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Opportunity Title: EPA Fellowship for Soil Health Practices to Address Groundwater Nitrate Contamination
Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2022-06

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CPHEA-PESD-2022-06

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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 2/28/2023 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 United States Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA), Pacific Ecological Systems Division (PESD) located in Corvallis, Oregon.

The research participant will be based in Corvallis, Oregon, and the primary research activities will include data analysis from the primary field effort in south central Kansas. Primary location of the project is the Cheney Watershed Restoration and Protection Strategy (WRAPS) Area. The research participant will have the opportunity to travel to Kansas twice in the year in order to support the project.

Research Project: Drinking water nitrate contamination is a significant economic and public health concern in many areas of the US, with few tested best practices for improving source water quality. This research project seeks to establish a monitoring framework for quantifying the benefits of soil health best management practices (BMPs) for groundwater nitrate mitigation, by comparing among established fields varying in tillage, nutrient management, and cover crop practices. Improved source water protection options facilitated by this research would allow stakeholders to leverage funding for BMP implementation by providing the required ability to forecast water quality improvements from the BMPs. These improved forecasting capabilities would open a method of achieving safe drinking water nitrate concentrations through implementing surface-level BMPs

rather than treating contaminated source waters.

The goal of this research project is to provide methods to accurately calculate reductions in field-level N surplus and soil nitrate concentrations after harvest through BMP implementation. The research participant will have the opportunity to collaborate with EPA staff on this primary research question: 1) Will the implementation of soil health related BMPs, such as cover crops and precision fertilizer application, result in measurable reductions in soil extractable N and N surplus?

Learning Objectives: This research effort will quantify the potential mitigation of nitrate leaching that growers and stakeholders can expect from implementing widely accepted soil health BMPs (like cover crops, no-till, or reduced nitrogen fertilizer application). Such quantification of potential groundwater quality benefits fostered by soil health BMPs will allow stakeholders to develop plans and leverage funding for BMP implementation.
The research participant will be mentored by PESD and other EPA scientists as part of a national EPA program on the impacts of nitrogen within EPA's Safe and Sustainable Water Research Program.

Mentor(s): The mentor for this opportunity is Jana Compton (compton.jana@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Winter, 2022. 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 may be for one year and may be renewed 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.

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ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

Questions: Please see the FAQ section of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing one of the degrees with completion before May 31, 2023. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Minimum of a M.S. degree with emphasis in Soil Science, Water Resources, Biogeochemistry and/or Agronomy.
- Experience interpreting soil data and water chemistry data.
- Experience with data analysis.
- Exceptional data management skills, and skills at documenting activities.
- Exceptional communication skills including writing and publishing scientific manuscripts, and public speaking experience.
- Experience with contributing to peer-reviewed papers or reports.
- Demonstrated skills working as a part of a group.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 5/31/2023 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (6 👁)
  - **Communications and Graphics Design** (1 👁)
  - **Earth and Geosciences** (1 👁)
  - **Engineering** (2 👁)
  - **Environmental and Marine Sciences** (6 👁)
  - **Life Health and Medical Sciences** (7 👁)
  - **Mathematics and Statistics** (3 👁)