to a formal program or instructional offering at Cal Poly. See Executive Order #429 on the Academic Programs IRA page. List one or more courses, majors, or other type of program where the subject matter supports the activities or goals of the proposed IRA. For example, the subject matter taught in Materials Engineering and Civil Engineering support the design work for the Steel Bridge competition IRA. Note that IRA funds cannot be used to cover course or academic program expenses. <i>Courses, majors, or other programs:</i> <u>Civil Engineering and Materials Engineering</u>	
5. Estimated Involvement Number of students projected to be active participants in this activity from each college CAFES <u>0</u> , CAED <u>1</u> , OCOB <u>0</u> , CENG <u>15</u> , CLA <u>5</u> , CSM <u>3</u>	

6. Club Status. Note that an activity cannot be both an ASI-recognized club and an IRA. If an existing ASI club is recognized as an IRA, it will lose its club status and funding.

Is the proposed activity currently recognized as an ASI club? Yes/No No

If Yes: Name of club _____

Why do you wish to change to IRA recognition? _____

Will the activities of the club be changed in any way? Yes/No _____

If Yes: How will the activities change? _____

7. Mission, Goals, and Outcomes

a. Briefly describe what students will do as participants in this activity. For example, “Students will develop a prototype solar powered vehicle during Fall and Winter for an annual Spring competition sponsored by abc, competing against teams from colleges and universities across the state / region / nation / internationally. Students will apply their learning in the areas of in the development of the prototype and during the competition.”

Students will work as a team to develop a movable bridge prototype and compete in the annual NCE competition, typically held in Seattle, WA. Design and development will occur in Fall and Winter Quarters, with the West Coast NCE competition in the Spring. Students will apply principles from Civil Engineering, Mechanical Engineering, Materials Engineering, and related fields in the design and development, and these plus graphic arts and communication in preparing the posters and during the competition.

b. What are the goals of the proposed activity – what will students accomplish? For example, “The student team will be supplied by the organizers of the abc competition with specific requirements that must be met by the prototype. Students will design one or more initial prototypes and test them against the requirements, improving the design after each test. The final prototype will be taken to the competition to be judged against prototypes from twenty to thirty other universities.”

NCE will supply each team registered for the competition with a set of criteria for a prototype movable bridge, including type (retractable, swing, folding, tilt, etc.), scale, and specific strength and size requirements. Students will design and build initial prototypes based on the criteria, settle on a design to use, then improve the design and build a final scale prototype to take to the competition. Students will also prepare up to five posters outlining the design process and explaining the final design. At the competition, the prototype will be subject to several tests by the judges, and the student team will present a poster session for the judges and other competitors. Typically, twenty-five to thirty universities from the Western United States participate in the competition.

c. How do you plan to accomplish these goals? For example, “Student teams will meet at least weekly in the PROVE lab during Fall and Winter quarters. During Fall, students will develop initial designs and complete component testing. During Winter, students will build and test prototypes, improving the design(s) based on results. In April, students will complete the final prototype(s). In May, students will take the final prototype(s) to the competition.”

The student team will be recruited from Civil and Materials Engineering courses and by word of mouth by current student members during the first weeks of Fall Quarter. The team will meet weekly as a whole to review project progress, and sub-teams will meet at least twice weekly on their portion of the design and development. During Fall Quarter students will develop initial designs and components, during Winter Quarter students will fine-tune the prototype, and the competition is in Spring Quarter.

d. It is important that IRA fees be allocated in ways that maximize student value. One way to ensure this is through assessment of student learning outcomes. **Using the list of action verbs on the last page of this form** as a guide, provide at least one learning outcome for what students will know or be able to do as a result of their participation in the IRA. For example, “1. be able to **design** and **build** components of solar powered motors and light weight vehicles based on a given set of criteria.” “2. be able to **design** experiments to **determine** the suitability of a machine against given criteria and **recommend** improvements.” “3. **prepare** a presentation and be able to **explain** in concise terms the reasoning for their design decisions to a panel of judges.”

As a result of participation, students will:

Outcome 1: be able to analyze project requirements and experiment with various designs and materials to determine the best design to fit the needs. required

Outcome 2: be able to describe their design and development processes and defend their decisions for design choices optional

Outcome 3: _____ optional

8. Assessment Plan

IRA Goals: Describe how you will assess one or more of the goals listed in section 7b. Results will be reviewed in future continued funding proposals, should this activity be recognized as an IRA. Example: For a team of students participating in a competition, one measure of achievement of IRA goals could be the team's success in the competition (1st / 2nd / 3rd place team, individual student honors, etc.)

Success will be determined based on team rankings and analysis provided by the judges at the NCE competition. We will also conduct a survey of all IRA participants to judge their satisfaction with and the learning effectiveness of the IRA.

Student Learning Outcomes: Describe how you will assess the learning outcomes of this proposed IRA. Results will be reviewed in future continued funding proposals, should this activity be recognized as an IRA.

a. Which learning outcomes from section 7d. will you be assessing? e.g. 1 and 3 1, 2

b. Check the assessment methods that will be used to determine to what degree participating students met the intended learning outcomes provided in section 7d.

☐ Student Focus Groups / Interviews

☒ Rubric-based evaluation of artifacts/performances

☒ Student Surveys

☐ Other – describe _____

c. When do you plan to gather this data? Rubric at the competition and Survey at the end of Spring Quarter

9. Approvals. All signatures are required. Forms with missing signatures will not be considered by the committee.

Route forms for signatures through Adobesign. For instructions, see

<https://calpoly.atlassian.net/wiki/spaces/CPKB/pages/32047118/Adobe+Sign+-+QuickStart> and

[Send a Document to a Single Signer or Multiple Signers](#)

Routing is different for each college/division. See immediately after this section for routing instructions.

By signing below, I confirm that this activity is aligned with the academic mission(s) of the department, college, division, or university, and that I will advise/supervise/support these activities consistent with university policies and procedures.

Proposer/Advisor signature (from section 2)

Date

By signing below, we confirm that this activity is aligned with the academic mission(s) of the department, college, division, or university, and that we will assign university faculty and/or staff to supervise these activities in a manner consistent with university policies and procedures.

Francis Sojourner

*Department Chair/Head or Program Director
(Name)*

Signature

Date

Lashawn Stevens

*College Dean/Associate Dean/Vice President or
designee (Name)*

Signature

Date

SCROLL DOWN TO READ INSTRUCTIONS FOR SIGNATURE ROUTING

The Proposer will sign twice – Word document and Excel sheet

The Department Head/Chair/Director/AVP will sign twice – Word document and Excel sheet

Any added signers will sign once and be added to the Word document under the Dean/Associate Dean/Vice President signature

The College Dean/Associate Dean/Vice President or designee will sign once – Word document

Routing instructions:

Student Affairs

1.Proposer/Advisor, 2. Department or Division Head/Director/AVP, 3. Rick Solomon (rsalomon) as Approver (initial under Dean signature line), 4. Keith Humphrey (humphrey) as Dean/VP, 5. Jessica Carson as Acceptor (carson)

College of Science and Mathematics

1.Proposer/Advisor, 2. Department Chair, 3. Associate Dean Derek Gragson (dgragson), 4. Emi Youngquist as Acceptor (eyoungqu), 5. Jessica Carson as Acceptor (carson)

College of Liberal Arts

1.Proposer/Advisor, 2. Department Chair, 3. Joy Sisler (jsisler) as Approver (sign under Dean signature line), 4. Josh Machamer (jmachame) as Approver (sign under Dean signature line), 5. Dean Phillip J. Williams (pjlw), 6. Lily Curtis (licurtis) as Acceptor, 7. Jessica Carson as Acceptor (carson)

Orfalea College of Business

1.Proposer/Advisor, 2. Department Chair or Area Director, 3. Kristy Cutter-Rogers (kcutter) as Approver (sign under Dean signature line), 4. Interim Associate Dean Stern Neill (sneill), 5. Jessica Carson as Acceptor (carson)

College of Engineering

1.Proposer/Advisor, 2. Department Chair, 3. Associate Dean Eric Mehiel (emehiel) 4. Jessica Carson as Acceptor (carson)

College of Agriculture, Food and Environmental Sciences

1.Proposer/Advisor, 2. Department Chair or Area Director, 3. Jacquie Wright (jwrigh20) as Acceptor (initial under Dean signature line) 4. Associate Dean Cath Kleir (ckleir) 5. Jessica Carson as Acceptor (carson)

College of Architecture and Environmental Design

1.Proposer/Advisor, 2. Department Chair, 3. Mariam Emyan (memyan) as Acceptor (initial under Dean signature line) 4. Associate Dean Mark Cabrinha (mcabrinh) 5. Jessica Carson as Acceptor (carson)

General Academic Affairs (University Interest)

1.Proposer/Advisor, 2. Department or Division Head/Director/AVP, 3. Jessica Carson (carson) as Approver (initial under Dean signature line) 4. Associate Vice Provost Bruno Giberti (bgiberti)

For more information, see the IRA page at Academic Programs and Planning

<https://academicprograms.calpoly.edu/content/IRA/index>

Important dates:

Proposal and Budget Forms, with all signatures, are due to your College Dean's Office or, for Student Affairs IRAs, the Vice President Student Affairs, no later than end of day on **Friday 2/4/2022**.

All forms reviewed and approved by Deans and VP Student Affairs are due to Jessica Carson in Academic Programs and Planning no later than end of day on **Friday 2/11/2022**. Approved and signed forms may be scanned and emailed to carson@calpoly.edu or sent as an Acceptor via Adobesign.

The IRA Advisory Committee will review all proposals and determine recognitions no later than 3/28/2022, after which all proposers, colleges, and VP Student Affairs will be notified.

**Instructionally Related Activities (IRA)
Budget Proposal - Effective Fiscal Year 2022-23**



Proposed IRA Name: Civil Engineering Design

Department Name: Civil & Environmental Engineering

DEPT ID Number: 110200

Important - Complete this form only if seeking FIRST time recognition.

This proposed budget should demonstrate how IRA funds, if approved, will be utilized. Budget should align with the Purpose and Goals provided in section 7 of the Proposal for New Recognition.

Note: Balances on June 30th in excess of 20% of the year's allocation may require a written explanation and spending plan. Unexpended balances in excess of the 20% may be subject to transfer to division level accounts.

Complete the detailed expense budget below and on the following pages.

Important: Note the two boxes at the top of each category: "Total" and "Portion to be funded with IRA subsidy". Enter your budget values for "Total" where the boxes are shaded slightly darker than the surrounding cells and are surrounded by a thick box. Boxes surrounded by a thin line and not shaded darker are auto-filled from the detailed entries requested for that category. All categories require you to enter "Portion to be funded with IRA subsidy". These may be the same as or less than the "Total". These values are transferred to the last page for calculating the requested IRA subsidy.

Expenditure Guidelines are available on the IRA website at
http://www.academicprograms.calpoly.edu/content/IRA/ira_budget_guidelines_032405

Detailed Expenses - Uses of IRA Funds

Please provide detailed explanations of planned expenditures. Click in any box to begin typing.

Salaries & Wages:				
Total:		Portion to be funded with IRA subsidy:		
		\$1,464.00	\$384.00	
<p>To whom are salaries and wages paid? What is the role of these individuals for this IRA? Note that salaries, stipends, or wages for faculty, students, or others to participate in IRA programs/activities may not be paid using IRA funds. However, a case may be made to pay employees such as lab technicians or truck drivers to perform tasks essential to the IRA.</p> <p>We will pay a truck driver to haul equipment to the competition in Seattle. We will pay 8 hours a day during the days they are driving and cover their food and hotel during the drives and their stay in Seattle. Driver pay is shown here and food and lodging is shown on the Travel page. We will also use the Mustang 60 lab to build our prototypes and some parts will need to be machined by a shop tech at a cost of \$16 per hour.</p>				
1. Who/Description:	truck driver - drive prototype and supplies to and from competition in Seattle.			
# people	1	# hours	48	Hourly wage \$22.50 Total: \$1,080.00
2. Who/Description:	CNC shop tech - machining of various components			
# people	1	# hours	24	Hourly wage \$16.00 Total: \$384.00
3. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
4. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
5. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
6. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
7. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
8. Who/Description:				
# people		# hours		Hourly wage Total: \$0.00
Grand Total:				\$1,464.00

Supplies & Services:			
Total:	\$2,650.00	Portion to be funded with IRA subsidy:	\$2,650.00
Explain below how these supplies and services support, or will be used for, the activities of this IRA.			
Materials to build the prototypes and printing of posters to display at the competition.			
Provide below a detailed list of supplies & services and costs for each. Attach additional sheets of necessary.			
1. Item & purpose:	steel sheet metal of various sizes and thicknesses		
	Quantity	Cost each	Total:
	10	\$100.00	\$1,000.00
2. Item & purpose:	connection hardware - bolts, rivets, etc. - lot		
	Quantity	Cost each	Total:
	1	\$275.00	\$275.00
3. Item & purpose:	welding supplies, lot		
	Quantity	Cost each	Total:
	1	\$500.00	\$500.00
4. Item & purpose:	brass, aluminum, steel bar for machining, lot		
	Quantity	Cost each	Total:
	1	\$500.00	\$500.00
5. Item & purpose:	foam core sheets, poster board, printing		
	Quantity	Cost each	Total:
	5	\$75.00	\$375.00
6. Item & purpose:			
	Quantity	Cost each	Total:
			\$0.00
7. Item & purpose:			
	Quantity	Cost each	Total:
			\$0.00
8. Item & purpose:			
	Quantity	Cost each	Total:
			\$0.00
9. Item & purpose:			
	Quantity	Cost each	Total:
			\$0.00
10. Item & purpose:			
	Quantity	Cost each	Total:
			\$0.00
Grand Total:			\$2,650.00

Travel:				
Total:	\$7,748.00	Portion to be funded with IRA subsidy:	\$1,050.00	
Explain below who is traveling, what and where they are traveling to, and why. Then provide a brief description for each category, such as, for Personal Car Mileage: "Drive personal car to Fresno and back" or for Vehicle Rental: "Rent 7 person van to drive team to competition in Los Angeles"				
Travel paid through the IRA will include a truck driver and six students. The truck driver will haul the prototype(s) to the competition in Seattle and back. The students will fly from SLO to Seattle for the competition, stay three nights, then return to SLO. The faculty advisor travel is being paid by sources outside of the IRA. We will fundraise to cover all student and driver travel costs other than the conference and competition fees.				
Air Travel:	student competition team: round trip airfare to Seattle			
# people	6	cost per person	\$425.00	Total: \$2,550.00
Personal Car Mileage:				
# people		# miles		Total: \$0.00
Vehicle Rental:				
# vehicles		# days		Total: \$0.00
Transportation Other:	Shuttle bus from airport to hotel and back in Seattle, \$20 each way			
# people	6	cost per person	\$40.00	Total: \$240.00
Lodging:	conference hotel, 3 students per room. \$270 per room divided 3 ways = \$90/student/night			
# people	6	# nights	3	Total: \$1,620.00
Food:	students will bring some food from home			
# people	6	# days	4	Total: \$600.00
Conference / Competition Fee:	Conference fee (\$150), competition fee (\$25)			
# people	6	cost per person	\$175.00	Total: \$1,050.00
Other (describe):	Parking at SLO airport, 4 days at \$12/day. Students will carpool to airport in one car.			
# people	1	cost per person	\$48.00	Total: \$48.00
Other (describe):	Truck driver motel/hotel- 2 nights each way while driving (4 nights total), 4 nights in Seattle. Average \$150 per night for 8 nights.			
# people	1	cost per person	\$1,200.00	Total: \$1,200.00
Other (describe):	Truck driver - 8 days of food at \$55/day			
# people	1	cost per person	\$440.00	Total: \$440.00
Grand Total:				\$7,748.00

Other:			
	Total:	\$0.00	Portion to be funded with IRA subsidy:
			\$0.00
Explain below in itemized detail any other types of expenses and how they relate to this IRA.			

To Program Reserve for use in 2023-24:			
	Total:	\$1,050.00	Portion to be funded with IRA subsidy:
			\$1,050.00
Explain why funds will be held in reserve for the following year(s).			
<p>Conference and competition registration fees are due in early September, likely before allocations for the 2023-24 year will be distributed. Estimated fees are 6 people x \$175 each = \$1050. We will need to roll-forward funds from each year to the next so the conference fees can be paid on time.</p>			

Expense Budget Summary and Approvals

USES OF FUNDS	Totals are auto-filled from prior pages	IRA Subsidy request auto-filled from prior pages
Salaries & Wages:	\$1,464.00	\$384.00
Supplies & Services:	\$2,650.00	\$2,650.00
Travel:	\$7,748.00	\$1,050.00
Other:	\$0.00	\$0.00
To Program Reserve:	\$1,050.00	\$1,050.00
Total uses of funds:	\$12,912.00	\$5,134.00

SOURCES OF FUNDS	2022-23 Projected Amount	
Requested IRA subsidy:	\$5,134.00	auto-filled from above right
College/Department discretionary funds:		
College-based fees:		
*Other (explain below):	\$7,778.00	
Total sources of funds:	\$12,912.00	

Total sources of funds:	Planned total uses of funds = total sources, perfect!
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*Provide below a detailed explanation of "Other" sources of funds.	
<p>We will fundraise to cover the cost of the driver hauling the prototypes and the team travel to Seattle and back. We will work with a local restaurant for partial proceeds of a fund-raising dinner and we will reach out to local Civil Engineering firms for support.</p>	

I verify this budget report is accurate and submit this proposal to request funding. **Both Signatures REQUIRED**

Terry Johnson

Proposer / Advisor (print)

Signature

Date

Francis Sojourner

Department Chair/Head or equivalent (print)

Signature

Date

Below to be completed during the funding phase in Spring Quarter:

Recommended IRA subsidy: _____

College Dean / VP Student
Affairs / IRAAC co-chair or
designate:

Name

Signature

Date

Student Council Chair
(college) or ASI President
(Univ Interest):

Name

Signature

Date

Budget Analyst:

Signature indicates projected uses
of funds are within expenditure
guidelines

Name

Signature

Date

revised December 2021
Academic Programs and Planning