Opportunity Title: Chemical Exposure Data Scientist
Opportunity Reference Code: EPA-NSSC-0009-15-6-1-21

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-NSSC-0009-15-6-1-21

How to Apply Click HERE to Apply

Description The EPA National Student Services Contract has an immediate opening for a full time Chemical Exposure Data Scientist position with the Office of Research and Development at the EPA facility in Research Triangle Park, 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.

What the EPA project is about

The Center for Computational Toxicology and Exposure (CCTE) supports ORD by providing solutions-driven research to rapidly evaluate the potential human health and environmental risks due to exposures to environmental stressors and ensure the integrity of the freshwater environment and its capacity to support human well-being. CCTE researchers are developing and applying cutting edge innovations in methods to rapidly evaluate chemical toxicity, transport, and exposure to people and environments. Within CCTE, the Chemical Characterization and Exposure Division (CCED) CCED performs research to develop and advance analytical chemistry, computational chemistry, and cheminformatic approaches that are critical to the rapid characterization of the presence, structural characteristics, and properties of chemicals that underlie chemical exposure, environmental fate, toxicokinetics and toxicity.

What experience and skills will you gain?

As a team member, you will provide technical support research under the Sustainable and Healthy Communities (SHC), including the development of ontologies and technical queries related scenarios for exposure of receptors to chemicals via multiple pathways, including contact with consumer products (e.g., upholstered furniture, apparel, consumer packaged goods) and contaminated environmental media (e.g., air, water).

As a team member, you will assist with support of model development and data needs, including acquisition and development of datasets to parametrize exposure models, development of decision rules for implementation in models, assistance in the testing or evaluation of the models and databases, basic summaries and analyses of data, and extraction and curation of data from original sources. Your work may include gathering additional datasets from online sources, formatting datasets into standard templates and uploading into databases using creativity to determine rules to parametrize models of human behavior and product usage, testing and evaluating ease-of-use of software, completing

QA workflows to ensure data quality and provenance, and development and application of cheminformatics and machine learning techniques to analyze data.

How you will apply your skills

Specific Responsibilities

- Conducting internet and literature searches to compile datasets of exposure-related information (e.g., chemical concentrations in environmental and biological media, consumer product use);
- Conducting internet and literature searches of chemical-specific pharmacokinetics-related information (absorption rates, half-lives, volumes of distribution);
- Collecting, extracting, transcribing, and organizing data (e.g., in spreadsheets and databases);
- Identifying (via searches of peer-reviewed and government literature) simple, screening-level exposure scenarios for different exposure pathways relevant to chemicals of interest including PFAS;
- Implementing simple models into computational code using any number of open-source programming languages/environments (e.g., python, R);
- Providing route- and pathway-specific exposure estimates for selected chemicals;
- Performing statistical analysis of data using Excel, the R statistical software package or other software;
- Performing quality control of curated data (data entered by third party);
- Participating as a member of a multi-disciplinary research team;
- Interacting with other members of the development team as well as EPA scientists;
- Thoroughly documenting all work as directed by EPA mentor to comply with EPA quality assurance procedures for transparency and reproducibility of work; and
- Summarizing work in internal reports/memos to be used by EPA scientists.

Support Responsibilities

- Collecting, curating, and organizing data (e.g. in databases) on exposure factors related to chemical exposure;
- Manipulating information on chemicals, exposure model inputs, and exposure estimates using statistical software. Collecting, curating, and organizing data (e.g. in databases) to parametrize exposure models;
- Responding to data requests from colleagues as needed (e.g. retrieve data according to specified criteria) through development of programming scripts or SQL queries; and
- Developing novel models and workflows for data analysis.

Required Knowledge, Skills, Work Experience, and Education

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- Experience with quantitative techniques, basic statistics, and use of spreadsheets;
- Strong reading comprehension skills and experience logically interpreting pieces of data; and
- Experience programming in the R and/or Python language beyond simple classroom applications.

Desired Knowledge, Skills, Work Experience, and Education

- Experience with computational or mathematical modeling and/or data science techniques in any discipline;
- Experience with databases (e.g. MySQL); and
- Master's coursework in statistics, data science, machine learning, user experience and design, and data analysis.

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

Salary: Selected applicant will become a temporary employee of ORAU and will receive an hourly wage of $30.16 for hours worked.

Hours: Full-time

Travel: Occasional overnight travel may be required.

Expected start date: The position is full time and expected to begin July 2021. The selected applicant will become a temporary employee of ORAU working as a contractor to EPA. The initial project is through May 14, 2022, with up to 3 additional option periods.

For more information, contact EPAjobs@orau.org. *Do not contact EPA directly.*

Qualifications

- Be at least 18 years of age **and**
- Have earned at least a Masters' degree in physics, chemistry, biology, engineering, applied sciences, environmental health, public health, exposure science, computer sciences, information technology, data science, or a related discipline 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.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree received within the last 24 month(s).
- **Overall GPA:** 2.00
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (27)

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- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (46 👁)
- **Physics** (16 👁)

Affirmation I certify that I am at least 18 years of age; a recent graduate with at least a Masters' degree in physics, chemistry, biology, engineering, applied sciences, environmental health, public health, exposure science, computer sciences, information technology, data science, or a related discipline 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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