



CAL POLY

Noyce School of Applied Computing
College of Engineering

Request for Proposals Academic Year 2024-2025

Overview

The Noyce School of Applied Computing at Cal Poly is excited to announce funding opportunities for the 2024-2025 academic year. This RFP seeks proposals from Cal Poly faculty for projects that align with the School's mission to promote excellence, ethics, and equity in applied computing. Proposals are invited under two categories: *Research* and *Teaching Innovation*. While the RFP is open to all Cal Poly faculty, each project must include at least one faculty member from a Noyce School-affiliated department—Computer Engineering, Computer Science and Software Engineering, Electrical Engineering, or Statistics—serving as either Principal Investigator (PI) or Co-Principal Investigator (Co-PI). All researchers involved in the project must maintain a Cal Poly affiliation for the duration of the project's performance period. Cross-departmental and cross-college collaborations are strongly encouraged.

The total funding available for this cycle is \$400,000, with a minimum of \$150,000 allocated to Teaching Innovation and up to \$250,000 for Research. The allocation between tracks is flexible and may be adjusted depending on the quality of proposals received. Individual project budgets may not exceed \$40,000.

Noyce School's Mission and Vision

Applied Computing. We define "Applied Computing" in the broadest possible sense, encompassing the broad range of fields—from information processing to cyberphysical systems that contribute to the meaningful advancement and application of computing technology. This includes the design, operation, and implementation of computational technology, regardless of discipline.

Mission. The School of Applied Computing's mission is to positively transform the application of computing at Cal Poly and beyond. This will be achieved through the continuous and collaborative development of a modern and interdisciplinary curriculum and innovative research initiatives that reflect the values of equity, ethics, and excellence. The School of Applied Computing fosters a collaborative and inclusive community of faculty, staff, and students working together to make a positive, real-world impact and lead the University in its applied computing endeavors.

Vision. We envision the School of Applied Computing becoming a recognized and enduring entity of high-quality education and research in the broad disciplines of Applied Computing. We will be a leading and inclusive School that supports a diverse community of faculty, staff, and students, working together to advance the discipline of Computing and its applications, and ensuring their long-term professional success and personal growth. We strive to provide all students with the best possible applied computing education, achieved through a modern, equitable, and inclusive curriculum, access to state-of-the-art computing facilities, and through multidisciplinary projects and faculty research, that, in combination, will contribute to their intellectual growth and a conscientious approach to computing.

1 Funding Limits and Faculty Support Options

Each proposal may request a maximum budget of \$40,000, which should cover all project expenses, including faculty support, equipment, student support, travel, and other project resources. Faculty support options within this budget include:

- Up to 10 WTUs of release time from teaching responsibilities.
- Up to \$30,000 in additional compensation to allow faculty to focus on project development outside their normal appointment.

Proposers may adjust these allocations to focus more of their budget on resources, equipment, or student support if this better aligns with project goals. Each proposal must also include a letter of support from the relevant department chair, confirming agreement with any requested release time arrangements.

2 Proposal Tracks and Objectives

Research Track

The Research Track aims to foster innovative applied computing research with the potential to address real-world challenges. We seek projects that not only advance the boundaries of applied computing but also provide rich, hands-on research experiences for students. Preference will be given to proposals with strong potential for external funding, cross-disciplinary engagement, substantial student involvement, and alignment with the Noyce School's values of equity, ethics, and societal benefit. Expected outcomes for these projects include peer-reviewed publications, conference presentations, and the groundwork for future external funding applications. These research initiatives should create pathways for students to engage deeply in applied computing research, contributing to a collaborative and impactful "Learn by Doing" environment at Cal Poly.

Teaching Innovation Track

The Teaching Innovation Track supports projects that promote the adoption of innovative teaching methods and curriculum designs within applied computing education. Projects under this track should aim to create new curricula, develop novel teaching approaches, or integrate emerging educational technologies. Teaching Innovation proposals are expected to lead to

improved student learning experiences, the development of effective instructional materials, and scalable teaching strategies that can be adopted across various courses and departments. Priority will be given to proposals that are interdisciplinary, emphasize active learning, consider ethical and societal impacts, and demonstrate measurable student impact.

3 Proposal Requirements

Each proposal must include the following sections, with formatting limited to 12-point font and 1-inch margins.

Cover Page

The cover page should provide a project title, contact information for the PI and any Co-PIs, the track selection (Research or Teaching Innovation), and a concise project abstract (250 words). This abstract should summarize the project's purpose, goals, and relevance to the Noyce School mission.

Project Description

In a maximum of three pages, the project description should provide an overview of the project's scope and background, establishing its relevance within applied computing and alignment with the Noyce School's values of equity, ethics, and societal impact. Clearly outline the project's specific aims and objectives, including any advancements in curriculum design, teaching innovation, or research outcomes.

Describe the methods and approach, detailing the key resources required, such as major equipment or facilities. Address ethical and social justice considerations, including plans for IRB approval if human subjects are involved. Include a timeline with key milestones to clarify the project's stages and expected achievements.

List potential external funding sources relevant to the project, with links as applicable. Summarize how students will be engaged through hands-on learning experiences, particularly in ways that encourage interdisciplinary skills or active learning, depending on the project track. Additionally, a sustainability plan should discuss how the project's impact will be maintained or expanded beyond the funding period.

Budget and Justification

Each proposal must include a complete budget using the provided template, with rows added as necessary to cover all relevant expenses. The budget should include a general outline of funds by category, specifying anticipated expenditures by the end of the award period. Funds may be allocated for various purposes, including student stipends, travel, conference and journal publication fees, hardware and software purchases, and additional compensation or assigned time for faculty and staff. Funds cannot be used for continuing funding of current projects or for quarter-to-semester (Q2S) conversion projects.

Alongside the completed budget template, provide a one-page budget justification that offers a detailed breakdown of planned spending in each category, explaining the need for each item and

supporting the amounts requested. This justification should clearly link the resources requested to the project's goals, emphasizing responsible and impactful use of funds.

Supporting Documents

Each proposal should include the following supporting materials:

- Biographical Sketch: A one-page bio for each project team member, including names, affiliations, and a brief summary of qualifications relevant to the proposed activities.
- Letter of Support: A letter from the department chair verifying agreement with any requested assigned or release time (if applicable).

4 Track-Specific Requirements

Research Track Additional Requirements

Within the Project Description section, Research Track proposals should discuss potential external funding sources and strategies for pursuing such funding. A dissemination plan should outline the intended venues for sharing research outcomes, such as conferences or journals. If available, any preliminary data or background research supporting the project should be included, along with descriptions of any specialized research infrastructure needed.

Teaching Innovation Track Additional Requirements

For Teaching Innovation proposals, the Project Description section should include an assessment plan detailing how the project's educational impact will be measured. Metrics for student engagement and learning outcomes should be specified, with plans for data collection and analysis. Proposers should describe a timeline for implementing and evaluating teaching innovations, addressing the project's scalability and potential for long-term adoption within the curriculum.

5 Track-Specific Evaluation Criteria

Research Track Evaluation

Research proposals will be evaluated on their innovation, alignment with the Noyce School mission, and student engagement. The potential for external funding and the feasibility of the proposed timeline will also weigh significantly in evaluations. The following criteria will guide the evaluation:

- Research innovation and merit
- Alignment with the Noyce School mission and vision
- Engagement of students in hands-on "Learn by Doing" activities
- Ethical and societal impact aligned with the Noyce School's values
- Feasibility, timeline, and budget justification

- Potential for future external funding
- Interdisciplinary collaboration and cross-departmental impact (encouraged)
- Inclusion of at least one Noyce School faculty member as PI or co-PI, with all researchers maintaining Cal Poly affiliation throughout the project

Teaching Innovation Track Evaluation

Teaching Innovation proposals will be reviewed for their originality in pedagogy, expected student impact, and alignment with Noyce School goals. Strong proposals will demonstrate thoughtful assessment plans, feasible timelines for implementation, and, where possible, potential for future external funding. Proposals will be evaluated on:

- Pedagogical innovation and originality
- Alignment with Noyce School values of equity, ethics, and excellence
- Impact on student learning and engagement
- Inclusion of meaningful "Learn by Doing" opportunities for students
- Interdisciplinary collaboration and cross-departmental impact, where possible
- Quality of assessment plan and anticipated learning outcomes
- Feasibility of project scope, timeline, and budget justification

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Evaluation Rubrics

Each proposal will be evaluated by a subset of the Noyce School Faculty Council based on the following criteria. Reviewers will assess how well each proposal meets or exceeds the expectations for each criterion, providing justification for their ratings. Proposals will receive a cumulative rating of Highly Recommended, Recommended, or Not Recommended. Final funding decisions will be made by the Noyce School Director.

Research Track Evaluation Criteria

- 1) Project Quality
 - a) Alignment with the Noyce School mission and vision.
 - b) Integration of students in meaningful ways, supporting the "Learn by Doing" model.
 - c) Clear potential to advance the field of Applied Computing or related disciplines.
 - d) Rigorous, innovative, and appropriate methodology for the proposed research.
 - e) Addressing ethical and social justice considerations, where applicable.
 - f) A well-articulated timeline that is realistic within the project period.
 - g) Inclusion of a sustainability plan, such as a strategy for follow-on funding.
- 2) Impact and Dissemination
 - a) Description of the intellectual merits and broader impacts of the project.
 - b) Potential societal benefits, including secondary uses and risks.
 - c) Feasible dissemination plan for sharing results with relevant stakeholders, such as conferences, journals, or industry partnerships.
- 3) Budget
 - a) Budget is reasonable, well-justified, and aligned with project scope.

- b) All expenses are allowable and appropriate for the proposal’s objectives.
- 4) Background and Experience
 - a) Involvement of at least one Noyce School-affiliated faculty member as PI or Co-PI.
 - b) Relevant background, training, and credentials of the project team.
 - c) Demonstrated expertise and capability to execute the project.
 - d) Qualifications appropriate for the team’s career stage and department.

Teaching Innovation Track Evaluation Criteria

- 1) Project Quality
 - a) Alignment with the Noyce School mission and vision.
 - b) Meaningful integration of students, enhancing hands-on learning experiences.
 - c) Sound and innovative approach to pedagogy supporting the “Learn by Doing” philosophy.
 - d) Effective teaching methods that engage and benefit students.
 - e) Addressing ethical and social justice considerations, fostering inclusivity.
 - f) Clearly defined timeline and milestones.
 - g) Sustainability plan, such as strategies for scaling or continuing the teaching methods.
- 2) Pedagogical Innovation and Effectiveness
 - a) Demonstration of innovative and impactful instructional methods.
 - b) Thoughtful plan for assessing student learning outcomes.
 - c) Adaptability of methods for broader use across courses or departments.
 - d) Evidence-based strategies to enhance student engagement and understanding.
- 3) Budget
 - a) Budget is well-justified, with alignment to support educational goals.
 - b) All budget items are necessary and appropriate for the project’s scope.
- 4) Background and Experience
 - a) Involvement of at least one Noyce School-affiliated faculty member as PI or Co-PI.
 - b) Relevant experience and expertise in the subject matter.
 - c) Strong foundation in effective teaching practices.
 - d) Commitment to advancing applied computing education at Cal Poly.

7 Important Dates

Important Dates

RFP Release Date	November 15, 2024
Proposal Submission Deadline	December 9, 2024 (5:00 PM PST)
Award Notification	January 15, 2025
Project Start Date	February 1, 2025
Project End Date	June 14, 2026
Final Report Due	June 14, 2026

Any unspent funds will be reclaimed upon the project end date.

8 Submission Process

All proposals must be submitted as a single PDF through InfoReady, with a deadline of December 9, 2024, at 5:00 PM PST. Proposals submitted after this deadline will not be considered.

9 Contact Information

For any questions or clarifications, please reach out to the appropriate contact below:

Contact Information

General Questions	Chris Lupo, Director (clupo@calpoly.edu)
RFP or Budget Inquiries	Noyce Faculty Council (noycecouncil@office.calpoly.edu)
Technical Support for Submissions	Aaron Sloane (asloane@calpoly.edu)

10 Post-Award Requirements

At the completion of the project period, award recipients must submit a three-page report to the Noyce Director, providing a comprehensive summary of progress and outcomes across all project activities. This report should capture the key achievements of the project, including student involvement, artifacts created, and any efforts to secure additional funding to support or expand the work.

Additionally, the report should reflect on how the project has contributed to advancing the mission and vision of the Noyce School of Applied Computing. Recipients are encouraged to describe how the project's outcomes align with the School's commitment to equity, ethics, and excellence in applied computing.