

Opportunity Title: EPA Fate and Transformation of Metals in the Environment Fellowship

Opportunity Reference Code: EPA-ORD-CESER-LRTD-2020-01

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. All transcripts must be in English or include an official English translation. 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 recommendations. Click [here](#) for detailed information about recommendations.

All documents must be in English or include an official English translation.

Application Deadline 7/7/2020 3:00:00 PM Eastern Time Zone

Description *Applications may be reviewed on a rolling-basis and this posting could close before the deadline. Click [here](#) for information about the selection process.

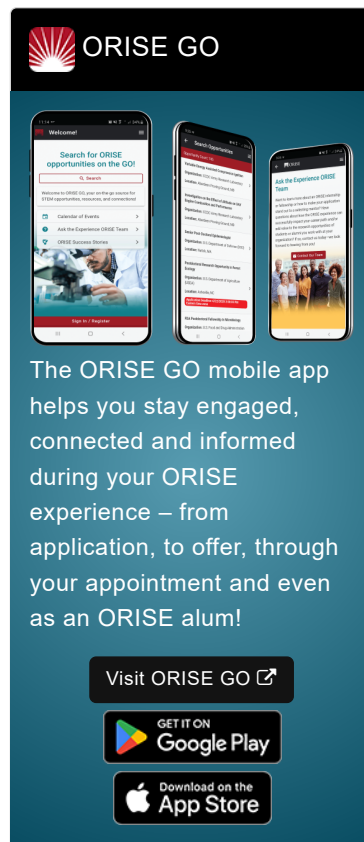
EPA Office/Lab and Location: A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Solutions and Emergency Response (CESER), Land Remediation and Technology Division (LRTD) located in Cincinnati, Ohio.

Research Project: The primary focus of the research will be on environmental transformations of metals that affect their transport and toxicity along with remediation of metal-contaminated sites. This research project will develop a study of pyrite oxidation to determine how much it affects groundwater quality and the use of sulfate-reducing bioreactors in the remediation of mining-impacted water. Secondary focus of this research project will be on the transformation of engineered nanomaterials that are released to the environment and remediation of contaminated sites.

Learning Objectives: Under the guidance of a mentor, the research participant will conduct basic and applied research on the characterization and quantification of metals in environmental media to understand their chemical behavior, fate, transport, transformation, and adverse effects on environmental and human health. Research activities may include: conducting research experiments, analyzing data, and writing peer-reviewed journal articles. A major component of this research will be to study the fate and transport of metals in the environment, effects of metal contamination in groundwater, and fate of engineered nanomaterials in the environment. There may be future research involving the fate and transformation of nano-fertilizers/pesticides. The participant will have access to a large array of analytical/physical technologies in their research activities, including, but not limited to Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM) -VP/BSE/X-ray Analysis/Mapping, Dynamic Light Scattering (DLS), X-ray Photoelectron





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Spectroscopy (XPS), Fourier Transform Infrared Spectroscopy (FTIR), microwave technology, X-Ray Absorption Spectroscopy (XAS), X-Ray Diffraction (XRD), and single particle - Inductively Coupled Plasma with Mass Spectrometry (spICP/MS).

Mentor(s): The mentor for this opportunity is Souhail Al-Abed (al-abad.souhail@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Summer 2020. All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

Appointment Length: The appointment will initially be for one year and may be renewed up to three additional years upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. Click [here](#) for detailed information about full-time stipends.

EPA Security Clearance: Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

ORISE Information: 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. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.




Questions: Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email EPArpp@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a doctoral degree in one of the relevant fields. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Strong verbal and writing skills
- Ability to conduct research both as a part of a team and independently
- Basic knowledge of analytical instrumentation related to analysis of metals in environmental media including, but not limited to: inductively-coupled plasma - mass spectrometry (ICP-MS), x-ray photoelectron spectroscopy (XPS), electron microscopy (TEM/SEM), x-ray absorption spectroscopy (XAS), and dynamic light scattering (DLS)

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([1](#) )
 - **Communications and Graphics Design** ([2](#) )
 - **Earth and Geosciences** ([4](#) )

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- **Engineering** ([7](#) 👁)
- **Environmental and Marine Sciences** ([3](#) 👁)
- **Science & Engineering-related** ([1](#) 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).