

**Opportunity Title:** EPA Cardiopulmonary Physiology and Toxicology Internship

**Opportunity Reference Code:** EPA-ORD-CPHEA-PHITD-2021-01

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

**Reference Code** EPA-ORD-CPHEA-PHITD-2021-01

**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.

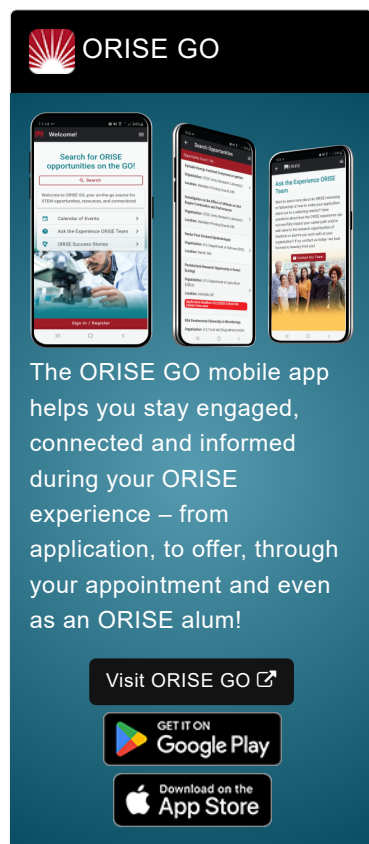
All documents must be in English or include an official English translation.

**Application Deadline** 6/30/2021 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 [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 Public Health Environmental Assessment (CPHEA), within the Public Health and Integrated Toxicology Division (PHITD) located in Research Triangle Park, North Carolina.

PHITD research focuses on the characterization and biological mechanisms of adverse health effects of environmental pollutants. Results of this research are published in peer-reviewed journals and inform EPA's environmental assessments and planning for air quality standards. The Division uses a variety of approaches to study toxicity of environmental pollutants, including cell cultures, animal models, and human studies. PHITD participates in several of EPA's national research programs, especially the Air and Energy (AE) research program. Within the AE research portfolio, PHITD formulates and conducts research designed to: characterize the relationships between air quality, climate change, and adverse health effects; evaluate the health effects of energy generation and combustion products from biomass; characterize the health effects of individual major pollutants (such as ozone, nitrogen oxides, and particles) and multipollutant mixtures; assess the toxicity of pollutants near sources such as roads, ports, wildfires, and urban areas; and identify susceptibility factors of at-risk human populations (such as asthmatics and those with cardiovascular disease) who are disproportionately impacted by pollution, and characterize the effects and mechanisms of responses to specific pollutants in susceptible populations.



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**Research Project:** This research project addresses the growing need to assess the impacts of non-environmental factors that modify the body's response to a toxicant (e.g. air pollution). As such, investigations focus on the effects of psychosocial/noise stress or nutritional deficiency on the development of cardiovascular dysfunction. In particular, the goal is to determine how stressors modify toxicological responses and if environmental rejuvenation (e.g. greenspaces) can ameliorate the detrimental effects of exposure. We use in-vivo approaches in rodents to parallel human conditions and indicators, and assess resiliency.

Research activities may include: 1) rodent cardiopulmonary surgical techniques, 2) ultrasound echocardiography, 3) microbiome analysis, 4) cardiovascular physiology data analysis, 5) presenting study results, and 6) writing manuscripts.

**Learning Objectives:** While interacting with an interdisciplinary team, the research participant will have the opportunity to learn to 1) think critically regarding environmental air pollution and health concerns, and design and conduct hypothesis-driven research that addresses these issues, 2) learn rodent surgical techniques, 3) use state-of-the-art equipment to assess cardiovascular function in rodents in response to air pollution exposure using ultrasound technology, 4) perform cardiopulmonary data analysis, and 5) learn to prepare and submit manuscripts for publication in peer-reviewed journals.

**Mentor(s):** The mentor for this opportunity is Mehdi Hazari ([hazari.mehdi@epa.gov](mailto:hazari.mehdi@epa.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** Summer 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 or 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

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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 [ORISE.EPA.ORD@orau.org](mailto:ORISE.EPA.ORD@orau.org) and include the reference code for this opportunity.

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

Preferred skills:

- Ability to participate in a physiology/biology/toxicology laboratory setting
- Basic knowledge of standard computer programs, and an interest in biological/physiological and toxicology research
- Strong organizational skills with respect to time and database management experience, i.e., evidence of experience with spreadsheet preparation, data collection, and database management
- Familiarity with basic laboratory health and safety procedures
- Prior experience in working in a laboratory setting as well as animal handling experience
- Familiarity with word processing systems (Word or Word Perfect), spreadsheets (Excel or Lotus), and PowerPoint presentation

**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or anticipated to be received by 6/30/2021 11:59:00 PM.
- **Discipline(s):**
  - **Environmental and Marine Sciences** ([3](#) )
  - **Life Health and Medical Sciences** ([21](#) )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).