California Firefighter Cancer Prevention and Research Program

Welcome and Introductions
Program Purpose
Background
Program Overview
Competition Timeline and Key Dates
Letter of Intent
Community-Based Participatory Research
Technical Assistance
Working with Smart Simple – Letter of Intent
Questions & Answers
California Firefighter Cancer Prevention and Research Program is a competitive grant program established by the State of California (AB 700) in 2023. Grants to eligible educational institutions (University of California) to conduct research on the California fire service using a community-based participatory research model in collaboration with California firefighters.

Support research to prevent and reduce the incidence of cancer among CA firefighters

• Examining the hallmarks of cancer and key characteristics of carcinogens
• Characterizing biomarkers of cancer susceptibility or risk in firefighters
• Understanding carcinogenic exposures among firefighters
• Informing intervention strategies to lower risk of developing cancer in firefighters

Source: Assembly Bill No.700, Grayson, California Firefighter Cancer Prevention and Research Program
Background

California Firefighter Cancer Prevention and Research Program

Daily Exposure to Carcinogens

• Vehicle Fires
• Diesel Exhaust
• Asbestos & PM 2.5
• Metals
• PFAS
• Flame Retardants

Firefighting = IARC Group 1 Carcinogen

IARC Monographs Vol. 132

Occupational exposure as a firefighter is carcinogenic to humans (Group 1) on the basis of sufficient evidence for cancer in humans

The IARC Monographs classification indicates the level of certainty that an agent can cause cancer (hazard identification)

Higher level of certainty

Lower level of certainty

Cancer types with sufficient evidence for cancer in humans:

- Mesothelioma
- Bladder cancer

Cancer types with limited evidence for cancer in humans:

- Colon cancer
- Prostate cancer
- Testicular cancer
- Melanoma of the skin
- Non-Hodgkin lymphoma
IARC: Strong Evidence – Key Characteristics of Carcinogens

- Genotoxicity
- Oxidative stress
- Chromatin inflammation
- Receptor-mediated cell effects

Before: Lower cancer risk

** Higher cancer risk **
Background

California Firefighter Cancer Prevention and Research Program

Hallmarks of Cancer

- Self-sufficiency/insensitivity growth signals
- Evading programmed cell death
- Deregulated metabolism
- Evading immune system
- Genome instability

Key Characteristics

- Electrophilic (metabolically activated to...)
- Alters DNA repair
- Immunosuppressive
- Alters cell proliferation

Data Driven Interventions to Reduce Firefighters’ Cancer Risk

- Elimination: Physically remove the hazard
- Substitution: Replace the hazard
- Engineering Controls: Isolate people from the hazard
- Administrative Controls: Change the way people work
- PPE: Protect the worker with Personal Protective Equipment

Image by NIOSH

https://www.cdc.gov/niosh/topics/kleemurry/default.html
Purpose

- Competitive grant program funding community-based participatory research (CBPR) projects to reduce the incidence of cancer among California firefighters.
- Research conducted by community-academic partnerships among CA-based fire service organizations and UC campuses
- Research to prevent and reduce cancer among CA firefighters by examining the hallmarks of cancer and key characteristics of carcinogens related to firefighters’ occupational exposures, characterizing biomarkers of cancer susceptibility or risk in firefighters, understanding carcinogenic exposures among firefighters, and informing intervention strategies to lower risks of developing cancer in firefighters

Program Administration

- Administered by UCOP RGPO in consultation with FIRESCOPE
- Proposals evaluated through a two-tiered process: peer review (outside experts) and programmatic review (FIRESCOPE)
- Substantial programmatic involvement in awards, including convening a FIRESCOPE advisory committee to provide firefighter expertise and leadership perspectives

Source: California Firefighter Cancer Prevention and Research Program, Request for Proposals, 1/18/24
Grant Types and Funding Levels

**CA Firefighter Cancer Prevention Pilot Award**

Supports the initial phase of the project, including strengthening collaborations, development of tools and methods, testing feasibility, and collecting pilot data.

*Funding:* $300,000 in direct costs for a two-year project (plus indirect costs)

**CA Firefighter Cancer Prevention Full Award**

Projects with a fully developed research plan with supporting preliminary data, carried out by a well-integrated team of scientific and fire service members with demonstrated record of success conducting research.

*Funding:* $750,000 in direct costs for a three-year project (plus indirect costs)

Source: California Firefighter Cancer Prevention and Research Program, Request for Proposals, 1/18/24, p. 2
Grant Program Overview and Priorities

All proposals must address the priority area of: Engaging in community-based participatory research (CBPR) model of research.

Plus one or more of the following priority areas:

- Examining at least one of the hallmarks of cancer or the key characteristics of carcinogens as it relates to firefighters’ occupational exposures and cancer risk.
- Identifying and/or examining biomarkers of known and suspected human carcinogen exposures in firefighters.
- Developing and/or testing methods to quantify occupational exposures and biological effects to carcinogens among CA firefighters.
- Examining the effect of exposures among CA firefighters to known and suspected human carcinogens.
- Developing and/or testing interventions to reduce occupational exposures to known and suspected human carcinogens among CA firefighters.
- Developing and/or testing systems-level interventions to reduce occupational exposures among CA firefighters. This includes, but is not limited to, policy and/or practice interventions at the department, organization, agency, and/or other type of group level.
- Developing and/or testing other methods for preventing or reducing the incidence of cancer in CA firefighters.
Grant Program Overview and Priorities

Projects that are not in alignment with this RFP include:

• Those focused on a disease area other than cancer.
• Projects that consult with fire service professionals, but do not partner with them.
• Projects where teams will limit output to a meta-analysis of published literature.
• Projects that do not study or partner with firefighters with occupational exposures to products of combustion.
• Projects that do not include partnerships with actively serving or retired California firefighters.
• Projects that measure chemical exposures in firefighters but do not include a plan to report back individualized research results to firefighters. Publication in scientific journals does not constitute report back of individualized research results to firefighters.

Source: California Firefighter Cancer Prevention and Research Program, Request for Proposals, 1/18/24, p. 8
applicant eligibility

This community-based participatory research grant opportunity requires participation of a team consisting of individuals representing at least one California-based fire service organization (formal or informal) and at least one experienced academically-trained UC-based researcher.

• The fire service organization must identify one member who will act as the fire service Co-Principal Investigator (Co-PI) for the purposes of the project. The fire service organization may be any California-based group composed of actively serving and/or retired California firefighters, including state or local fire agencies, firefighter labor unions, or fire departments, or other formal or informal groups of firefighters meeting these criteria. To be eligible, the fire service organization needs to include individuals who experience occupational hazards to products of combustion as firefighters.

• The academic Co-Principal Investigator must be a University of California faculty or staff with principal investigator eligibility.

• All Co-Principal investigators must reside in California.
Applicant Eligibility

• All proposals must be submitted by an Applicant Co-Principal Investigator ("Applicant Co-PI"), who can be either the academic or fire service Co-Principal Investigator. Regardless of who is the Applicant Co-PI, both the Fire Service Co-PI and the Academic Co-PI are equal partners.

• An individual may serve as Co-Principal Investigator on one pilot proposal and one full proposal in response to this RFP. However, the individual may serve as a Co-Investigator (Co-I) on other proposals.

• Additional research and fire service organizations may also participate in collaborating roles. While the applicant research and fire service organizations must be based in the state of California, the project team may include partner institutions from outside of California, if well justified.
<table>
<thead>
<tr>
<th>Competition Timeline and Key Dates</th>
<th>California Firefighter Cancer Prevention and Research Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RFP Release</strong></td>
<td>Thursday, January 18, 2024</td>
</tr>
<tr>
<td><strong>Informational Webinar</strong></td>
<td>Monday, January 29, 2024</td>
</tr>
<tr>
<td><strong>Required Letter of Intent (LOI) Due Date</strong></td>
<td>Thursday, February 29, 2024 (by 12:00 noon Pacific Time)</td>
</tr>
<tr>
<td><strong>Invitation to Submit Application</strong></td>
<td>Thursday, March 14, 2024</td>
</tr>
<tr>
<td><strong>Invited Application Due Date</strong></td>
<td>Thursday, June 13, 2024 (by 12:00 noon Pacific Time)</td>
</tr>
<tr>
<td><strong>Award Start Date</strong></td>
<td>Sunday, December 1, 2024</td>
</tr>
</tbody>
</table>
Letter of Intent Content

• Type of award (Pilot or Full grant)
• Title of proposed research project
• Contact information for at least one Co-Principal Investigator (Co-PI)
  • University of California Co-Principal Investigator
  • Fire service organization Co-Principal Investigator
• Named applicant organizations and institutions
• Short description of proposed project (500 words maximum; 3500 characters)
• Anticipated budget request for the total project (based on award type)
• Optional: Suggested academic and fire service peer reviewers from outside California

Source: California Firefighter Cancer Prevention and Research Program, Request for Proposals, 1/18/24, p. 10
Community-Based Participatory Research

- Useful in projects ranging from biomarker characterization to population-wide interventions
- Authentic and comprehensive partnership
- Integration of perspectives from fire service personnel and academics
- Co-PIs and team engage in:
  - Research question and specific aims generation,
  - Development of research methodology,
  - Project implementation,
  - Data gathering and analysis,
  - Report out of results to fire service community, academic audiences, and broader interested communities

Source: California Firefighter Cancer Prevention and Research Program, Request for Proposals, 1/18/24, p. 6
Principles of CBPR

- Balancing Research & Action
- Community Relevance
- Equitable & Participatory
- Ethical
- Combining Science & Community
- Capacity Building
The CBPR Team

Fire Service Co-PI and Staff and Firefighters (broader community)

Academic Co-PI and Staff
Benefits of CBPR

• **It benefits the community**
  Answers important questions, develops research & evaluation skills, funds community, builds capacity, provides data for advocacy & change

• **It improves the production of knowledge**
  Methodology and analysis strengthened with community input, results (data) more likely to be disseminated and used

• **It benefits the academic field**
  Enables ethical access to communities, leverages community knowledge to create more relevant research, research is used for change, provides data for publications, funds researcher

Source: Israel, et al. (2001)
## Traditional vs Community-Based Participatory Research

<table>
<thead>
<tr>
<th>Traditional</th>
<th>CBPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outside expert</td>
<td>Team of stakeholders, multiple experts</td>
</tr>
<tr>
<td>Outside expert defines what needs to be studied and how</td>
<td>Stakeholders collectively decide focus and methods of research</td>
</tr>
<tr>
<td>Report of results may or may not be used to make changes</td>
<td>Stakeholders shaping research increases impact</td>
</tr>
<tr>
<td>Capacity for research leaves with the expert</td>
<td>Capacity for research is built internally</td>
</tr>
<tr>
<td>Unclear whether capacity for partnering grows</td>
<td>Capacity for partnering grows within both organizations and/or institutions</td>
</tr>
</tbody>
</table>
Co-PI Experience and Skills

Fire Service Co-PI
- Experience with the topic being researched
- Trust of the community involved in the research
- Skills for representing the community of interest and being a conduit with larger community
- Sees self as a collaborator, enjoys teaching

Academic Co-PI
- Trained and experienced in both the topic being researched and the research skills necessary to complete the project
- Connected to other scientific expertise
- Sees self as a collaborator, enjoys teaching
• LOIs due February 29th, 2024 may be submitted with only one Co-PI named.

• Program will provide technical assistance with finding appropriate partner Co-PI, and for other aspects of application.

• Email the California Firefighter Cancer Prevention and Research Program at firefighter-cancer@ucop.edu for help.

• Invited applications will require that both Co-PIs be named and have developed a memorandum of understanding for their partnership.
How to submit a proposal in SmartSimple

presented by
Research Grants Program Office (RGPO)
Contracts and Grants Unit (C&G)

• C&G works in collaboration with the California Firefighter Cancer Prevention and Research Program, serving as interface on administrative and procedural aspects of your LOI and Application submission and review process.

• Contact information:
  • Email: RGPOgrants@ucop.edu
Key Dates & Tips

- All materials must be submitted through SmartSimple
- Detailed instructions are provided on the program website and in SmartSimple
- **Start early** to become familiar with SmartSimple
- **Submit early**: No late applications will be accepted

<table>
<thead>
<tr>
<th>Award Type</th>
<th>LOI Deadline</th>
<th>Application Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Award</td>
<td>February 29, 2024, 12pm Noon PT</td>
<td>June 13, 2024, 12pm Noon PT</td>
</tr>
<tr>
<td>Full Award</td>
<td>February 29, 2024, 12pm Noon PT</td>
<td>June 13, 2024, 12pm Noon PT</td>
</tr>
</tbody>
</table>
Accessing SmartSimple
Login to SmartSimple: https://rgpogrants.ucop.edu/

First-time users register here
Returning users login here
Creating an Account on SmartSimple
https://rgpogrants.ucop.edu/

Enter your institution and complete your applicant contact information.

If you receive a message that an account with your email address already exists, return to the main login page and click “Forgot Password.”
Preparing and Submitting an LOI or Application

1. Click on the “Available Funding Opportunities” tab in the upper right corner.
2. Find the row that corresponds to the award you’re interested in and click “Apply.”
LOI Submission Steps

1. Click "Submit LOI" to submit the LOI.
2. Download instructions.
3. Click the section headings to access and complete each section of the LOI.
4. Click "Submit LOI" to submit the LOI.
• Partnership and content questions: Email firefighter-cancer@ucop.edu
• SmartSimple questions: Email RGPOgrants@ucop.edu