

Aggie Climate action for Equity
Proof-of-Concept Grants (ACE Grants)
Request for Proposals (FY 23/24)

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PROGRAM OVERVIEW

Context: UC Climate Action Innovation & Entrepreneurship Awards & ACE

The Aggie Climate action for Equity (ACE): Innovation and Entrepreneurship for Climate Change Solutions program is one of the programs managed by Venture Catalyst, under the Office of Research. Administered by the UC Office of the President (UCOP), Venture Catalyst was awarded a \$1M grant put forth by the California State Legislature, AB 179. This state funded grant program is known as the *University of California's Climate Action Innovation & Entrepreneurship Awards*. The program's goal is to amplify the number and quality of translational and proof-of-concept pilot projects emerging from the University of California. Funds are dedicated for the purpose of nurturing technologies, policy interventions, and behavioral innovations that can play a tangible role in climate change mitigation, resilience, and adaptation, with a specific attention to end-user engagement and a focus on positively impacting California's communities most vulnerable to the effects of climate change.

ACE is an initiative to spur UC Davis-based translational research, pilots, and commercialization aligned with *California's Climate Adaptation Strategy Priorities* (See *Resource Links*, pg.11 for more). These priorities are a framework which guides the program, ensuring that program components are centered on climate justice, and to independently augment the state's existing and planned climate adaptation efforts in an integrated approach towards climate resilience.

ACE is a multi-faceted initiative that simultaneously builds internal innovation capacity, workforce development for students, and community engagement on the front-end of the innovation pipeline, while also moving promising climate-impact technologies out of the technology research stage and into the translational product development stage. ACE does with proof-of-concept grant support for translational projects with the highest potential to have large-scale and/or near- to medium-term impact.

ACE Proof-of-Concept Grants (ACE Grants)

The majority of ACE funding to UC Davis is dedicated to moving existing impactful translational research to the next phase of tangible development through the ACE Proof-of-Concept Grants. For the 1-year grant period (March 2024 - February 2025), 6 projects will be chosen by reviewers to receive up to \$90,000 each in awards. Projects are not limited strictly to technological inventions. Clean-tech innovations, policy, and/or behavioral interventions are included in the scope of project eligibility.

ACE Grants are offered because early-stage innovations from university research are often perceived as too uncertain or too risky to attract funding to translate into commercial-scale or widely disseminated products, services, or interventions. This lack of accessible funding creates a gap between basic research and early-stage commercialization efforts. ACE Grants help bridge this gap by providing funding and resources to translate early UC Davis research with high impact potential by demonstrating proof-of-concept and establishing market viability (or a path to adoption), thus de-risking the innovation. The ultimate objective of the program is to develop innovations that attract entrepreneurs, non-profit organizations, industry, government agencies, and/or investors willing to commercialize UC Davis innovations, resulting in societal and economic impacts aligned with the UC Davis Land Grant mission.

Projects most likely to be selected for an ACE Grant will meet evaluation criteria (See *Review Process* below) which show the highest likelihood to:

- 1) yield actionable results and/or models with a proof-of-concept within the 1-year grant horizon, poised so that innovations can be replicated and deployed at scale within 2-5 years;
- 2) demonstrate multi-stakeholder engagement in the design and implementation of projects, with a special focus on positively impacting Californians who reside in vulnerable communities; and
- 3) articulate a direct connection to California Climate Action Strategy Priorities related to mitigation, adaptation, and/or resilience.

Near-term outcomes within the 1-year grant period are anticipated to include (but not be limited to) two or more of the below components:

- creating prototypes while building upon or generating new patentable intellectual property
- obtaining multilateral partnerships to move towards adoption of policy recommendations generated with community input;
- generating usability data from community groups to inform scale-up of projects, preferably with publishable results;
- creation of software, modules, handbooks, or other tangible manifestations of the innovation
- a measurable increase in engagement between researchers, students, and members of vulnerable communities;
- and/or in-field deployment of pilots or other types of third-party testing (whether with prototypes of a technology, implementing a behavioral or policy framework, or other “outside the lab” equivalent for your innovation).

Medium-to-longer-term (2-5 year) outcomes will ideally yield two or more of the following:

- formation of partnerships for innovation scale-up and dissemination;
- Startup or nonprofit entity with subsequent external funding and job creation;
- mitigation and/or sequestration of GHG emissions;
- tangible benefits felt by Californians because of the dissemination of the innovation;
- and/or licensing applicable technologies to startups or industry for scale-up.

ELIGIBILITY REQUIREMENTS

Eligible Projects and Applicants

Anyone with Principal Investigator (PI) status at UC Davis is eligible to apply as a project PI. Postdoctoral scholars, graduate students, and university staff researchers are eligible to submit applications as Co-PI with an eligible PI. **Any student considering applying alongside a PI should contact ace-grants@ucdavis.edu to learn more about navigating the process within UC policy.**

Type of innovation & target stage of development

Projects are not limited strictly to technological inventions, policy, or behavioral innovations. Other types of climate-focused innovations and interventions are included in the scope of project eligibility as long as they meet the evaluation criteria and are aligned with the outcomes for the ACE initiative.

Projects eligible for ACE Grant funding will feature an early-stage innovation that meets one or more of the following criteria:

- Has advanced beyond the basic research stage but requires proof-of-concept data to show the project can successfully mitigate, adapt to, or provide resiliency towards climate change issues affecting California while demonstrating feasibility for widespread adoption.
- Has demonstrated successful results in the research environment and is poised for commercialization, dissemination, or replication, pending a specific, targeted demonstration, test result, or prototype.
- Has reached a critical stage of innovation development, whereby specific questions pertaining to commercialization feasibility, dissemination, or replication can be answered within the resource constraints of the 1-year program.
- Has identified milestones that would overcome a specific hurdle to commercialization and vulnerable community applicability, enabling a technology or non-technical innovation to become more attractive for: licensing to an existing company; enabling the formation of a startup company within 2-5 years of project completion; or adoption by government agencies or nonprofit organizations.

Climate Change Impact Areas

Proposed projects must explicitly identify one or more of the three impact areas that the proposed project is addressing, and how a successfully-deployed innovation will impact Californians. Using the Resource Links below, proposals should describe the type of California-centric climate policy or framework with which they are aligning. This reflects the requirements of the *University of California's Climate Action Innovation & Entrepreneurship Awards* which fund the ACE Grants.

Climate Change Impact Areas include:

- Mitigation- an action or set of actions to reduce or capture emissions of greenhouse gasses.
- Adaptation- an action or set of actions that reduce physical climate risk.
- Resilience- describes a state of readiness to face climate risks.

If you are unsure about where your proposal might fit, please reach out to us at ace-grants@ucdavis.edu and we would be happy to provide guidance.

In line with the collaborative and integrative nature of California's Climate Adaptation Strategy Priorities framework and the ACE program, **proposals that reflect intentional multi-partner engagement are not mandatory, but highly encouraged**. Proposals should outline steps to incorporate community-based organizations, indigenous tribal groups, and/or climate-focused NGOs (non-governmental organizations) in the project development process to ensure that groups most affected by climate change are impacted in your project outcomes. This helps to ensure that lived experiences and voices of those within vulnerable communities are considered throughout the grant period.

Role of other funding sources

There are no match requirements for ACE Grants. Leveraging other funding sources is allowable— as long as there is no overlap in funded projects under a project plan—and must be disclosed in the proposal. In such cases, it will be important to identify an intellectual property (IP) management plan through coordination with InnovationAccess (the technology transfer office).

Intellectual Property Conditions

If a project proposed in the grant application possibly includes an innovation with potentially patentable intellectual property (IP), it must be disclosed to InnovationAccess (the technology transfer office). All potentially patentable IP developed under an ACE Grant project will be assigned to the University of California.

If the technology has not been previously disclosed to InnovationAccess, then the applicant must participate in a Pre-Application Meeting with InnovationAccess before the ACE Grant proposal deadline. Applicants do NOT need to submit a full Record of Invention prior to applying. The purpose of the Pre-Application Meeting will be to provide input on alignment with ACE Grant technology innovation objectives so that you might propose a more competitive grant and to assess whether the proposed project may cover potentially patentable IP. Please email ace-grants@ucdavis.edu with the following information: **Name, E-mail address, Phone #, Department/College, Availability for at least 2-3 time slots.**

Technologies that have already been optioned or licensed to a company are not eligible to receive ACE Grant funding. However, technologies under a FAST or Letter Agreement with a company are eligible. Applicants are encouraged to contact InnovationAccess regarding IP-related eligibility.

Other Funding Conditions

Prior to award, all PIs will be subject to an internal compliance check. Prospective awardees flagged for disciplinary actions or similar may be disqualified; if a PI is found to be out of HR compliance for trainings, they will be notified that they must come into compliance before disbursement of funds.

One or more of the PI, Co-PI and key personnel will have participated in, or will commit to participate in a structured entrepreneurial training program approved by Venture Catalyst. Examples of potential training programs include the Entrepreneurship Academies administered by the UC Davis Mike and Renee Child Institute for Innovation & Entrepreneurship (IIE) or the NSF Innovation Corps programs hosted by Venture Catalyst in collaboration with program partners.

A key to achieving translational impact is mentoring provided by external experts to ACE Grant awardees and finalists. All applicants will receive summary reviewer feedback; those selected for the award should expect to have periodic check-ins with mentors. Feedback from industry experts through the review and mentoring processes has been invaluable to the program and to UC Davis researchers as they design and implement research plans to increase the commercial potential of UC Davis technology.

GRANT TERMS AND AMOUNTS

Up to \$550,000 is available for ACE Grants in Fiscal Year 2023-2024. Approved projects may be eligible for \$90,000 maximum each. All submitted proposals must be limited in scope of work and budget, such that work can be completed within a 12-month period (March 2024 - February 2025). Funds may be released to an awardee in one or more tranches, based on the work plan of the awardee and at the discretion of the ACE Grant Review Committee and the Vice Chancellor of Research. A total of six ACE Grants will be awarded.

ALLOWABLE COSTS

Funds may only be used for eligible expenses. The awardee's department will be responsible for covering any expenses deemed ineligible.

ACE Grant funding may be used only to cover direct costs. Examples of direct costs that may be included in the grant request are labor, supplies, reagents, and non-capital equipment.

Up to 40% of ACE Grant funding requested may be used for salary support for postdoctoral fellows, technical research staff, and graduate students¹ employed at the university in such capacity at the time of application submission. Clear justification must be provided to show why the requested salary support is essential for the proposed project. If the proposal includes funding for graduate students, the PI responsible for supervising the education, training, or thesis-directed research or related activities of participating graduate student(s) must certify that participation of the student(s) in the program will not adversely impact their education, training, or thesis-directed activities. Additionally, PI will agree to release such student(s) to participate in an Entrepreneurship Academy managed by IIE or an equivalent structured entrepreneurial training program approved by Venture Catalyst. Faculty salary support is ineligible.

As an exception to the 40% cap on salaries, if the proposed project requires software development, up to \$25,000 may be eligible to be applied to salaries for project software development personnel/contracting.

ACE Grant funds can be used to hire contractors for certain activities, such as prototype fabrication or third-party technical validation testing. Contractors may be subject to rules and reporting from the UC of

¹ Salary support requests for graduate students may include tuition and fees remission, in accordance with the UC Davis Academic Personnel Manual, Appendix II-B.

California's RGPO Grant Administration Manual, Section 2.2.4, and Section 3.1.2. PIs should also identify potential service providers in the proposal. Awardees must secure an effort commitment within two months of notification of award, so the team can complete all work described in the proposal within the award period.

Travel costs are generally excluded from eligibility, except in rare cases. Up to \$1,500 of travel funds may be set aside for what is expected to be one or two in-state convenings of all California Climate Action awardees, slated to be organized by UCOP in 2024-2025. Other travel will be considered on a case-by-case basis, taking into account how proposed travel will directly pertain to de-risking or replicating the innovation under development.

ACE Grant support may not be used for capital equipment (\$5,000 or more)², market research reports, business consulting expenses, maintenance agreements, costs associated with attending conferences.

The program is generally not intended to fund research directly involving human subject testing (such as clinical trials). Usability testing and similar studies are allowable, though must be cleared through any applicable IRB policies.

Only research activities specifically described in the grant proposal will be funded. Research that has already been performed or expenses that have already been incurred in any manner at the time of grant application or grant award are not eligible for funding.

The above list is not exhaustive, and applicants are encouraged to discuss any questions on budget items with us at ace-grants@ucdavis.edu prior to application submission.

TIMELINE & HOW TO APPLY

RFP Issue Date:	December 8, 2023
RFP Closing Date:	January 21, 2024, 11:59 pm PST
Committee Application Review Begins:	January 29, 2024
Review Committee Session for Selection of Awardees:	February 19, 2024
Award Announcement:	March 13, 2024

More information about the program and the application process can be found at the following URL:
<https://itc.ucdavis.edu/ace-program/>

Proposals can be submitted through Office of Research's InfoReady grant application platform at
<https://ucdavis.infoready4.com/#competitionDetail/1924874>

² Defined per UC Davis Policy and Procedure Manual, Ch. 350, Section 50:
<https://ucdavispolicy.ellucid.com/documents/view/489/509/>

(Kerberos login required).

Potential applicants should send an email indicating their interest to ace-grants@ucdavis.edu, so that the ACE program manager may contact you to provide updates, special announcements, or other communications.

REVIEW PROCESS

Overview

Venture Catalyst staff will perform an initial review of all proposals for any errors in completion or other non-substantive issues. Venture Catalyst will then provide proposals electronically to the ACE Grant Review Committee for assessment and scoring. The ACE Grant Review Committee will score proposals on review criteria identified below. Following the online review, the Review Committee will further evaluate the finalist proposals at an in-person or virtual meeting.

Based on the quality of proposals received and the total budget request, the ACE Grant Review Committee will recommend six applicants for approval by the UC Davis Vice Chancellor for Research.

Prior to a final funding decision, the Office of Research may undertake a conflict-of-interest review of the proposed project.

Venture Catalyst anticipates providing summarized anonymized reviewer comments to all applicants based on the review criteria.

ACE Grant Review Committee

The ACE Grant Review Committee will include industry representatives with corporate, investor, climate justice, policy, technical, and entrepreneurial expertise. Venture Catalyst may add supplemental members to the Review Committee, including Office of Research staff and campus subject matter experts qualified to evaluate a combination of climate tech and scientific translational merits of the proposals received. All reviewers will be obligated to protect the confidentiality of proposals and will disqualify themselves in cases of conflict of interest.

Review Criteria

Reviewers will score applications on a scale of “1” (lowest) to “9” (highest). Review criteria fall into five broad categories: 1) Program Fit, a.) vulnerable communities’ impact, b.) impact area, 2) Technical Merit, 3) Commercial Potential, 4) Budget and Timelines, and 5) Milestones.

Applicants should be prepared to answer the following questions in their proposal:

- Program Fit
 - Does the proposal fit with program objectives and eligibility?
The innovation or project is at a stage where proof-of-concept funding will substantially enable next steps towards technology development, dissemination, replication, and/or commercialization; and the project reflects a gap in early technology development with potential for commercial impact.

- a. To what extent does the project demonstrate a clear impact(s) on California's most vulnerable communities, and Californians in general? If successful, what would the outcomes look like?
 - b. To what extent does the proposal clearly describe what impact area(s) the project is addressing? If successful, what metrics/estimates could be used to demonstrate potential for impact?
- Technical Merit
 - Does the project team have scientific or technological expertise required by the proposal?
 - How clearly does the proposal describe the proposed research and the anticipated results?
 - Does the proposal clearly describe and provide sufficient prior proof-of-concept or enabling research results to support the work proposed?
 - Commercial/ Dissemination Potential
 - Does the proposal describe (preferably quantify) the scale of the problem being solved, in social and economic terms?
 - Does the proposal effectively describe the product, service, or intervention that would be enabled by the proposed work and end-user served?
 - How well does the proposal identify a customer/stakeholder need and product solution that is compelling to those who may adopt it? To what extent are alternatives to the innovation described (including the status quo or competitors), and why is this solution better?
 - Does the proposal describe how commercialization is economically viable— such that if it is a business/product that there is a path to profitability or if it is a different innovation, is there a way for the dissemination and adoption to at least be self-sustaining or cost-efficient?
 - If applicable, how effectively does the proposal present the current intellectual property, intellectual property strategy, and/or competitive advantage created by the innovation?
 - Budget and Timelines
 - Is there a reasonable likelihood of achieving project objectives, given the available financial and technical resources identified or anticipated?
 - How appropriate is the timeline presented for achieving the proposal's objectives?
 - Milestones
 - Does the proposal indicate clear recognition of the steps, challenges, and value-generating milestones that would enable commercial feasibility for the technology?

AWARD PROCESS AND POST-AWARD ADMINISTRATION

Prior to award disbursement, Venture Catalyst will verify that the awardee is still eligible, based on criteria established in the RFP. (For example, IP must not be licensed or optioned at the time of the award; proposed research has not received alternative funding; etc.)

The amount of requested funding support cannot exceed a total of \$90,000. The Office of Research reserves the right to reduce the final amount of funding approved, including salary requests, when making a final determination of grant award. The ACE Grant Review Committee will conduct a final review of 1) proposed milestones, and 2) fit with the requested budget, prior to a final funding decision. Funds must only be used for eligible expenses (see *Allowable Costs* section above); the awardee's department will be responsible for covering any expenses deemed ineligible.

All awardees will have access to the Review Committee and Climate Advisory Group (CAG) to provide guidance on technology commercialization, impact area alignment, climate justice goals, and ongoing mentorship. The Venture Catalyst team will engage awardee mentors based on factors such as professional background, technical expertise aligned with the project, and comments provided in the review process.

Awardees will be expected to engage with CAG members and ACE Grant mentors on a regular basis and submit reports indicating progress towards or achievement of project milestones. Progress report content and timelines will be discussed and agreed upon prior to release of funds, and at a minimum will include brief quarterly progress and final reports.

Funds will be disbursed only after the first meeting (facilitated by Venture Catalyst staff) and subsequent sign-off by program staff on the proposed project milestones. Funds awarded are to be expended within 12 months of the release of funding from the Office of Research to the PI's department. Due to constraints of the funding source, no-cost extensions are not allowed.

As a condition of the award, awardees will be expected to:

- Meet with various Climate Advisory Group (CAG) members each quarter. Hours may vary.
- Submit a brief quarterly progress report that includes milestone tracking and an estimated accounting of the use of granted funds in the furtherance of the project and achievement of proposed project milestones.
- Submit a final project report that summarizes technical, and inflection point achievements and discusses commercial/scalable next steps.
- PI/co-PI and key personnel (including any graduate students involved in the project) participate in a structured entrepreneurial training program approved by Venture Catalyst
- Speak on an ACE event panel or webinar in order to educate UC Davis and the larger community about the relevance of your research, innovation, or technology.

RESOURCE LINKS

1. **California Climate Adaptation Strategy Priorities**
<https://www.climate resilience.ca.gov/priorities/> The California Natural Resources Agency.
2. **Vulnerable Communities definition by the Governor’s Office of Planning and Research**
https://opr.ca.gov/docs/20180723Vulnerable_Communities.pdf
3. **The Pathways to 30x30 Strategy** <https://www.californianature.ca.gov/pages/30x30>
 California Natural Resources Agency. Describes how California will successfully implement the goal of conserving 30% of California’s lands and coastal waters by 2030. Appendix D developed by the California Biodiversity Network, highlights the research priorities that can translate into actionable science needed to ensure the success of 30x30.
4. **California Air Resources Board 2022 Scoping Plan**
<https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/2022-scoping-plan-documents> California Air Resources Board. Assesses progress toward the statutory 2030 greenhouse gas target, while laying out a path to achieving carbon neutrality no later than 2045.
5. **California’s Fifth Climate Change Assessment**
<https://opr.ca.gov/climate/icarp/climate-assessment/> Governor’s Office of Planning and Research. Contributes to the scientific foundation for understanding climate-related vulnerability throughout California.
6. **California Climate Dashboard** <https://calepa.ca.gov/climate-dashboard/>
 California Environmental Protection Agency. Describes programs, policies, and investments that California is making to combat climate change.
7. **California Climate Solutions**
<https://calepa.ca.gov/climate-solutions/> California Environmental Protection Agency. Provides an overview of California’s Climate Solutions.

CONTACT INFORMATION

For any questions related to the ACE Grant process, please email ace-grants@ucdavis.edu.

GLOSSARY OF TERMS

*Please note that, as with most work in social justice and scaling-up of innovation, collectively used terms can mean different things to different people and those definitions are constantly evolving as they are put into practice. **The list below constitutes an imperfect working set of concepts** that have informed this RFP and attempts to convey the intent of its source of funding from the State of California.*

1. **Vulnerable Communities *per the Governor’s Office of Planning and Research (OPR) ICARP:**
 Climate vulnerability describes the degree to which natural, built, and human systems are at risk of exposure to climate change impacts. Vulnerable communities experience heightened risk and increased sensitivity to climate change and have less capacity and fewer resources to cope with, adapt to, or recover from climate impacts. These disproportionate effects are caused by physical (built and environmental), social, political, and/ or economic factor(s), which are exacerbated by climate impacts. These factors include, but are not limited to, race, class, sexual orientation and

identification, national origin, and income inequality. (See *Resource Links* on pg.11 for more information.)

2. **Climate Justice:** recognizing the disproportionate negative impacts of climate change on CA Vulnerable Communities, which are the people and places least responsible for the problem. (closely related to, but slightly different from Environmental Justice)
3. **Climate Equity:** the principle that every person should benefit from a clean environment and have access to the resources and opportunities they need to protect themselves from the impacts of climate change.
4. **Innovation:** new ways of doing things; a new method, idea, or product. Not only technologies, but also may include new policies or behavioral interventions.
5. **Community Partner or Contributor:** like the term “stakeholder” or “collaborator,” for the purpose of this RFP, it refers to individuals and entities who can have impacts on and/or can be impacted by the rollout of the innovation.
6. **Entrepreneurship:** the intent to disseminate climate technologies and clean innovations in a replicable, scalable, economically feasible way. In the context of this grant, it includes both the typical connotation of “entrepreneurship” as desire to create a profitable entity, and/or the equally valuable “entrepreneurial mindset” to collaborate with existing companies or non-profits for scalable dissemination of innovation.
7. **Commercialization:** taking proactive and tangible steps to move an innovation out of the lab- or research-stage and towards use by the public, industry, government, and/or society at-large. For the purposes of this RFP, “commercialization” does not strictly mean the creation of a product or service that generates revenue or creation of a business, though it does usually mean that the uptake of the innovation is seen as economically viable by whoever is adopting it.