

Opportunity Title: USGS Postdoctoral or Doctoral Student: Vulnerability and Water Security

Opportunity Reference Code: DOI-USGS-2024-13

Organization U.S. Department of the Interior (DOI)

Reference Code DOI-USGS-2024-13

How to Apply *To submit your application, scroll to the bottom of this opportunity and click **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 recommendations. Your application will be considered incomplete, and will not be reviewed until one recommendation is submitted.

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

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Description **USGS Office/Lab and Location:** A research opportunity is currently available with the U.S. Geological Survey (USGS) at The Water Resources Mission Area (WMA).

The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems.

The Water Resources Mission Area (WMA) provides unbiased knowledge of the Nation's water resources to support human well-being, healthy ecosystems, economic prosperity, and anticipate and help resolve impending water-resource conflicts and emergencies. Within WMA, the Integrated Information Dissemination Division (IIDD) provides science products and data to end users across the nation. This interdisciplinary team has experimental and computational expertise needed to identify and address water resource problems, and to develop useful decision support tools.

Research Project: The ORISE fellowship will provide a rewarding educational opportunity, gaining experience in a federal science agency, fostering strong collaboration with an interdisciplinary science team, and conducting applied research on water security. The Water Resources Mission Area is conducting research to validate and map indicators of social vulnerability related to water insecurity in the Upper Colorado River Basin (UCRB). The ORISE participant will imbed in the science team identifying the context in which conditions of vulnerability contribute to



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water insecure outcomes, their relative importance across different water-use sectors, and statistical relationships between indicators measuring these vulnerability conditions.

Learning Objectives: The ORISE participant will gain skills and knowledge in:

- Interpreting qualitative data to identify themes associated with vulnerability and water security. This will include suitability assessments and thematic analyses of newspaper articles and focus groups to identify conditions of water insecurity, hazard exposure, and social vulnerability.
- Identifying latent variables and associations between vulnerability producing conditions through Structural Topic Models (STMs). This will entail statistical methods to identify common themes and associated key terms across the dataset.
- Studying the associations between physical and social factors of water insecurity. This will involve learning how to use geocoding pipelines and census-based data to map and model data on vulnerability, exposure, and impacts.

Mentor: The mentor for this opportunity is Oronde Drakes (odrakes@usgs.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for six months but may be extended upon recommendation of USGS and is contingent on the availability of funds.

Level of Participation: The appointment is full time or part time.

Participant Stipend: The participant will receive a monthly stipend based on education, experience, and full-/part-time status.

Citizenship Requirements: This opportunity is available to U.S. citizens only.

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 USGS. Participants do not become employees of USGS, 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: If you have questions about the application process, please email USGS@oraui.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a

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doctoral degree in the one of the relevant fields (e.g. Disaster Management, Anthropology, Sociology, Geography, or a related field). Degree must have been received within the past five years, or anticipated to be received by 5/30/2025.

Preferred skills:

- A field with emphasis on vulnerability, risk, water security, or qualitative analysis.
- Experience in qualitative coding.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 5/30/2025 12:00:00 AM.
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([1](#) 👁)
 - **Other Non-Science & Engineering** ([1](#) 👁)
 - **Social and Behavioral Sciences** ([30](#) 👁)
- **Age:** Must be 18 years of age