

Opportunity Title: EPA Summer Research Project in Role of Organic Species in Criteria Pollutant Formation

Opportunity Reference Code: EPA-ORD-NERL-IO-2020-12

Organization U.S. Environmental Protection Agency (EPA)

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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 references

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 4/22/2020 3:00:00 PM Eastern Time Zone

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

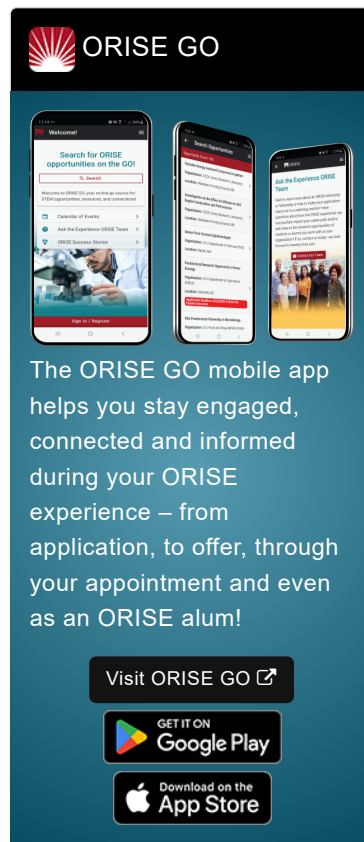
A research opportunity is currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurement and Modeling (CEMM), located in **Research Triangle Park, North Carolina**. EPA ORD recently reorganized and this is the newly named Center. This was formerly NERL.

EPA develops tools in support of clean air and chemical safety regulation. Specifically, EPA's Office of Research and Development develops the state-of-the-science Community Multiscale Air Quality (CMAQ) model (<https://www.epa.gov/cmaq>). The model represents the lifecycle of organic compounds from release into the atmosphere, through chemical and physical processing, to removal by deposition. The CMAQ model requires estimates of emissions as input. The primary source of emission information is the EPA National Emission Inventory (NEI). A number of organic species influence the formation of criteria pollutants, including ozone and fine particulate matter (PM_{2.5}), in ambient air. Participants are highly encouraged to connect information across scales (e.g. near-field to far-field, indoor to outdoor, regional to global, historical to future, etc).

This research project, roles of organic species in criteria pollutant formation, has the potential to inform CMAQ model development and/or NEI methodologies.

The research participant will have the opportunity to participate in the following activities and/or learn to:

- collaborate with a team of scientists to understand how organic compounds (e.g. monoterpenes, constituents of volatile chemical products, etc) contribute to air quality
- estimate the magnitude of precursor emissions, speciation, and/or transformation products associated with organic species emitted into the atmosphere
- develop scientific hypotheses and perform data analysis to investigate how semi volatile, intermediate volatility, and volatile organic compounds as well as their oxidation products contribute to organic aerosol and ozone
- learn/apply techniques including box modeling, emission inventory development, regional



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chemical transport modeling, exposure modeling, and/or the interpretation of field and laboratory data

The research participant will be mentored by Havala Pye. The target start date is mid-May or later but is flexible to accommodate an academic schedule and summer break. The duration is 2.5-3 months. Interest in extension beyond 3 months can be discussed.

Anticipated Appointment Start Date: June 1, 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.

If you are interested in this opportunity, please join us for the [ORISE Virtual Outreach Fair on March 25 from 12:00-3:00pm \(Eastern\)](#)!

There will be ORISE representatives and EPA mentors in the EPA booth.

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:


- Knowledge of a data processing/data analysis language (MATLAB, R, Fortran, Python, etc)
- Knowledge of emission inventory development or exposure modeling

Eligibility Requirements

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Postdoctoral, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Computer, Information, and Data Sciences** ([16](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))
 - **Life Health and Medical Sciences** ([45](#))
 - **Mathematics and Statistics** ([10](#))

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- **Physics** ([16](#) )
- **Veteran Status:** Veterans Preference, degree received within the last
120 month(s).

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