UC Davis Environmental Health Sciences Center (EHSC) annual request for pilot project applications

The UC Davis EHSC, funded by the National Institute of Environmental Health Sciences (NIEHS), invites applications for pilot projects to be conducted during the 2019-2020 grant year

The Pilot Projects Program supports short, 1-year projects to provide preliminary data for new extramural grant submissions in the area of environmental health sciences (EHS) research. The review process emphasizes:

- Relevance to the focus of the Center and NIEHS
- Responsiveness to themes identified in the request for proposals
- Community engagement
- Potential for translation of the science into public health

Successful applications demonstrate a strong likelihood of leading to significant NIEHS funding in the short term. Applications that are in areas of interest to this year's funding partners (Western Center for Agricultural Health and Safety, California National Primate Research Center, Comprehensive Cancer Center and the West Coast Metabolomics Center) are especially desirable.

***Eligibility*:** All UC Davis investigators who are eligible to apply as a principal investigator (PI) for National Institutes of Health (NIH) grants. Prior applicants are encouraged to submit revised applications.

Please note the application procedure has changed

1) Concept letters are required, but pre-approval of a concept letter is no longer required for submission of a full application. **For applicants requesting assistance with proposal preparation, concept letters are due by November 8th. For applicants who are not requesting assistance with proposal preparation, concept letters are due by November 15th.** Please note that applicants who obtain Core assistance in the preparation of their proposals increase their likelihood of submitting a more responsive and competitive application. Concept letters are now submitted via an online form.

2) Full applications should be submitted via **InfoReady. The deadline for full applications is December 3rd.** Each PI may submit only one proposal. Proposals undergo full scientific review and applicants with the most competitive proposals make a short, oral presentation of their research ideas to the Center leadership.

***Priority Areas**:*

- Interdisciplinary team research
- Translational science, e.g. taking results from in vitro to in vivo, or from animal to human epidemiology, or discovering mechanisms in toxicology for epidemiology findings, or testing an association through an intervention
- Development of resources, methods or technology to benefit exposure assessment or disaster response
- Human health concerns, particularly respiratory health, neurodegeneration, neurodevelopment, mental health, immune regulation, reproductive/endocrine or metabolic function and cancer
- Projects likely to inform policy or advocacy efforts for scientifically supported actions
- Substantial relevance to California's Central Valley population, such as pesticides, air pollution, climate change and its consequences for human chemical exposures and health, water quality and quantity, and toxicants in household and personal care products

2019-2020 Pilot Project awards are for a maximum of $30,000 direct costs for a 1-year project. Revised submissions are encouraged.

Resources to help applicants prepare competitive applications

EHSC provides applicants with the opportunity to consult with senior center investigators in the preparation of pilot project proposals. Consultation is provided through a design clinic or individually with EHSC Core directors or members.

Many applicants find this service valuable however participation is not required for submission to the Pilot Projects Program. To learn more about the Core expertise and services and how engaging with one or more Cores might strengthen your proposal, you can indicate which Cores you are interested in working with in the online concept letter form. Descriptions of EHSC Cores are below:

- ***Career Development Core*:** Early stage investigators (ESI within 10 years of terminal degree) or investigators new to EHS can request assignment of an EHS mentor to assist in preparation of a competitive proposal.
- ***Community Engagement Core (CEC)*:** Community engagement plans are required and scored for every application. The Community Stakeholders Advisory Committee (CSTAC) has a list of priority environmental health concerns and would like to engage UC Davis scientists who have relevant research interests (see below for the list of priorities and stakeholder contacts). Please visit the Community

Engagement Core page on the EHSC website for more information. For questions about the CEC's services, please contact CEC Program Manager Aubrey Thompson (abthompson@ucdavis.edu).

- ***Exposure Core***: If you are planning to measure any exposures in the environment, are planning on exposing any animals, or need more information regarding selection of chemicals, the exposure core may be able to help you.
- ***Integrated Health Sciences and Facilities Core (IHSFC):*** If you need help with statistics or are new to animal or human subject research, or you want to access novel animal models or archived biospecimens, our IHSFC core may be able to help you.

Additional Information: If selected for funding, grantees must present their project at a Center meeting; acknowledge the Center grant in work resulting from Center support, and provide written progress reports and updates on manuscripts and grant applications.

If human or animal subjects are included, no award will be issued until approval from the Institutional Review Board (IRB) or Institutional Animal Care and Use Committee (IACUC) has been received and the NIEHS has authorized allocation of funds. Please review the application instructions carefully to ensure your human or animal research is described according to NIH requirements.

Applications will be internally triaged for responsiveness and compliance with the above requirements. Final funding recommendations are made by the Center's Funding Council.

After reading the applicant instructions and stakeholder research priorities on the following pages, **SUBMIT APPLICATION PACKETS ONLINE.**

Questions? Contact Melissa Rose mbrose@ucdavis.edu or Laura Van Winkle lsvanwinkle@ucdavis.edu (530-754-7547)

EHSC Community Stakeholder Advisory Committee 2019-2020 community research priorities

This list of priorities was generated by members of the EHSC's Community Stakeholder Advisory Committee as questions they are interested in seeing researchers investigate. For assistance in discussing potential project

ideas or in making contacts with the community partners, please contact the Community Engagement Core: Aubrey Thompson abthompson@ucdavis.edu.

Groundwater

- How do incidences of cancer and other particularly relevant diseases of concern (i.e. SIDS) in communities with chronic drinking water violations compare to communities without a history of drinking water violations? If increased risks are found, they may be suggestive of a potential link with specific elevations of contaminants.
- How can localized groundwater recharge and/or localized overdraft be managed in geographic proximity to public drinking water supplies in groundwater-dependent communities in order to safeguard public health? Are there increased risks of groundwater contamination due to groundwater recharge and overdraft? Are statewide and water district policies for groundwater recharge in line with available science on the health effects of water access?
- What are the possible health effects of co-exposures to nitrate and other soil contaminants like uranium? Determine if the presence of nitrate in soil and water exacerbates health impacts of other contaminants, where the two co-occur, by making them more bioavailable for example. Measure levels and then examine possible health impacts.

Community partners

Community Water Center

Pesticide exposure

- Rural community residents are concerned about the extent of exposure to hazardous agricultural pesticides used near schools. Topics in this area would include: adequacy of the recent pesticide regulations to protect children's health and the links between pesticide application and exposures. There is an interest in projects that use community-based bio-monitoring to measure pesticide exposure in children. Also, toxicity studies of targeted pesticides (e.g., Chlorpyrifos).

Community partners

Jane Sellen, Californians for Pesticide Reform

Marilyn Silva, CA Department of Pesticide Regulation

Air quality

- What are the cumulative health impacts of air emissions from dairies on nearby communities? What are contaminants of concern coming from dairy/ manure digesters? How does the fate of nitrate differ between digestate, raw manure, and composted manure?
- What is the best way to monitor area-wide air quality issues related to emissions (as opposed to localized measurements of point source pollution)?
- The effects of drought on human health (including the transport of hazardous compounds in dust.
- Expand and improve the coverage of pollen monitoring in California and relevance to human health.
- Investigate dose-response relationships regarding the impacts of wildfires and/or wildfire smoke on respiratory health, cardiovascular health, mental health, and/or birth outcomes.

Community partners

Kevin Hamilton: Central California Asthma Collaborative

Phoebe Seaton: Leadership Counsel for Justice and Accountability

Oil/gas

- What are the spatial patterns of oil & gas production storage tanks and pipes in the San Joaquin Valley (how do these correlate to disadvantaged communities -DACs)?
- How adequate is the oversight and mapping of oil and gas infrastructure by state regulators? How are pipeline leaks being identified and mitigated?
- What are the health protection impacts of set- back/ buffer zones around oil and gas facilities? Are current policies sufficiently health protective?
- What are the long-term health effects from the storage of oil and gas production by-products close to schools and residences?

Community partners

Nayamin Martinez: Central California Environmental Justice Network

Climate change

- Health impacts of home energy efficiency upgrades in California's low income homes from Low Income Weatherization Program funded by cap and trade. This includes indoor air quality, safety, mold, lead, protection from climate change impacts such as extreme heat, cost savings, etc.

Community partners

Phoebe Seaton: Leadership Counsel for Justice and Accountability

Instructions for your pilot project application

Submit a concept letter using the online form then submit your application packet using InfoReady.

Important deadlines

November 8: Concept letter deadline for applicants who would like to receive assistance with proposal preparation

November 15: Concept letter deadline for applicants who do not require assistance

December 3: Full application deadline in InfoReady

Submitting your application packet

1. Use InfoReady to submit your application packet
2. Select the EHSC Pilot Projects Program competition in the InfoReady system
3. Enter the information requested in the available fields in InfoReady
4. Upload the following documents:
    - Specific Aims
    - Research Plan
    - Biosketches
    - Budget

Formatting requirements

- Use 11 point Arial font
- Submit biosketches for the principal investigator and any co-investigators using the current National Institutes of Health (NIH) biosketch form and instructions. Submit all biosketches as a single PDF.
- Put the Specific Aims and Research Plan on separate pages. The Research Plan is three pages; an additional half page is allowed for resubmissions. References, Human Subjects and Vertebrate Animals sections are not counted in the three-page limit. Combine and upload the Specific Aims and Research Plan as a single PDF.
- Prepare budgets using the budget template provided only

Human subjects

For any project involving human subjects, please refer to the NIH instructions attached as an appendix to this Request for Application and follow the format outlined in Section 3 (Protection and Monitoring Plans). If you have any questions, please contact EHSC Program Manager Melissa Rose (mbrose@ucdavis.edu).

Vertebrate animals

Applicants must address the following criteria when using live vertebrate animals:

Description of Procedures (Vertebrate Animals Section). Provide a concise description of the proposed procedures to be used that involve live vertebrate animals. Identify the species, strains, ages, sex and total number of animals by species to be used. If dogs or cats are proposed, provide the source of the animals.

Justifications (Vertebrate Animals Section). Provide justification that the species are appropriate for the proposed research. Explain why the research goals cannot be accomplished using an alternative model (e.g., computational, human, invertebrate, in vitro).

Minimization of Pain and Distress (Vertebrate Animals Section). Describe the interventions to minimize discomfort, distress, pain and injury. These include analgesia, anesthesia, sedation, palliative care and humane endpoints.

Method of Euthanasia. Provide a justification for methods of euthanasia that are not consistent with the American Veterinary Medical Association Guidelines for the Euthanasia of Animals.