Opportunity Title: Laboratory and Field Study Assessment of Wildfire Smoke and Indoor Air Pollution Mitigation
Opportunity Reference Code: EPA-ORD-NRMRL-AEMD-2019-02

Organization	U.S. Environmental Protection Agency (EPA)
Reference Code	EPA-ORD-NRMRL-AEMD-2019-02
How to Apply	A complete application consists of:

- An application
- Transcripts – **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

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

If you have questions, send an email to **EPArpp@orau.org**. Please include the reference code for this opportunity in your email.

Application Deadline	7/30/2019 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling-basis.**

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 (PACs), or relocating to a location with lower indoor pollution concentrations (e.g., clean air shelter). However, the effectiveness of these interventions to reduce exposure over time to extremely elevated concentrations is not well known. This research opportunity will focus on evaluating the effectiveness of these interventions through laboratory evaluations of air cleaning devices repeatedly exposed to high concentrations of smoke and measurements of smoke exposure in areas frequently impacted by wildfires.
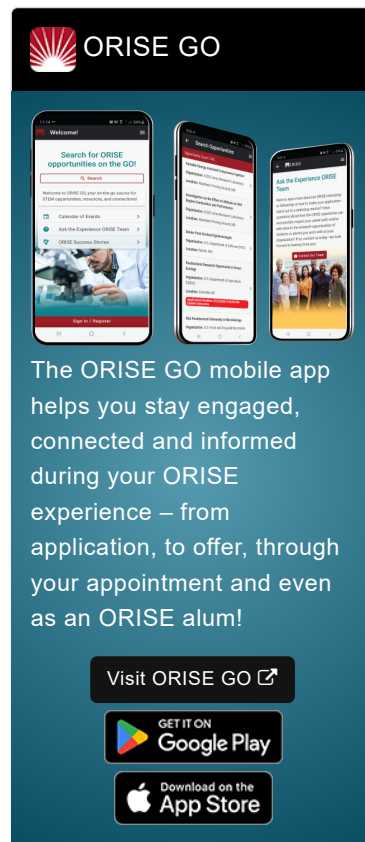
The research participant will collaborate with a team of engineers, scientists and public health officials within and outside EPA to evaluate the effectiveness of smoke exposure reduction techniques in a laboratory and field setting. The research participant will receive training in a variety of air quality measurement methods to assess smoke concentrations. These methods will include continuous measuring instruments, low-cost sensors, batch sampling methods, and analytical chemistry methods to measure a range of pollutants associated with wildfire smoke. The research participant will receive training in the fundamental operation of air cleaning technology and approaches to reduce smoke concentrations indoors.

Research training activities may include:

- Measuring exposure to smoke in private residences as well as in public spaces
- Using a wide array of measurement methods to evaluate smoke concentrations in laboratory and field environments
- Evaluating the continued effectiveness of air cleaning technology to reduce sustained high smoke concentrations
- Presenting results at scientific conferences or through peer-reviewed manuscripts

Anticipated Appointment Start Date: July 1, 2019

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. The initial appointment is for one year, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Some travel and/or training allowance will be made available for field work and presentation of findings. Proof of health insurance is required for participation in this program. The appointment is full-time in the Research Triangle Park, North Carolina, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

Qualifications

The qualified candidate should have received a doctoral degree in one of the related fields, or be currently pursuing the degree and will reach completion by December 2019. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Coursework in air quality, air pollution, exposure assessment, scientific data analysis and visualization, or experimental methods
- Understanding of air filtration/cleaning principals
- Experience with field measurement techniques, aerosol instrumentation, volatile organic compounds measurements, exposure chamber operation, or air pollution exposure assessment
- Proficiency with a data analysis package (e.g. R, Matlab, etc.)
- Strong verbal/written communication and organizational skills necessary to support field sampling and laboratory analysis
- General understanding of air pollutants from fires, e.g. CO_2, CO, NOx, volatile organic compounds, and PM2.5

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 12/31/2019 11:59:00 PM.
- **Minimum Overall GPA:** 3.40
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (3 👁)
  - **Physics** (16 👁)