

**Opportunity Title:** Postdoctoral Research Opportunity in Environmental Factors  
**Opportunity Reference Code:** EPA-ORD-NHEERL-EPHD-2019-02

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

**Reference Code** EPA-ORD-NHEERL-EPHD-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
- One educational or professional recommendation

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

If you have questions, send an email to [EPArpp@ora.u.org](mailto:EPArpp@ora.u.org). Please include the reference code for this opportunity in your email.

**Application Deadline** 8/4/2019 3:00:00 PM Eastern Time Zone

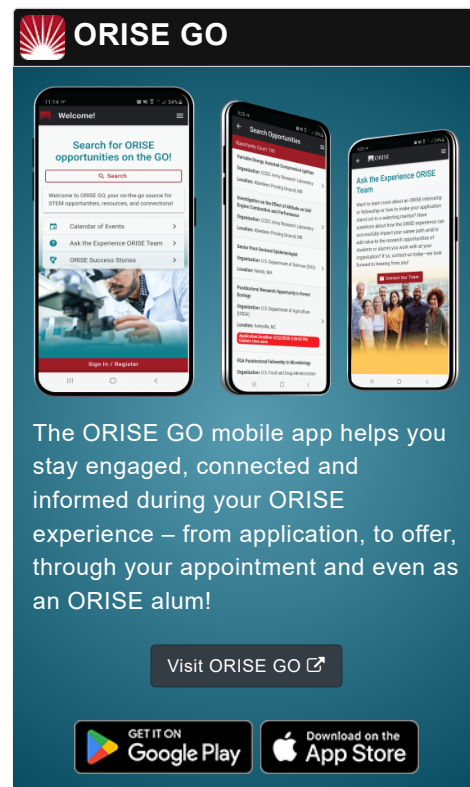
**Description** **\*Applications will be reviewed on a rolling-basis.**

A research opportunity is available at the U.S. Environmental Protection Agency (EPA), National Health and Environmental Effects Research Laboratory (NHEERL), Environmental Public Health Division (EPHD) located in Chapel Hill, North Carolina.

The research participant will have the opportunity to work with a team of EPA scientists on several epidemiological research projects aiming to characterize health effects of exposure to environmental and social factors. The main research project is a population-based epidemiological study aiming to quantify potential associations between characteristics of the urban environment, such as green spaces, and biomarker-based measure of physiological dysregulation known as allostatic load, as well as inter-relations among chronic social stress, environmental factors, allostatic load, infections, microbiome, and epigenetic markers of aging to elucidate mechanisms affecting vulnerability or resilience to environmental insults. The second research project aims to assess risks of infections with specific pathogens through exposure to contaminated recreational water using salivary antibody responses as a marker of infection. The third project involves statistical analysis of environmental data and medical claims data to assess associations between urban community characteristics, such as residential greenness and exposure to air pollution, and the development of diabetes and other systemic chronic diseases.

Research objectives include the following:

1. Under the guidance of a mentor, the research participant will learn to independently design laboratory experiments
2. Conduct laboratory experiments using a variety of commercial and in-house assays
3. Processing and analyzing laboratory and epidemiological data using statistical software such as SAS and R, and applying advanced statistical analysis techniques
4. Conduct GIS analysis of land cover and other geographic data using software packages such as ArcGIS and QGIS

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5. Will receive guidance in interpreting research findings
6. Will have the opportunity to present and publish experimental results and findings in collaboration with EPA investigators

Laboratory methods to be used for the above mentioned projects include ELISA, electrochemiluminescence assays, and Luminex multiplexed suspension fluorescence assays to measure biomarkers of immune, neuroendocrine and metabolic functions in human biological samples, as well as genetic and epigenetic tests, such as chromatin modification tests. The participant will also have to apply advanced regression analysis methods to conduct statistical analyses of associations between environmental factors and health using standard statistical software packages, such as SAS or R. The participant will also contribute to GIS analysis of data from EPA's EnviroAtlas and other similar databases using standard software packages, such as ArcGIS and QGIS.

**The mentor for this opportunity is Andrey Egorov ([egorov.andrey@epa.gov](mailto:egorov.andrey@epa.gov)).**

**Anticipated start date is January 2020.**

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. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Chapel Hill, 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 or be within two months of completion of a doctoral degree in environmental health sciences, environmental sciences and engineering, toxicology, microbiology, immunology, or a related life, health or medical science field. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Proficiency in immunological, microbiological or genetic laboratory techniques
- Experience in designing, planning and conducting laboratory experiments, and processing, analyzing and interpreting experimental data

## Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 12/31/2019 11:59:00 PM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (10 )