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University of Colorado Boulder researchers awarded $1.1 million for projects to reduce exposure to wildland fire smoke at school and at home

University among nine grant recipients receiving $7 million to address health impacts associated with smoke

DENVER (August 23, 2021) – Today, the U.S. Environmental Protection Agency (EPA) announced it is providing researchers at the University of Colorado Boulder with $1.1 million for two projects to help school districts and communities reduce exposure to harmful pollution from wildland fire smoke. The University is among nine institutions across the nation receiving a total of $7 million under EPA's Science to Achieve Results (STAR) program for research to address health risks from wildland fire smoke.

The University of Colorado Boulder will receive grant funding of $1.1M for two projects focused on reducing exposure to particulate matter associated with smoke. As part of the first project, a University research team will use an EPA grant award of $549,919 to deploy low-cost particulate matter sensors to compare indoor smoke levels in Denver-area schools and homes. The results of this effort will be used to develop health guidance for school districts and inform decisions about school closures to protect student health. The second project will use an EPA grant award of $549,000 to assess the transport and presence of wildfire particulate matter in single-family housing in the Western U.S. and evaluate and develop practical ways to help people reduce indoor exposure.

"As wildfires become more frequent and severe, we are working to effectively communicate the risks of smoke exposure to impacted communities," **said Wayne Cascio, acting principal deputy assistant administrator for science in EPA's Office of Research and Development**. "We are seeing an increase in prescribed fires to reduce the risk of catastrophic wildfires; however, these are also a source of smoke exposure. The research we are funding will help develop strategies to prevent and reduce the health impacts of smoke from wildfires and prescribed fires."

Wildland fire (wildfire and prescribed fires) smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles. Outside or indoors, exposure to these microscopic particles can cause burning eyes, runny nose, and illnesses such as bronchitis. Additionally, fine particles can aggravate chronic heart and lung diseases, and they are linked to premature deaths in people with these conditions. Smoke also contains air toxics that can cause cancer or other

serious health effects.

The institutions receiving these grants will conduct research to understand what actions might be effective for reducing ambient and indoor exposures to wildland fire smoke, and how best to communicate these actions to various groups. This research will integrate multiple disciplines including social and behavioral sciences, air quality science, and engineering.

Additional institutions receiving EPA research grants today include:

- ***Desert Research Institute, Reno, Nev.,*** is conducting research to increase wildfire smoke risk mitigation in rural communities through the development, implementation, and evaluation of stakeholder-driven monitoring and messaging in northern Nevada.
- ***Georgia Institute of Technology, Atlanta, Georgia***, is employing and assessing the effectiveness of air quality forecasting, on-site low-cost monitoring and air cleaning, and coordinated communication approaches at reducing exposures of schoolchildren in southern Georgia and Alabama to elevated levels of fine particulate matter and other air pollutants from prescribed fires.
- ***Ohio State University, Columbus, Ohio,*** is conducting research on health risk communication related to prescribed burn events to inform the development and dissemination of a Risk Communication ToolKit that can be used to plan for and conduct health risk communication in communities surrounding prescribed burn events.
- ***Portland State University, Portland, Ore.,*** is conducting field and laboratory measurements to better quantify transport of particulate matter from outdoor to indoor, holistically evaluate the effectiveness of recommended strategies to reduce indoor exposures to smoke and characterize air toxics called polycyclic aromatic hydrocarbons (PAHs) on indoor surfaces.
- ***Public Health Institute, Oakland, Calif.,*** is conducting research to reduce wildfire smoke exposures and health risks among agricultural workers and other low-income families by designing and field testing an affordable and effective filtration system for rooftop evaporative coolers, which are often used to cool homes without air conditioning.
- ***Stanford University, Stanford, Calif.,*** is using a smartphone app built from EPA's Smoke Sense platform to identify affordable and actionable intervention steps to reduce health impacts from smoke exposure for low-income, non-English speaking individuals and communities in northern California.
- ***University of California, Berkeley, Calif.,*** is conducting research to create a more precise model of wildfire smoke risk data for California, and to develop risk communication and dissemination strategies for hard-to-reach populations that can be used by communities and healthcare providers to protect people from the health impacts of wildfire smoke exposure.
- ***University of Washington, Seattle, Wash.,*** is working with ten schools in Washington to evaluate the effectiveness of classroom-based portable air cleaners to reduce respiratory health effects associated with wildfire particulate matter exposure and adapt an existing, hands-on air quality curriculum aimed at increasing environmental health literacy on the topic of ambient smoke, air quality and health.

Background on EPA's STAR Program

The goal of EPA's STAR program is to stimulate and support scientific and engineering research that advances EPA's mission to protect human health and the environment. It is a competitive, peer reviewed, extramural research program that provides access to the nation's best scientists and engineers in academic and other nonprofit research institutions. STAR funds research on the environmental and public health effects of air quality, climate change, environmental justice, water quality and quantity, hazardous waste, toxic substances, and pesticides.

For more information about these grants, visit: https://www.epa.gov/research-grants/interventions-and-communication-strategies-reduce-health-risks-wildland-fire-0

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