

Opportunity Title: Next Generation Emission Measurement Researcher

Opportunity Reference Code: EPA-ORD-NRMRL-AEMD-2018-06

Organization U.S. Environmental Protection Agency (EPA)

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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
- 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@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 2/22/2019 3:00:00 PM Eastern Time Zone

Description Traditional sources of air pollution with known emission points (e.g. facility stacks and vehicles) are well-studied and possess mature regulatory frameworks. Comparatively, industrial non-point and fugitive sources are less understood as emissions can be difficult to locate, measure, and model. Energy production operations, refineries, chemical plants, and other industries and waste facilities can emit air pollutants and odorous compounds from equipment leaks, process malfunctions, and area sources. Occurring over extended areas, the location, or even existence of these stochastic industrial sources (SISs) can be unknown, making them difficult to efficiently monitor and manage.


From the shared perspective of industries, regulators, and communities, improved understanding of SISs can yield many benefits such as safer working environments, cost savings through reduced product loss, lower airshed impacts, and improved community relations. The emergence of lower-cost sensors and inverse modeling approaches, is enabling new cost-effective ways to detect and analyze SIS emissions. Under its next generation emissions measurement (NGEM) program, EPA is working with a range of partners to develop and test NGEM tools that can assist facilities in detection and management of SIS emissions.


EPA has the following ORISE researcher opportunity in the NGEM topic area. The research participant will explore a focused aspect of NGEM related to practical realization of fugitive leak detection inside and near complex industrial facilities. The research participant will develop a unique experience interfacing both with EPA scientists and industry partners to help implement and document a specific sensor network leak detection approach for use in large facilities. The research participant will gain valuable experience by interfacing with multiple parts of EPA to help develop formal methods and quality assurance procedures for this NGEM system. The research participant will interact frequently with members of the research team representing both the industrial sites and the sensor technology development company as part of this research project. The research participant will be stationed at EPA's National Risk Management Research Laboratory in Durham, NC but will travel (cost reimbursed) to multiple locations in the U.S. to visit industrial and research sites of the industry partners. The research participant will expand on their current skills in complex data analysis and dispersion modeling and appropriately contribute as a member of the team that will document and methodize this research into a transferable form. The research participant will participate in publication and communication of results in journal articles, reports, and at scientific conferences. Approximately 20% of the research participants time will be spent interfacing with EPA scientists on directly related NGEM projects (other field and technology


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efforts) that provide direct cross-training opportunities to strengthen/broaden the research participants technical skills. The participant will be required to sign a non-disclosure agreement with EPA's industrial partners regarding business confidential aspects of the project.

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 in the Durham, 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 must have received a bachelor's, master's, or doctoral degree in Environmental Science, Physics or Engineering. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Strong academic record and references
- Demonstrated experience in undergraduate or graduate research
- Demonstrated capability in statistical data analysis with programs such as "R"
- Exposure to atmospheric dispersion modeling or micrometeorology
- Strong oral and written communication skills
- Desire to contribute to a fast paced, leading edge environmental technology project

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 month(s).
- **Academic Level(s):** Post-Bachelor's, Postdoctoral, or Post-Master's.
- **Discipline(s):**
 - **Communications and Graphics Design** ([1](#))
 - **Computer, Information, and Data Sciences** ([4](#))
 - **Earth and Geosciences** ([2](#))
 - **Engineering** ([7](#))
 - **Environmental and Marine Sciences** ([2](#))
 - **Mathematics and Statistics** ([2](#))
 - **Physics** ([3](#))