

**Opportunity Title:** EPA Wildfire Air Quality Impacts Fellowship

**Opportunity Reference Code:** EPA-ORD-CEMM-AESMD-2020-09

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-ORD-CEMM-AESMD-2020-09

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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 [here](#) for detailed information about recommendations.

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

**Application Deadline** 12/15/2020 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 [here](#) 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), Atmospheric and Environmental Systems Modeling Division (AESMD), Atmospheric Chemistry and Aerosols Branch (ACAB) located in Research Triangle Park, North Carolina.

**Research Project:** Prior research using future climate scenarios with chemical transport models has shown that warming temperatures are expected to increase ozone and particulate matter (PM) concentrations in parts of the United States. However, most previous research on changes in air quality under future environmental conditions has neglected changes due to expected increases in wildfires and associated emissions. As wildfires are a major source of PM pollution, there is the potential for future increases in wildfires to significantly affect air quality and human health.

The focus of this research project is to explore the use of statistical or dynamic models to account for ecosystem and wildfire regime changes over time and incorporate the effects of wildfire-attributable air pollution on estimated air pollutant concentrations and consequent health effects.

Under the guidance of a mentor, the research participant may be involved in the following activities:

- Literature reviews of statistical and dynamical approaches to project changes in the frequency of wildfires;
- Developing and applying statistical or dynamical models for linking



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future climate projections to wildfire incidence

- Conducting chemical transport model simulations using the Community Multiscale Air Quality (CMAQ) modeling system
- Using the EPA's Environmental Benefits Mapping and Analysis Program (BenMAP) to project health and economic impacts of changes in PM concentrations attributable to changes in wildfires

**Learning Objectives:** The research participant will have the opportunity to gain experience using dynamically downscaled future climate scenarios to estimate impacts on wildfire emissions, PM concentrations, and health and economic impacts; Analyze large datasets and design sensitivity experiments; and, present their research through a combination of reports and technical presentations. The research conducted may also contribute to a manuscript for submission to a peer-reviewed journal.

**Mentor(s):** The mentor for this opportunity is Chris Nolte ([nolte.chris@epa.gov](mailto:nolte.chris@epa.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date: Winter 2021.** All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

**Appointment Length:** The appointment will initially be for one year and may be renewed up to three 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 [here](#) 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.

**Questions:** Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email [EPArpp@ornl.gov](mailto:EPArpp@ornl.gov) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing a the degree with completion by January 2021. Degree must have been received within five years of the appointment start date.

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Preferred skills:

- Experience with climate, meteorological, or chemical transport models
- Experience related to biomass burning emissions or statistical models

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 1/1/2021 11:59:00 AM.
  - **Academic Level(s):** Graduate Students, Postdoctoral, or Post-Master's.
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([12](#))
    - **Earth and Geosciences** ([21](#))
    - **Engineering** ([27](#))
    - **Environmental and Marine Sciences** ([14](#))
    - **Life Health and Medical Sciences** ([46](#))
    - **Mathematics and Statistics** ([10](#))
    - **Physics** ([16](#))
  - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).