

**Opportunity Title:** EPA Fellowship in Nature based ecosystem services in Ag and Floodplain Systems

**Opportunity Reference Code:** EPA-ORD-CESER-GCRD-2024-02

**Organization** U.S. Environmental Protection Agency (EPA)

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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** 8/30/2024 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 training opportunity is currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Solutions and Emergency Response (CESER), Groundwater Characterization and Remediation Division (GCRD) located in Ada, Oklahoma. If selected for the opportunity, the participant will need to relocate to the appropriate EPA facility. The relocation costs are not reimbursable. The opportunity is not 100% remote, but limited remote participation may be considered at the mentor's discretion.


**Research Project:** This research will assess the benefits of restored aquatic systems, wetlands, and engineered systems in tile drained agricultural systems and human influenced floodplain systems. This will be accomplished by employing both a literature review, the application of GIS and models of scenarios of restoration and changes to hydrology (e.g., tile drainage) currently being used or proposed for the management of nutrient pollution. A goal of this research is to provide insight for the region, state, and landowners on how to support and encourage nutrient reduction strategies while simultaneously informing landowners of the benefits and trade-offs of these nutrient remediation strategies. Agricultural productivity and water quality relies on ecosystem service and any strategy adapted for these landscapes will need to a) meet needs of landowners, b) reduce the loadings of nutrients to local streams, and c) maintain and conserve ecosystem functions. Therefore, a collaborative effort to develop a demonstration study is proposed to begin understanding how stakeholders




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might improve the ecosystem services while reducing excess nutrients in streams, reservoirs, and groundwater.

Under the guidance of the mentor, the participant will conduct research to assess the benefits of restored aquatic systems, wetlands, and engineered systems in tile drained agricultural systems and human influenced floodplain systems. This will be accomplished by employing both a literature review, the application of GIS and models of scenarios of restoration and changes to hydrology (e.g., tile drainage) currently being used or proposed for the management of nutrient pollution. The participant will work with a research team and stakeholders to identify critical research questions and carry out research. The participant will be provided opportunities to participate and learn from other ongoing collaboration with stakeholders to demonstrate the value of restored wetlands to decrease nutrient in the upper Midwest as well as ongoing floodplain restoration research related to water quantity and quality. With guidance from the mentor, the participant will have the opportunity to develop original research and participate in collaborative research projects. The participant is expected to present findings through scientific presentations and publishing.

Under the guidance of the mentor, the research participant will learn about the application of innovative approaches to implement natural infrastructure to reduce the impacts nutrient pollution, support emerging environmental restoration approaches that include the potential impacts of excess nutrients on water quality. The research participant will gain experience in government research and stakeholder collaboration and applications of restoration to support water quality.

**Learning Objectives:** Under the guidance of a mentor, the research participant may be involved in:

- Research methods used in the evaluation of restoration of wetlands, particularly around water quality and ecosystem services.
- Approaches used to quantify the loads and fate transport of nutrients from nutrient rich systems to wetlands. Developing an understanding of the potential benefits of wetland restoration under different scenarios.
- Development and application of statistical methods to analyze data; apply GIS and models to assess ecosystem service benefits and water quality effects of wetland restoration.

The research participant will have an opportunity to learn from ecologists, environmental engineers, and physical scientists in Ada, OK and Cincinnati, OH, as well as staff at multiple EPA Regions who are engaged in wetlands and ecosystem services research. The research participant will be expected to communicate their research to Agency personnel and the broader scientific community through presentations and papers. The research participant will be involved in cutting-edge environmental research that will help prepare the individual for pursuing their future career endeavors.

**Mentor:** The mentor for this opportunity is Ken Forshay

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([forshay.ken@epa.gov](mailto:forshay.ken@epa.gov).) If you have questions about the nature of the research, please contact the mentor.

**Anticipated Appointment Start Date:** July 1, 2024. 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 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](mailto: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/experience:

- Previous research experiences in Wetlands, Ecosystem Services, Limnology, Biogeochemistry/Environmental Chemistry and/or Environmental Science/Engineering.
- Statistical Data Analysis.
- GIS and Modeling.
- Experience and interest working collaboratively as part of a research team is preferred.
- The candidate should be able to demonstrate excellent written and oral communication skills.
- Writing and organizing research.

**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**

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- **Computer, Information, and Data Sciences** ([2](#))
- **Earth and Geosciences** ([2](#))
- **Engineering** ([2](#))
- **Environmental and Marine Sciences** ([5](#))
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- **Other Non-Science & Engineering** ([1](#))
- **Social and Behavioral Sciences** ([3](#))