

Opportunity Title: Near Source Dispersion Modeling
Opportunity Reference Code: EPA-ORD-NERL-IO-2019-02

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-NERL-IO-2019-02

How to Apply 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

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

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

Application Deadline 3/31/2020 3:00:00 PM Eastern Time Zone

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

A research opportunity is currently 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), located in Research Triangle Park, North Carolina. EPA ORD recently reorganized and these are the newly named Centers/Divisions/Branches. This was formerly in the National Exposure Research Laboratory (NERL), Immediate Office (IO).

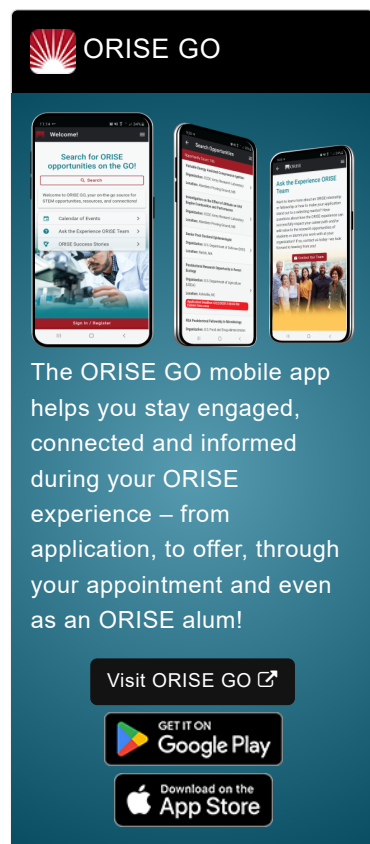
The Environmental Protection Agency's (EPA) Office of Research and Development (ORD) is focused on enhancing air quality modeling approaches to inform regulatory decisions for permitting and characterization of non-attainment areas with specific attention to near-source air quality modeling capabilities.

This research project is focused on the near-source area, including building affected dispersion (e.g., building downwash) and dispersion of mobile source emissions (near-road barrier and depressed roadway effects), and boundary layer characterizations in urban areas. The research participant will collaborate with an interdisciplinary team dedicated to enhancing EPA's air quality modeling capabilities for near-source applications.

The research participant may be involved with the following activities:

- Evaluating and analyzing pollutant patterns resulting from:
 - meteorological wind tunnel studies
 - computing fluid dynamics simulations
 - field studies
 - plume dispersion modeling
- Developing near-field dispersion modeling approaches with a specific focus on the AERMOD dispersion model

The research participant will learn to run, analyze, and interpret field, laboratory and air quality model data, and may, as their interest dictates, gain experience with other models and tools. The



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research participant may acquire hands-on experience in performing analyses of experimental datasets, and in understanding the intricacies of air quality modeling in the near-field environment. The research participant may provide oral presentations, and have the opportunity to give a technical presentation at a scientific conference/workshop. The research participant's research may contribute to a manuscript to be submitted to a peer-reviewed journal.

The mentor for this opportunity is David Heist (heist.david@epa.gov).

Anticipated Appointment Start Date: March/April 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 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.

Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA. OPM can complete a background investigation only for individuals, including non-US Citizens, who have resided in the US for the past three years.

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

Preferred skills:

- Familiarity with Windows-based computational tools (e.g. Matlab, R, etc)
- Any experience with Fortran programming language

- Eligibility Requirements**
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Earth and Geosciences** ([21](#) )
 - **Engineering** ([27](#) )
 - **Environmental and Marine Sciences** ([13](#) )
 - **Mathematics and Statistics** ([1](#) )
 - **Physics** ([2](#) )

Affirmation I certify that I have lived in the United States for the past three years.