UC Partnership in Computational Transformation
Award Program
UC Berkeley - UC Davis– UC Irvine – UC Santa Barbara – UC San Francisco
2022 Call for Proposals and Application Guidelines

Program Overview

Five campuses of the University of California – Berkeley, Davis, Irvine, Santa Barbara, and San Francisco, will initiate a competitive research award program that will provide funding to member institution faculty, especially early- and mid-career faculty to advance collaborative research projects in any of the three Impact Themes. This powerful collaborative has identified three initial themes where synergies will be used to create lasting and meaningful impact. These funds may be used to start a new project, build on existing work, create proof of principal for follow-on funding, or bring something across the finish line. We expect that these research projects will highlight research synergies that are only possible with cross-discipline, cross-campus team approaches. This program will promote novel breakthroughs and innovative approaches. Awards will be made on a competitive basis via a process of expert scientific review and selection by the program Institutional Leadership team.

Impact Themes

This program will fund projects that are addressing these three Impact Themes:

1. **Addressing the Next Generation of Business and Societal Challenges: Cybersecurity**

   An increasingly interconnected world is creating new opportunities for addressing societal challenges. In this context, corporations and government agencies worldwide need to ensure that their networks are safe from cyber-attacks, ethically managed and inclusive. Ensuring cybersecurity and promoting the responsible and legal use of AI will be critical to creating safety in cyberspace while building platforms for new business models. We will need to work to foster innovation to inform smart, ethical, legal and policy decision-making, while addressing problems such as the spread of misinformation and polarization in social media.

2. **Transforming Healthcare: Computational Precision Health**

   It's a new day in medicine and health science. Computing and data have transformed how we address questions that were once insurmountably complex. We have the potential, through data analytics and AI, to revolutionize cancer treatments, deploy brain imaging to improve the effectiveness of therapies, reduce the impact of infectious disease pandemics, develop algorithms to fight health disparities, and much more.

3. **Accelerating Scientific Discovery: The Promise of Quantum Computing**

   Quantum science and engineering have the potential to revolutionize computational capabilities by making certain types of classically intractable problems solvable. Quantum computers will soon be able to tackle problems much faster than any conventional computer. These capabilities could especially impact how science, technology, and industry approach challenges involving a daunting number of variables and potential outcomes — like simulating chemical interactions, predict the impact of diseases

based on simulations, optimizing logistics, or sorting through massive datasets. The emerging technological revolution of quantum computing, AI, and machine learning will exponentially reshape our world across countless sectors, such as healthcare, finance, and cyber security.

Bold Collaborative Funding Program

This UC cross-campus initiative builds upon years of collaborative UC-wide experience in developing and managing broad-based institutional programs that foster and nurture impactful research through seed-funding programs that augment traditional funding mechanisms by supporting projects that are bold or too transformative to immediately attract traditional support. Accordingly, this funding program will select from team-based multi-institutional computational research proposals that are powerful and innovative, with potential for leveraged follow-on support and for transformative impact in addressing critical conceptual and technological applications. **Each institution has committed to contributing $200,000 for a total of $1M** for at least the initial year to support their own campus researchers on funded teams. Successful proposals will address computational applications in the three impact themes. We hope to see a broad variety of proposals that address cybersecurity, computational precision health, and quantum computing, and incorporate the over-arching program areas of campus expertise in data sciences, technology & innovation, cybersecurity, society & ethics, law, health and life sciences, and quantum computing.

Leadership Team

This UC Partnership is led by an Executive Committee, which consists of:

Institutional Leadership: UC Berkeley – Kathy Yelick; UC Davis – Prasand Mohapatra; UC-Irvine – Pramod Khargonekar; UC Santa Barbara - Pierre Wiltzius; UC San Francisco – Dan Lowenstein

Administrative Leads: UC Berkeley – Kaja Sehrt ; UC Davis – Ana Lucia Cordova ; UC-Irvine – Sky Zhang; UC Santa Barbara - Alex Radde ; UC San Francisco – Gretchen Kiser

Important Dates

March 30, 2022	Funding Opportunity Announcement
April 13, 2022	Letters of Intent Due. (applications accepted only via UC Davis InfoReady Platform
May 18, 2022	Full Proposals Due. (applications accepted only UC Davis InfoReady Platform
June 15, 2022	Funding announcements. Awardees will be notified via email.

Eligibility Criteria

- Applicant PI/multi-PI must have **Principal Investigator (PI) status** at one of the participating UC campuses.

- An individual may participate as PI/multi-PI on one to three proposals. Co-investigators, consultants and other personnel may serve on more than one proposal.
- Each proposal must have at least one PI from at least two of the partner institutions. Projects with researchers from three or more institutions will be prioritized for funding.
- Partners outside of the UC Partners may be included but they would not be eligible to receive UC Partnership seed funding. They would need to "pay-to-play." The addition of an external partner does not change the requirement that seed funding projects must include at least two of the 5-campus UC partners.

Award Details

- Project awards are limited to $200,000 per project, not to exceed $80,000 per institution per proposal, and will be made available for an 18-month project period.
- Awards may be used to cover reasonable research expenses (e.g., research supplies, computer data storage or compute expenses, publication costs, research-related travel expenses, etc.)
- Coverage of PI salaries is allowed. Salary coverage for other technical personnel is allowed pursuant to appropriate budget justification. Funds may be used to cover student stipends and tuition, as long as these are properly justified in the narrative and budget.
- Overhead or indirect costs will not be applied.

Application Process

Letters of Intent and full proposals must be submitted online at https://ucdavis.infoready4.com/#applicationGrid/1867607 on the UC Davis Administered Programs InfoReady Review page by the listed deadlines. Letters and applications submitted through any other method will not be reviewed.

Post-award expectations

- A progress report must be submitted mid-way and at the end of the project period. Presentation of projects and results at an annual program symposium is also expected.
- All publications, presentations and products from this award should acknowledge the **'2022 UC Partnership in Computational Transformation Award Program'** as the source of funds (or as subsequently detailed in a notice of grant award).

Contact information

General questions: Gretchen L. Kiser, PhD (UCSF) - gretchen.kiser@ucsf.edu

InfoReady proposal submission questions: Ana Lucia Cordova-Kreylos, PhD (UC Davis) - anacordova@ucdavis.edu

Application Guidelines

Applications will only be accepted through the InfoReady competition website, if you have any issues with the system please contact the support team at support@inforeadycorp.com which typically respond within the same day and if you have any questions about the application process contact the institutional contacts listed above.

Letters of Intent

Letters of intent are required (due April 13th). Teams will not be allowed to submit a full proposal without having submitted a letter of intent. The information provided in the letter of intent will be used to start the identification of potential reviewers and line up needed resources.

Complete required fields in the competition website (this information can be edited upon submission of a full proposal):

- Proposal title
- Contact PI basic information (name, email, rank/title, institution, department)
- Multi-PI(s) information (name, email, rank/title, institution, department)
- Abstract. Provide an up to 500-word abstract. The abstract should briefly describe the problem statement and the proposed experimental aims and approach.
- Keywords. Provide up to five keywords describing the proposed project.

Full Proposal (*application page on InfoReady will open on April 18)*

1. Complete required fields in competition website:
   - Basic information for Contact PI (name, email, rank/title, institution, department)
   - Multi-PI information (name, email, rank/title, institution, department)
   - Application details including an up to 500-word abstract

2. Upload Proposal Narrative (combined in a single pdf document) and required documents through the competition website. Adobe Acrobat-generated PDF files only to avoid compatibility issues with InfoReady system (e.g., LaTeX)

   - **Project Narrative**: Maximum of four (4) pages of scientific content, including the bulleted items below. Scientific content and all figures must remain within the four-page limit; references are not included in the four-page limit. Please use standard one-inch margins and a minimum 11-point font size Arial or similar font. Provide a concise description of the research to be undertaken, including addressing the following sections:
     - **Rationale/Background**;
     - **Proposed Research and Approach** with stated **Specific Aims**;
     - **Innovation** – The projects funded through this program are meant to fuel innovation in computational solutions to problems in cybersecurity, computational precision health, and quantum computing. The proposed research should reflect creative, high impact team science projects; describe novel approaches and interdisciplinary synergies.

- **Impact** – Describe the potential for your research to advance thinking, concepts or technologies that benefit the research theme, as well describe the 'broader impacts' of the potential of your work to benefit society and contribute to the achievement of desired society outcomes. Describe the ways in which your proposal will incorporate student and fellow training.
- **Preliminary Data** is not required.
- **Team Synergies** – Since all PIs on a proposal are expected to contribute substantively, the proposal should also contain a brief description of each PI's proposed contribution to the aims, including an explanation of how collectively they are able to address an issue that they cannot do separately.
- **Data Management Plan** (½ page max within the 4-page Project Narrative) – A detailed plan for how the data will be or was collected, processed, analyzed, and disseminated should be included. A data management plan should include the following:
    - Types of experimental data to be collected along with relevant contextual data
    - Experimental design, data collection/generation methodology
    - Data recording and formatting methods
        - e.g., MIxS packages, other ontological packages, or specific formats
    - Data sharing plan (specifically, with respect to sharing experimental data, sample data, code and/or documentation for reproducible analyses)
    - Justification for how the study design enables future cross-study analyses or hypotheses generation

- **Lay Summary** (not part of the 4-page Project Narrative limit) - Prepare an up to 300-word lay summary that describes the problem statement and the proposed experimental aims and approach, notes the impact and significance, and highlights the value of the team. This Summary should target an educated audience that is non-expert in computational methods or other scientific disciplines.
- **Budget Form:** Use the provided budget form on the competition landing page in the right-side column.
- **Budget Justification**: An accompanying budget narrative describing and justifying costs (one page max, not included in the four-page Project Narrative limit)
- **CV:** CVs for each researcher named in the proposal (not included in the four-page limit)
    - 5-page maximum for all CV's
    - Standard NIH or NSF biosketches accepted (up to 5 pages)

Proposal Review and Award Selection

Proposals will be selected for funding following subject expert review and assessment by technical reviewers from the five UC campuses.

Assessment is based on five criteria:

1. **Intellectual Merit**
    - The contribution to advance knowledge and understanding within the field of study or across fields; How well qualified is the team? How well conceived and well organized is the proposed work?
2. **Innovation & Interdisciplinarity**

- The extent to which the project will contribute to novel thinking and/or new technology in its field; does the proposal include contributors from multiple disciplines? Do they present a novel approach to the research question?

3. **Impact**
   - The contribution to realizing important goals, and its potential to provide useful outcomes to society locally and globally, such as solutions impacting individuals, building capacity, influencing policy, etc.
4. **Sustainability**
   - The likelihood that the project will lead to sustainable results: establishes new research directions in one or more of the team labs or initiates new interdisciplinary collaboration, or generates significant external funding. Extramural funding that may be targeted should be specifically identified.
5. **Data Management Plan**
   - The extent to which the proposed work adheres to an effective data use policy.

Highly scored proposals will be considered and strategically selected for funding by the UC Partnership Institutional Leadership team, consisting of institutional leadership at all five partnering institutions.