

Opportunity Title: Inorganic soil bioavailability research

Opportunity Reference Code: EPA-ORD-NERL-EMMD-2018-08

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.

Description A research training opportunity is currently available at the U.S. Environmental Protection Agency's (EPA) Office of Research and Development (ORD)/National Exposure Research Laboratory (NERL). The appointment will be served with the Exposure Methods and Measurements Division (EMMD) Research Triangle Park, NC.

This research project includes assessing the bioavailability and bioaccessibility of inorganic contaminants (metals) found in soil and dust to improve the accuracy of human health risk assessments at contaminated sites and inform more effective soil remediation strategies. The research project will include the routine use of advanced analytical equipment including Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES) and Inductively Coupled Plasma-Mass Spectrometry (ICP-MS). The research participant may learn the process of developing, modifying, improving, and evaluating methods and instrumentation for measuring soil bioavailability including lead and arsenic found in contaminated soils. The research project includes laboratory research, data reduction and interpretation, literature review, and interfacing with experts in the respective technical specialties. More specifically, this research project includes methods development for inorganic metals and analysis of extracts using analytical equipment such as Inductively Coupled Plasma-Optical Emission Spectrometry (ICP-OES), Inductively Coupled Plasma-Mass Spectrometry (ICP-MS).


The research participant may learn through interactions with other individuals and teams on cross-cutting scientific issues that arise from the research and research collaborations. The research participant will have opportunities to collaborate with other USEPA and academic scientists to further his or her professional development. The research participants will be encouraged to publish their research and give presentations.


The research participant may be involved in the following training activities:




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- Methods development and analyses using an extraction test to assess the bioavailability of soil inorganics
- Developing inorganic metal extraction procedures for biological tissues
- Research in support of in-vivo animal feeding studies;
- Conducting descriptive statistical analyses
- Performing literature searches for scientific journal articles
- Preparing publications, presentations, reports, and abstracts

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 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.

The mentor for this project is Karen Bradham (bradham.karen@epa.gov). The anticipated start date for the appointment is October 1, 2018.

Qualifications Applicants must have received a Ph.D. degree within five years of the desired starting date in a related discipline (chemistry, engineering, soil chemistry, toxicology).

Hands-on laboratory skills and knowledge of inorganic chemistry and advanced instrumentation, including Inductively Coupled Plasma-Optical Emission Spectrometry and Inductively Coupled Plasma-Mass Spectrometry are desired. The best applicant will possess academic training/work experience in conducting environmental or chemical studies, and possess skills/experience in laboratory work in order to provide these services, as well as having completed a Ph.D. degree program in a related discipline (chemistry, engineering, soil chemistry, toxicology). Peer reviewed literature publications written by applicants is favorable.

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([5](#) )
 - **Communications and Graphics Design** ([1](#) )
 - **Earth and Geosciences** ([3](#) )
 - **Engineering** ([3](#) )
 - **Environmental and Marine Sciences** ([1](#) )
 - **Life Health and Medical Sciences** ([2](#) )