

Opportunity Title: Chemistry for Emissions Characterization at EPA

Opportunity Reference Code: EPA-SSP-0023-8

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-SSP-0023-8

- How to Apply**
- Submit application and supporting documents by clicking on Apply Now button.
 - *For more information, contact EPAjobs@orau.org. Do not contact EPA directly.*

Description The EPA Environmental Research and Business Support Program has an immediate opening for a Chemistry for Emissions Characterization Support position with the Office of Research and Development at the EPA facility in Research Triangle Park, NC.

The EPA Office of Research and Development (ORD) supports high-quality research and technology to improve the scientific basis for decisions on national environmental issues and to help EPA achieve its environmental goals and core national and global mission. Environmental research in EPA laboratories is conducted across a broad range of science, engineering, and math disciplines, and EPA collaborates with scientists at universities and other government institutions worldwide to achieve success.

A team of researchers in the Air Pollution Prevention and Control Division in Research Triangle Park, NC perform combustion emissions research and measurements. The team generates detailed chemical emissions profiles of particle matter (PM) and gas-phase PM precursors. These chemical profiles undergo a series of internal and external peer reviews prior to public release. In addition, the team performs daily analytical-chemistry laboratory duties involving: (i) running a variety of hyphenated chromatography and mass spectrometry (MS) instrumentation and techniques, (ii) emissions data interpretation and analysis, and (iii) emissions data dissemination for public consumption. These activities are accomplished under rigorous laboratory quality control, safety, and health standards. Additionally, the team performs chemical analysis of the semi-volatile and volatile organic air toxics important to global scale emissions research and air and combustion source monitoring activities.

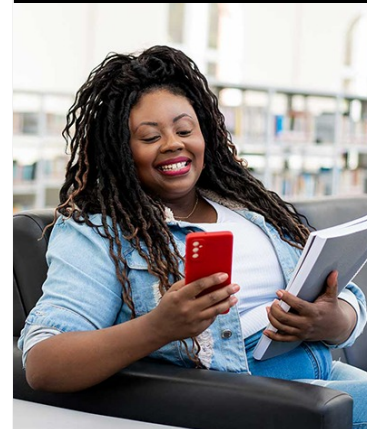
The selected candidate shall support research to develop novel analytical and chemical methods for semi-volatile and volatile organic compounds (SVOC and VOCs). He/she shall interact with and support ECPB engineers and scientists working to identify and resolve combustion source measurement and analytical laboratory issues. Specific support roles are described below:

Area 1: Chemistry laboratory support for emissions characterization

The selected candidate shall log and prepare gas- and particle-phase sample media and collect field and laboratory combustion emissions samples for subsequent analysis using hyphenated chromatography and mass spectrometry techniques, including gas chromatography-mass spectrometry (GC-MS) and high performance liquid chromatography



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(HPLC)-MS. He/she shall also perform real-time MS measurements and physical properties measurements of aerosol particles. Field and laboratory duties shall include maintaining the instrumentation used for SVOC, VOC, and carbonyl characterization according to proper quality control, safety, and health guidelines.

Area 2: GC-MS and LC-MS method development and data interpretation

The selected candidate shall interpret physical, chemical, and biological data related to PM and organic gas emissions measurements. This includes providing qualitative and quantitative estimates of air toxics and VOC emissions – including carbonyls, aldehydes, and various aromatic gases – from combustion and near-source environments (e.g., near-roadways or industrial operations). He/she shall also devise novel analytical and chemical approaches for PM and organic gas emissions from these environments and closely interact with other scientists external to and within EPA with the objectives of improving emissions sampling and analytical methodologies and their implementation.

Area 3: Analysis and public dissemination of emissions data

The selected candidate shall organize emissions science information for public database input and for wider dissemination into peer-reviewed science literature. He/she shall respond to peer review comments by ORD scientists, those from relevant EPA offices, and external reviewers. Along with EPA staff, the selected candidate shall identify and investigate cross-cutting science issues related to near-source emissions research, mobile emissions technologies and SVOCs and VOCs, such as the application of novel methodologies or models, presentation of scientific findings, and procedures for emission factor development.

Location: This job will be located at EPA's facility in Research Triangle Park, NC.

Salary: Selected applicants will become temporary employees of ORAU and will receive an hourly wage of \$28.14 for hours worked.

Hours: Full-Time.

Travel: The selected candidate shall plan to attend one national aerosol or emissions conference meeting per year.

Expected Start Date: The position is full time and expected to begin December 2017. The initial project is through May 14, 2018, followed by up to two (2) 12-month optional periods.

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Qualifications Eligible applicants must:

- Be at least 18 years of age and

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- Have earned a master's degree in chemical or environmental engineering or in the physical, chemical, or combustion sciences, or a related field from an accredited university or college within the last 24 months and
- Be a citizen of the United States of America or a Legal Permanent Resident.

EPA ORD employees, their spouses, and children are not eligible to participate in this program.

Required Knowledge, Skills, Work Experience, and Education

The applicant shall have:

- Relevant coursework in 4 or more of the following: physics, chemistry, environmental chemistry, chemical instrumentation, biology, combustion engineering, chemical engineering, environmental engineering, thermodynamics, statistics, data science or analysis;
- Strong skills in independent research work as demonstrated by research projects for coursework, submitted research papers or thesis, or approved independent study, or as evidenced by related work experience in the engineering or science areas mentioned above or herein;
- Working knowledge of field and laboratory combustion source emissions experiments and related operations;
- Working knowledge of sampling aerosols and measuring aerosol particle properties with real-time or semi-continuous instruments or analyzers;
- Experience determining the chemical properties of aerosols using modern mass spectrometry (MS) techniques; and
- Strong written, oral and electronic communication skills.

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| Eligibility Requirements | <ul style="list-style-type: none">• Citizenship: LPR or U.S. Citizen• Degree: Master's Degree or Doctoral Degree received within the last 24 month(s).• Discipline(s):<ul style="list-style-type: none">◦ 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 👁)◦ Physics (16 👁)◦ Science & Engineering-related (1 👁) |
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Affirmation I certify that I am at least 18 years of age; a recent graduate with a master's degree in chemical or environmental engineering or in the physical, chemical, or combustion sciences, or a related field; a citizen or a Legal Permanent Resident of the United States of America; and not a current employee of EPA ORD or the spouse or child of an EPA ORD

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employee.

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