Opportunity Title: Chemical Exposure Modeling Research at EPA
Opportunity Reference Code: EPA-SSP-0010-13

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-SSP-0010-13

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 Chemical Exposure Modeling Research with the Office of Research and Development at the EPA's Research Triangle facility in Raleigh-Durham, NC.

The Office of Research and Development at the EPA supports high-quality research to improve the scientific basis for decisions on national environmental issues and help EPA achieve its environmental goals. Research is conducted in a broad range of environmental areas by scientists in EPA laboratories and at universities across the country.

The National Exposure Research Laboratory (NERL) of the U.S. Environmental Protection Agency (EPA) conducts research to improve the ability of EPA to assess human and ecological exposures to environmental stressors. Many of the stressors of concern are organic and inorganic chemicals that are in consumer products and articles. To improve EPA's ability to assess the exposure risk for harmful chemicals, NERL is developing and applying software tools and algorithms to simulate environmental fate and transport, understand human activity patterns, evaluate exposure potential, and estimate internal dose.

The selected candidate shall work within a multi-disciplinary research team and shall provide technical and research support for the development of computational models of exposure to chemicals via multiple pathways and interpretation of non-targeted or suspect-screening mass spectrometry chemical monitoring data.

Duties include but are not limited to:

- Development of datasets or databases for the rapid parameterization models of human exposure to chemicals via multiple pathways (e.g. consumer products, consumer articles, foods);
- Development and implementation of algorithms in the R language for predicting human exposure to chemicals via multiple pathways;
- Development of algorithms for analysis of mass spectrometry data in the context of chemical sources and human exposures. Algorithms may include cluster analyses, machine learning approaches (e.g. random forest algorithms, support vector machine algorithms); and
- Analysis of chemoinformatic information for chemical features (e.g., accurate masses) identified in mass spectrometry data via statistical analyses.

Communications-related responsibilities will include:

- Compilation and summarization of data and literature references into organized computer files;
- Participation in team discussions on progress and planned activities;
- Interaction with other members of the development team as well as EPA scientists;
- Visualization of data and modeling results; and
- Communication of results via presentation(s), written reports, and peer-reviewed publications.

The selected candidate shall perform work following guidelines and procedures laid out in approved Quality Assurance Project Plans associated with this research.

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

Salary: The selected applicant will become a full time temporary employee of ORAU and will receive an hourly wage of $40.41 for hours worked.

Hours: Full Time.

Travel: Occasional overnight travel may be required.

Working Conditions: This position will involve work in an administrative setting and is not expected to involve exposure to hazardous elements.

The selected candidate shall be supervised by a mentor who will provide day-to-day direction, as well as coach, advise and counsel the selected candidate, and review his/her work.

Expected Start Date: The position start date is June 2017. The selected applicant will be a temporary employee of ORAU working as a contractor to EPA. The initial contract period is through May 14, 2018. EPA may elect to renew the contract for an additional two (2) 12-month optional periods.

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Qualifications **Eligible applicants must:**

- Be at least 18 years of age and
- Have earned a Doctorate degree in engineering, statistics, chemistry, environmental science, or a closely related field of study 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

Successful candidates shall have:

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- Demonstrated successful completion of at least 12 hours of coursework in chemistry and 12 hours of coursework in computer science, mathematics, and/or statistics;
- Demonstrated education and/or experience in programming (e.g., python, R, Matlab, SAS, or other languages);
- Demonstrated experience with statistical modeling or data analytics (e.g., cluster analysis, machine learning, Bayesian modeling); and
- Demonstrated ability to collaborate with others as part of a team.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree received within the last 24 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (45 👁)
  - **Mathematics and Statistics** (10 👁)

Affirmation

- I certify that I am at least 18 years of age; have earned a Doctorate degree in engineering, statistics, chemistry, environmental science, or a closely related field of study from an accredited university or college within the last 24 months; 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 employee.

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