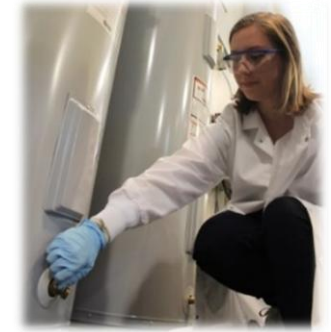
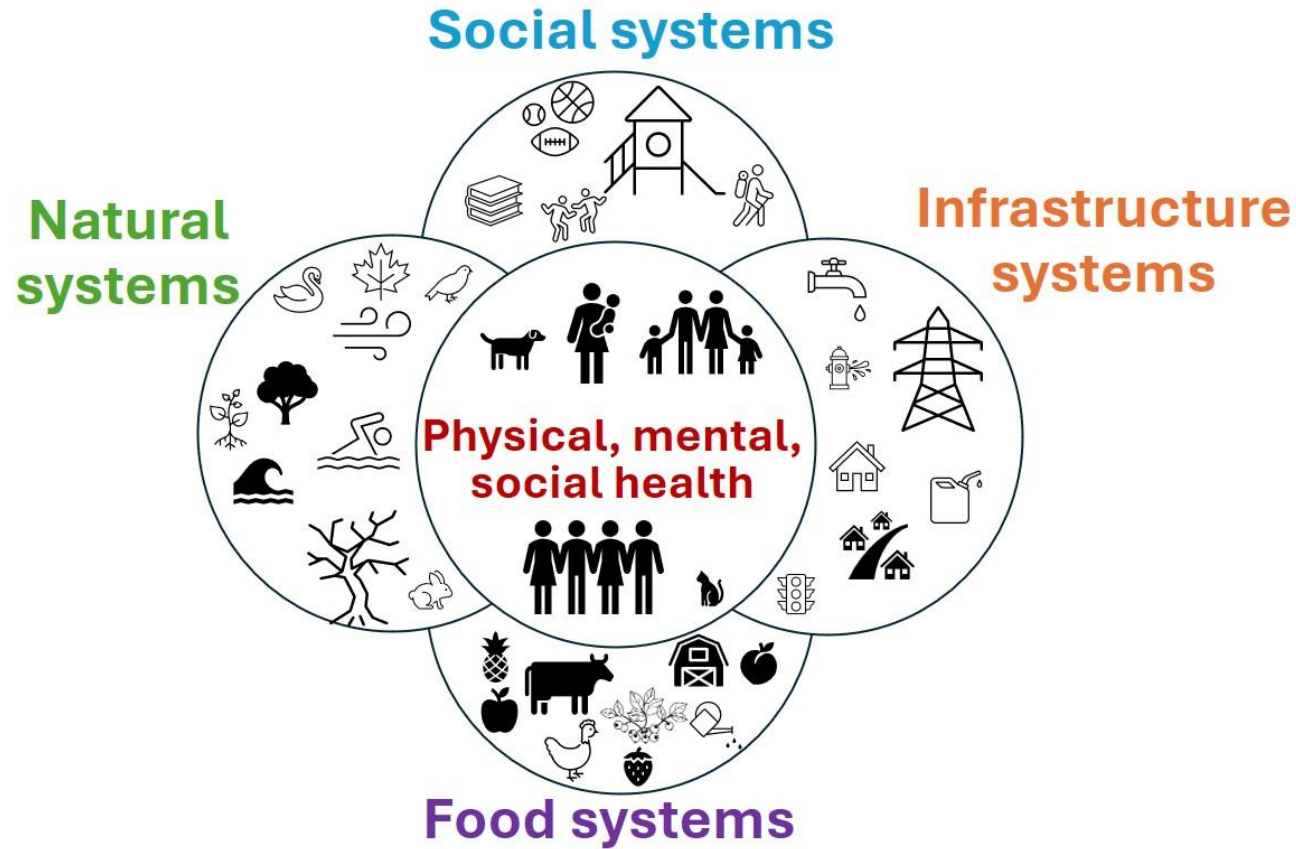


Perspective from the Field: Technology Opportunities in Fire Recovery



Andrew Whelton, Ph.D.

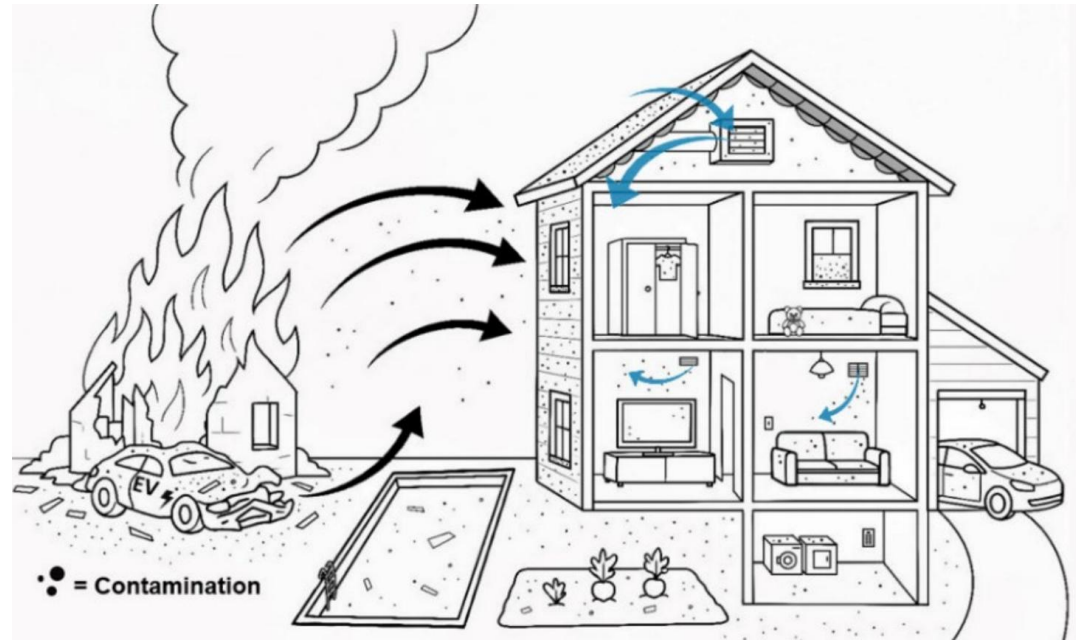
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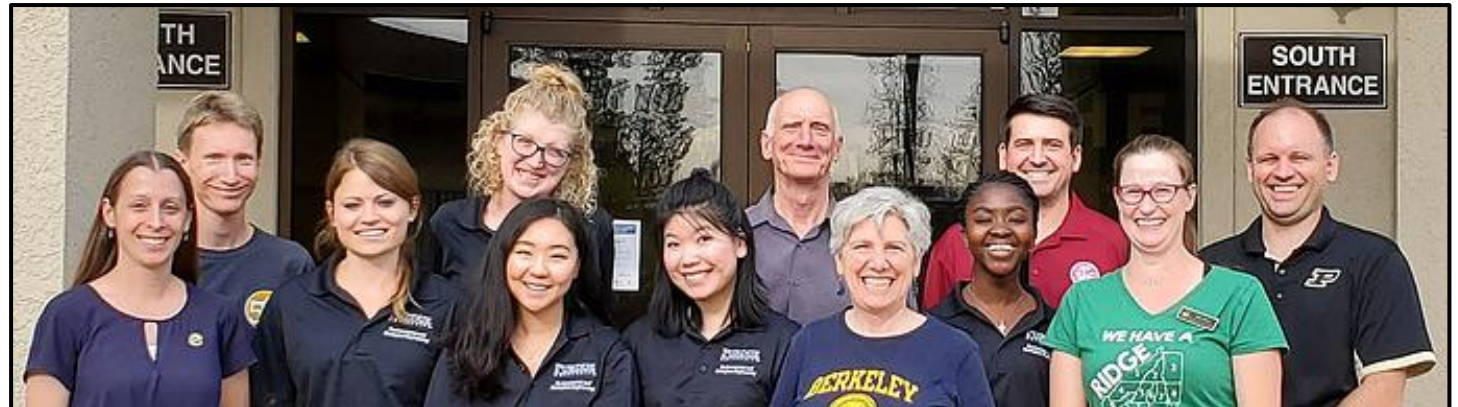


Innovation opportunities abound to better understand & reduce health impacts

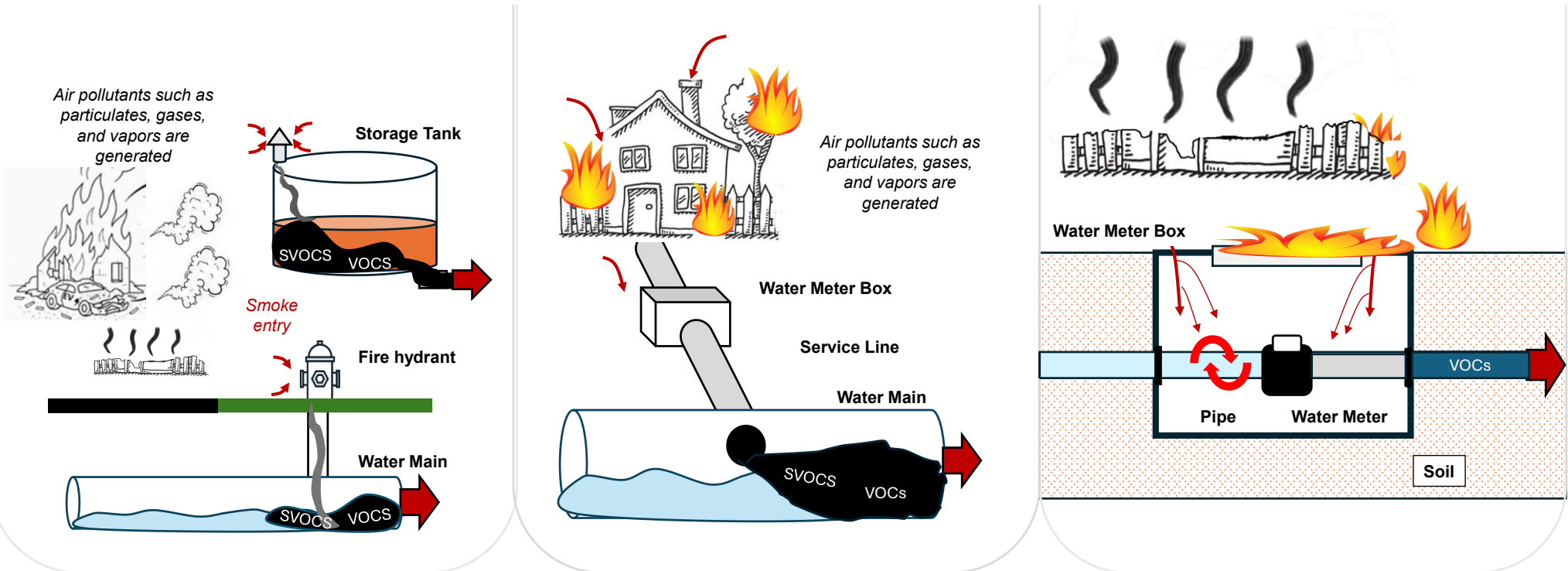
Drinking water systems
Wastewater systems
Stormwater systems
Public spaces – Parks, beaches
Private spaces – Property
Debris and soil
Outdoor air
Swimming pools
Gardens
Indoor building environments
Agriculture



Whelton, A.J., Bollens, E., Ferrarezzi, C. After a Wildfire: Considerations for Building Environmental Testing. September 2025. West Lafayette, Indiana USA.
<https://www.doi.org/10.5703/1288284317911>



Water Systems: Power loss, pressure loss, contamination rendering infrastructure & water unsafe



Zavodny & Whelton. 2026. Water utilities damaged by wildfire: Recovery lessons, mitigation, and research needs. *Utilities Policy*. <https://www.doi.org/10.1016/j.jup.2026.102245>



AFTER THE FIRES: RECOVERY

HIDDEN HAZARDS
IN DEBRIS, SOIL,
STRUCTURES &
WATER



When buildings, vehicles, and other materials burn, the chemicals they leave behind can be harmful. These chemicals can spread into the air, soil, water, and nearby buildings, sometimes reaching properties that the fire never actually touched. The resources below can be used to help make decisions about how to check for these hazards and safely restore communities after a fire.

Guidance resources can be found at Purdue University
here: <https://docs.lib.purdue.edu/red/>



Visiting Destroyed Structures Safely

Burned properties hide structural, chemical, and utility hazards. Assess the risks before entry.



Debris Removal & Soil Restoration

Clearing ash and debris the right way protects health and prepares the soil underneath for safe rebuilding.



Indoor Environment Testing & Restoration

Chemicals can linger long after a fire passes.



Public Drinking Water Systems

Fire can damage community water lines, tanks, hydrants, and more making them unsafe to use.



Private Wells

Fires can compromise wellheads, springs, and groundwater.



Building Plumbing Systems

Fire can damage plumbing, contaminate water, and make plumbing unsafe.



Agricultural Water Systems

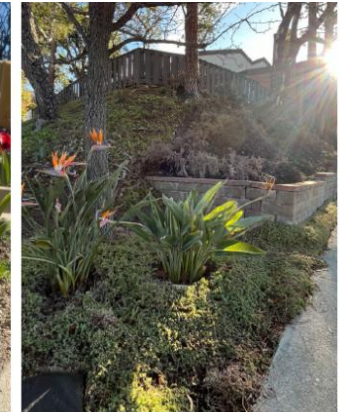
Irrigation and livestock water need inspection and testing to keep crops, animals, and soil safe.

Questions? Contact Andrew Whelton, PhD: awhelton@purdue.edu | Date issued: 9/1/2026

Technology innovation opportunities abound

Our After the Fires Webinar Series

Practical, science-backed steps for recovery



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