

Opportunity Title: Microbial Ecology and Bioavailability of Lead (Pb) in Soils and

Sediments

Opportunity Reference Code: EPA-ORD-NHEERL-GED-2018-03

Organization

U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-NHEERL-GED-2018-03

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

The research participant will conduct research to assess the bioavailability of heavy metals, particularly Pb, in soils and sediments. The overall aim of the larger research project is to evaluate the effectiveness of mitigating Pb-contaminated soils using amendments, such as phosphate or lime, that immobilize Pb and reduce its toxicity. The research participant will interact with EPA scientists seeking to determine how environmental factors, soil amendments, and microbial communities affect Pb speciation, bioavailability, and toxicity. A significant part of this research is defining the interactions between Pb-containing minerals and microorganisms and using the information to ultimately develop reporter strains or other ecological tools to assess the bioavailability, and hence toxicity, of Pb in soils and sediments. The research participant's research could entail isolating and characterizing Pb-resistant bacteria, characterizing microbial communities and genes important to the transformation of Pb minerals, or developing reporter strains that can provide rapid, cost effective avenues to assess Pb bioavailability for risk assessment and monitoring.

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 Gulf Breeze, Florida 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 Richard Devereux (devereux.richard@epa.gov). The anticipated start date for the appointment is October 1, 2018.

Qualifications

This research training position is for postdoctoral research on relationships between microbiological transformations of lead (Pb), the mineralogical state of Pb in soils and sediments, and the relative toxicity of Pb-containing minerals. The candidate should have a Ph.D. in microbial ecology, biogeochemistry, soil science, or related field. The degree must be received within five years of the appointment start date. Scientists who have been awarded the degree or have successfully fulfilled the requirements for a Ph.D. that will be awarded at the close of the current semester will be considered.

Applicants should have conducted research on the interactions of microorganisms with heavy metals such as Pb, Cd, or As in soils or sediments. Relevant expertise includes mineralogy (e.g.; XRD), microbe-mineral interactions, chemical extractions of metals from soils and sediments, quantitative analysis of metals, microbial ecology using molecular and -omic approaches, gene cloning and expression, or development of reporter strains.



Opportunity Title: Microbial Ecology and Bioavailability of Lead (Pb) in Soils and Sediments

Opportunity Reference Code: EPA-ORD-NHEERL-GED-2018-03

Eligibility Requirements

- Citizenship: U.S. Citizen Only
- Degree: Doctoral Degree.
- Academic Level(s): Graduate Students or Postdoctoral.
- Discipline(s):
 - Chemistry and Materials Sciences (2.)

 - Engineering (4)
 - Environmental and Marine Sciences (1. .

OAK RIDGE INSTITUTE FOR SCIENCE AND EDUCATION

💹 ORISE GO





Opportunity Title: Microbial Ecology and Bioavailability of Lead (Pb) in Soils and

Sediments

Opportunity Reference Code: EPA-ORD-NHEERL-GED-2018-03

