

**Opportunity Title:** EPA Fellowship on Interactive Neuroendocrine and Systemic Health Effects of Non-chemical Stresses, Air Pollutants and Climate Factors

**Opportunity Reference Code:** EPA-ORD-CPHEA-PHITD-2022-12

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

**Reference Code** EPA-ORD-CPHEA-PHITD-2022-12

**How to Apply** *Connect with ORISE...on the GO!* Download the new ORISE GO mobile app in the [Apple App Store](#) or [Google Play Store](#) to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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.

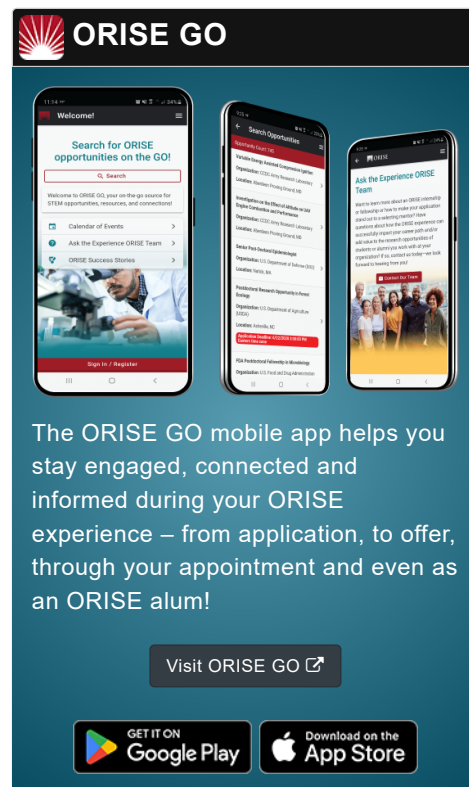
**Application Deadline** 4/14/2023 3:00:00 PM Eastern Time Zone

**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 postdoctoral research opportunity is available at the U.S. Environmental Protection Agency (EPA), Center for Public Health and Environmental Assessment (CPHEA) in the Office of Research and Development (ORD). This appointment will be located within the Public Health and Integrated Toxicology Division (PHITD) in Research Triangle Park, NC. This was formally the National Health and Environmental Effects Research Laboratory (NHEERL).

**Research Project:** Air pollutants contribute to adverse health effects in susceptible individuals. Our recent studies point to a central role of neuroendocrine system in mediating effects of irritant environmental pollutants. However the mechanisms and interactive influence of host factors, such as diseases, psychosocial stresses, climate conditions (such as high temperature) and nutritional disparities in mediating health effects are poorly understood. Our primary hypothesis is that neuroendocrine system plays a critical role in mediating pulmonary, systemic and extra pulmonary effects of inhaled irritant pollutants and these effects are modified by other stresses.

The research participant will have the opportunity to be trained in



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performing research on identifying mechanisms of interactive effects of chemical (air pollutants) and non-chemical stressors, including high ambient temperatures on health using susceptible models. The health effects of air pollutants and wild-fire smoke exposures will be assessed in healthy and susceptible models. The mechanisms of neuroendocrine, central and peripheral effects will be examined using molecular biology and high throughput techniques. Under guidance from their mentor, the research participant will also have the opportunity to receive training in state-of-the-art inhalation exposures, and high throughput epigenomic and genomic technologies. The research participant will have the opportunity to collaborate with scientists at the EPA and NIEHS. The research project will be closely integrated with ongoing projects in PHITD through collaboration.

**Learning Objectives:** The research activities and learning objectives may include:

- 1) Developing experimental protocols and problem-solving.
- 2) Assessment of tissue-specific changes using conventional molecular technologies and use high throughput platforms.
- 3) Use of molecular biology techniques to assess protein and gene expression changes in tissue samples, isolate cells and participate in high throughput genomics application. The participant will have the opportunity to collaborate with other scientists to process and analyze the results.
- 4) Developing updated reports (oral, written) to inform mentors and collaborators about activities and results concerning research progress (e.g., presentations, posters, and manuscripts).
- 5) Presentation of scientific findings by presenting results at scientific meetings.
- 6) Organizing and prioritizing research activities and maintain quality assurance of own and team data and information, including physical samples, laboratory notebooks, and electronic files. This includes compliance with all laboratory Quality Assurance and management policies and requirements.

The research participant will have the opportunity to develop skills in designing, conducting, analyzing, and synthesizing research for communication to the broader scientific audience. The research participant will have opportunities to present research findings at major society conferences and interact with a broad group of scientists at the EPA and elsewhere. The research participant will be mentored by Dr. Urmila Kodavanti, with additional guidance by Dr. M Ian Gilmour.

**Mentor(s):** The mentor for this opportunity is Urmila Kodavanti ([kodavanti.urmila@epa.gov](mailto:kodavanti.urmila@epa.gov)). If you have any questions about the research, please contact the mentor.

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**Anticipated Appointment Start Date:** **March 20, 2023.** 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 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

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

## Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields (Biology, Toxicology, Physiology), or be currently pursuing the degree with completion before the appointment start date. Degree must have been received within the past five years.

Preferred skills/experience:





- Experience in experimental design and statistical analysis, handling animals and performing experiments using laboratory animal models, and performing standard

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molecular biology techniques (e.g. genomic isolations, qRT-PCR, and protein assessments) is desired.

**Eligibility  
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Communications and Graphics Design** (6 )
  - **Computer, Information, and Data Sciences** (4 )
  - **Life Health and Medical Sciences** (19 )
  - **Mathematics and Statistics** (1 )