

**Opportunity Title:** EPA Postdoctoral Fellowship in Indoor Air Quality Evaluation **Opportunity Reference Code:** EPA-ORD-CEMM-AMCD-2021-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CEMM-AMCD-2021-01

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A complete application consists of:

- An application
- Transcript(s) For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. All transcripts must be in English or include an official English translation. Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations. Click <u>here</u> for detailed information about recommendations.

All documents must be in English or include an official English translation.

Application Deadline 8/26/2021 3:00:00 PM Eastern Time Zone

Description \*Applications may be reviewed on a rolling-basis and this posting could close before the deadline. Click <u>here</u> for information about the selection process.

**EPA Office/Lab and Location:** A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurement and Modeling (CEMM), Air Methods and Characterization Division (AMCD), Combustion Source Branch (CSB) located in Research Triangle Park, North Carolina.

**Research Project:** Wildfires frequently cause intense pollution episodes in downwind areas, particularly increasing fine particulate matter (PM2.5) concentrations. A common intervention recommended by public health agencies is to stay indoors and attempt to reduce pollution levels by using a home HVAC system with in-duct filters, operating a portable air cleaner (PAC), or relocating to a location with lower indoor pollution concentrations (e.g., clean air shelter). However, the effectiveness of these interventions and the impact of building characteristics that impact indoor air quality during smoke episodes is not well known.

This research project will focus on evaluating the effectiveness of these interventions through field evaluations of air cleaning devices in areas frequently impacted by wildfires. The participant may collaborate with a team of engineers, scientists and public health officials within and outside EPA to evaluate the effectiveness of smoke exposure reduction techniques in a field setting. The research participant will receive training in a variety of air quality measurement methods to assess smoke concentrations, including continuous measuring instruments, low-cost sensors, batch sampling methods, and analytical chemistry methods to measure a range of pollutants associated with wildfire smoke.

As part of this project the participant may be involved in the following

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activities:

- Measuring exposure to smoke in private residences as well as in public spaces
- Evaluating the continued effectiveness of air cleaning technology to reduce high smoke concentrations
- Analyzing data and identify characteristics that impact air cleaner
  effectiveness
- Presenting their results at scientific conferences or through peerreviewed manuscripts

Learning Objectives: The research participant will have freedom to carry out independent research commensurate with their level of training. During this research project, the participant will have the opportunity to learn a variety of air quality measurement methods to assess smoke concentrations indoors and outdoors. The participant will be mentored in data analysis and interpretation from air quality sensors. The research participant will receive training in the fundamental operation of air cleaning technology and approaches to reduce smoke concentrations indoors. The participant may also receive training in interacting with homeowners and building managers using these technologies to understand the challenges of using these technologies.

**Mentor(s)**: The mentor for this opportunity is Amara Holder (<u>holder.amara@epa.gov</u>). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Summer/Fall 2021. All start dates are flexible and vary depending on numerous factors. Click <u>here</u> for detailed information about start dates.

**<u>Appointment Length</u>**: The appointment will initially be for one year and may be renewed up to four additional years upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

**Participant Stipend:** The participant will receive a monthly stipend commensurate with educational level and experience. Click <u>here</u> for detailed information about full-time stipends.

**EPA Security Clearance:** Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

**ORISE Information:** This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and EPA. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.



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Questions: Please see the <u>FAQ section</u> of our website. After reading, if you have additional questions about the application process please email <u>ORISE.EPA.ORD@orau.org</u> and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by October 2021. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Classes in aerosols, air quality or indoor air quality, exposure assessment, scientific data analysis and visualization, or experimental methods
- Hands-on experience using air quality sensors, performing field measurements of aerosols
- Experience carrying out field studies
- Data processing/analysis skills and experience using statistical programming languages (e.g. R)
- Experience with technical writing and communication
- Eligibility Citizenship: U.S. Citizen Only

Requirements

- **Degree:** Doctoral Degree received within the last 60 months or
  - anticipated to be received by 10/31/2021 11:59:00 PM.
- Discipline(s):
  - Chemistry and Materials Sciences (12. )
  - Earth and Geosciences (21 (1)
  - Engineering (27\_)
  - Environmental and Marine Sciences (14 )
  - Life Health and Medical Sciences (4.)
  - Physics (<u>16</u>)
- Veteran Status: Veterans Preference, degree received within the last 120 month(s).