Research Project on Post-Fire Property Sampling, Testing, and Decontamination

Pacific Palisades Community Council Presentation

May 11, 2026

- Funder: National Science Foundation (NSF) Grants #2536796/#2536798/#2536797

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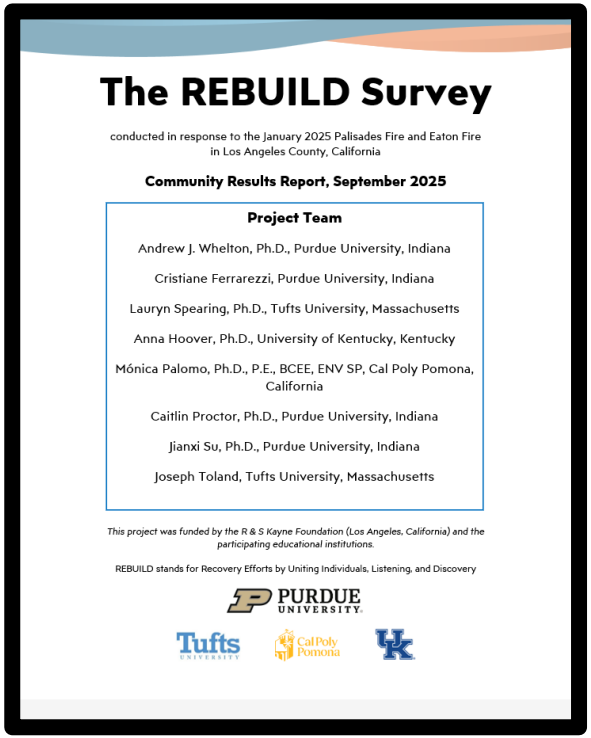
Tufts UNIVERSITY PURDUE UNIVERSITY UCLA

REBUILD Survey *(Led by Whelton & Spearing)*

- Recovery Efforts by Uniting Individuals, Listening, and Discovery (REBUILD)
- Identify and describe household experiences with evacuation, housing, environmental testing, chemical exposures, insurance, and rebuilding
- April to June 2025
- 1,229 verified responses

Report is freely available
www.PlumbingSafety.org



The REBUILD Survey

conducted in response to the January 2025 Palisades Fire and Eaton Fire in Los Angeles County, California

Community Results Report, September 2025

Project Team

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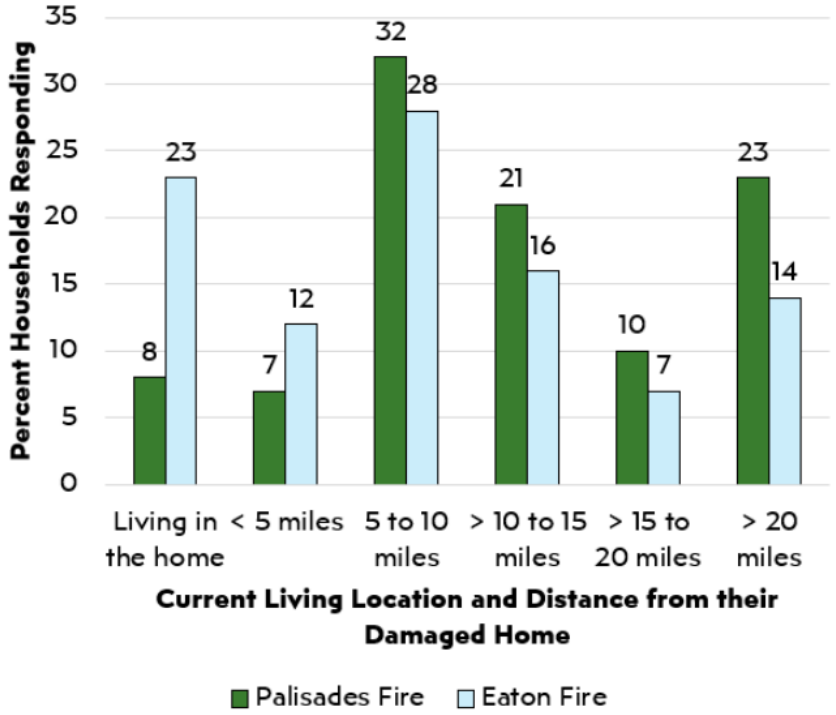
This project was funded by the R & S Kayne Foundation (Los Angeles, California) and the participating educational institutions.

REBUILD stands for Recovery Efforts by Uniting Individuals, Listening, and Discovery

REBUILD Survey *(Led by Whelton & Spearing)*

At the time of the survey:

- Most households had not returned to living in their fire-impacted home
- More than 2 of every 3 households believed they had experienced anxiety, stress, or depression associated with damage and environmental threats caused by the fires



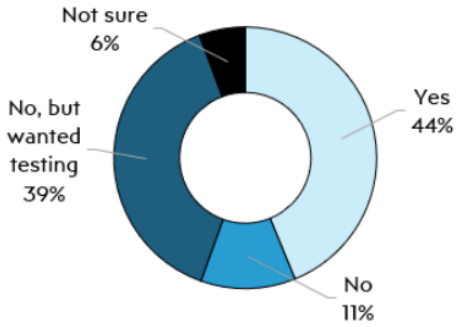
REBUILD Survey *(Led by Whelton & Spearing)*

At the time of the survey:

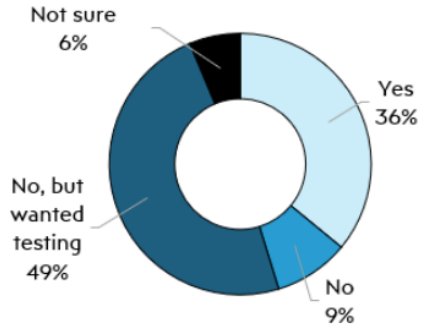
- A substantial number of households wanted, but had not yet obtained, home environmental testing

- Less than 1 in 4 households expect their insurance company will provide them enough money to rebuild their home like it was before the fire

Palisades Fire

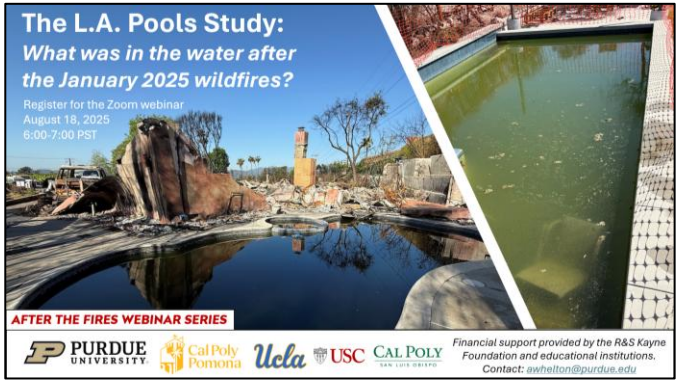


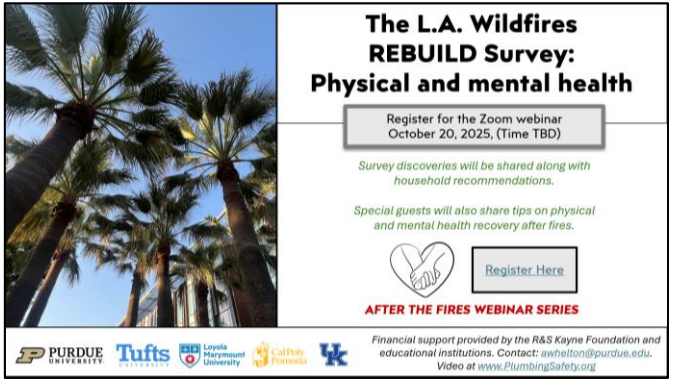
Eaton Fire



2025 After the Fires Webinar Series *(Led by Whelton)*

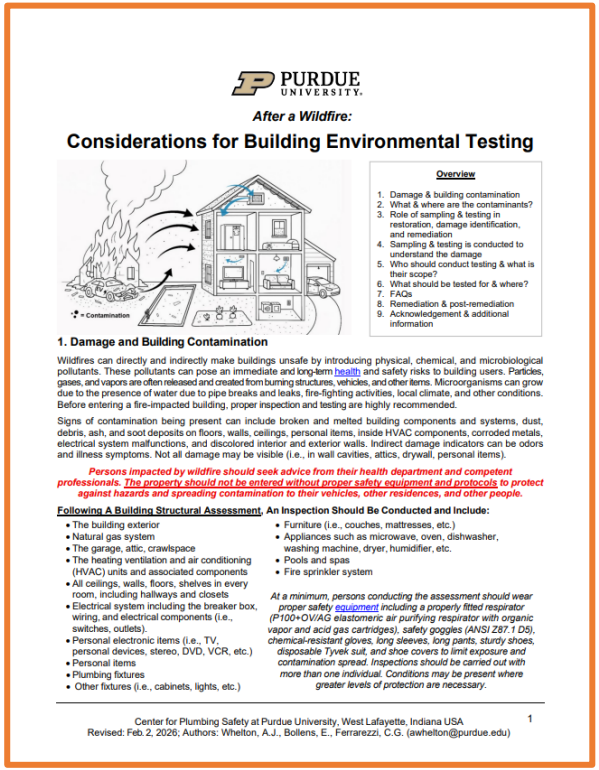
- Pools
- Debris removal and soil
- Household needs
- Physical and mental health





Health-based Environmental Assessment and Re-Occupancy Testing (HEART) Study *(Led by Whelton)*

- Identify evidence-based practices for safely returning to and restoring homes and personal property after a fire. Gaps where additional work is needed will also be identified.
  - 500+ home testing reports submitted
- 100+ individual meetings with households
- Guidance based on best available science regarding post-fire contamination testing here
- Results shared with Calif. Dept. of Insurance



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After a Wildfire:

Considerations for Building Environmental Testing

Overview

1. Damage & building contamination
2. What & where are the contaminants?
3. Role of sampling & testing in restoration, damage identification, and remediation
4. Sampling & testing is conducted to understand the damage
5. Who should conduct testing & what is their scope?
6. What should be tested for & where?
7. FAQs
8. Remediation & post-remediation
9. Acknowledgement & additional information

1. Damage and Building Contamination

Wildfires can directly and indirectly make buildings unsafe by introducing physical, chemical, and microbiological pollutants. These pollutants can pose an immediate and long-term health and safety risks to building users. Particles, gases, and vapors are often released and created from burning structures, vehicles, and other items. Microorganisms can grow due to the presence of water due to pipe breaks and leaks, fire-fighting activities, local climate, and other conditions. Before entering a fire-impacted building, proper inspection and testing are highly recommended.

Signs of contamination being present can include broken and melted building components and systems, dust, debris, ash, and soot deposits on floors, walls, ceilings, personal items, inside HVAC components, corroded metals, electrical system malfunctions, and discolored interior and exterior walls. Indirect damage indicators can be odors and illness symptoms. Not all damage may be visible (i.e., in wall cavities, attics, drywall, personal items).

Persons impacted by wildfire should seek advice from their health department and competent professionals. The property should not be entered without proper safety equipment and protocols to protect against hazards and spreading contamination to their vehicles, other residences, and other people.

Following A Building Structural Assessment, An Inspection Should Be Conducted and Include:

- The building exterior
- Natural gas system
- The garage, attic, crawlspace
- The heating ventilation and air conditioning (HVAC) units and associated components
- All ceilings, walls, floors, shelves in every room, including hallways and closets
- Electrical system including the breaker box, wiring, and electrical components (i.e., switches, outlets).
- Personal electronic items (i.e., TV, personal devices, stereo, DVD, VCR, etc.)
- Personal items
- Plumbing fixtures
- Other fixtures (i.e., cabinets, lights, etc.)
- Furniture (i.e., couches, mattresses, etc.)
- Appliances such as microwave, oven, dishwasher, washing machine, dryer, humidifier, etc.
- Pools and spas
- Fire sprinkler system

At a minimum, persons conducting the assessment should wear proper safety equipment including a properly fitted respirator (P100+OV/AG elastomeric air purifying respirator with organic vapor and acid gas cartridges), safety goggles (ANSI Z87.1 D5), chemical-resistant gloves, long sleeves, long pants, sturdy shoes, disposable Tyvek suit, and shoe covers to limit exposure and contamination spread. Inspections should be carried out with more than one individual. Conditions may be present where greater levels of protection are necessary.

Center for Plumbing Safety at Purdue University, West Lafayette, Indiana USA 1
Revised: Feb. 2, 2026; Authors: Whelton, A.J., Bollens, E., Ferrarezzi, C.G. (awhelton@purdue.edu)

Key Gaps that Spurred this Work

- There is a **gap in knowledge** about the extent of post-fire property and infrastructure **contamination** and how such information can be used by stakeholders to **inform testing and remediation decisions**.
  - Existing industrial hygiene guidance on conducting property testing is **lacking**.
  - Public health guidance documents are not **specific**.
  - Residents and stakeholders face **inconsistent information** and are left with questions about contamination on their property and what testing results mean for their risk mitigation decisions.
- There is a need for research that helps **evidence-based decision-making.**

Project Research Objectives

What should we test for and where?

RO1: Elucidate fundamental processes that control wildfire contaminant fate and transport at the property-environment interface

What information needs exist?

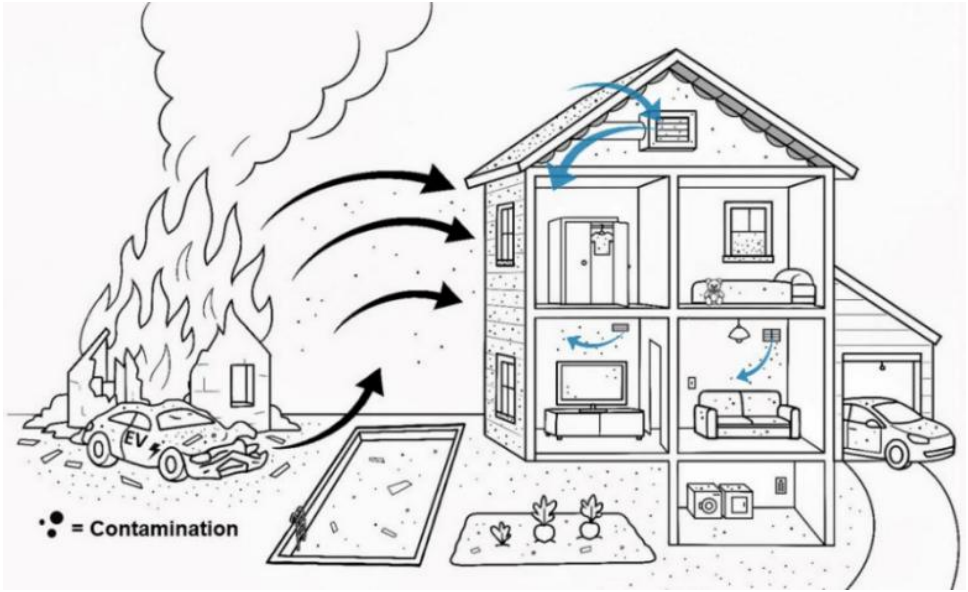
RO2: Identify needs and gaps in gathering and communicating contamination information post-fire

What information misalignments exist and how can we converge knowledge to support decision-making?

RO3: Leverage AI to assess information misalignment from different sources and use this information to develop an interactive online platform to support risk communication

Experiments to inform testing and remediation decisions

- Lab experiments
  - Different materials
  - Contaminant fate in plumbing
  - Contaminant mobility in burned soils
- Full-scale structure burn

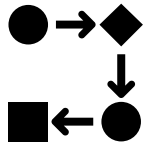


Conduct interviews to outline issues

- Community member interviews to understand experiences and needs regarding sampling, testing, and remediation

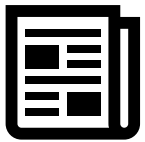
- Stakeholder interviews to understand where information gaps prevent effective sampling, testing, and remediation

- Create systems map to show how information flows and identify “pressure points” and areas where changes could be made



Understand information misalignments

- Misalignments in home environmental sampling procedures, results, and recommendations
  - Home environmental testing reports
  - News media
  - Government reports

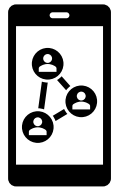

Develop resources tailored for community use and policy

- **AI-supported platform** that translates home environmental testing reports into understandable summaries with contextual comparisons and FAQs

- Wildfire contamination testing and sampling **info sheets** that describe best practices based on literature and project discoveries

- **Other resources** as guided by interviews and advisory board members

  One-pagers, policy memos, tool-kits, or social media posts



How can you get involved?

- This project recently started, so we are seeking feedback to further align this work with community needs through conversations while in town May 13-14.
- Later this summer, we will start conducting interviews with community members with standing homes and people involved in disaster response.
- In the future, we will also request community input to co-design the AI platform.

If you are interested in providing feedback or sharing your experiences through an interview, email lauryn.spearing@tufts.edu.

Slides from today will be posted at [www.PlumbingSafety.org.](http://www.PlumbingSafety.org)