Opportunity Title: USGS Data Center Water Use
Opportunity Reference Code: DOI-USGS-2026-33

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

Reference Code DOI-USGS-2026-33

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click 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. 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. At least one recommendation must be submitted in order for the mentor to view your application.

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

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Description

***Applications will be reviewed on a rolling-basis.**

USGS Office/Lab and Location: A research opportunity is currently available with the U.S. Geological Survey (USGS) located in Baltimore, Maryland.

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.

Research Project: America's technology demand has led to a rapid expansion of data centers, with federal policies (Executive Order 14179) now accelerating site selection and permitting to meet the nation's growing needs for AI and cloud computing. It is the USGS role to characterize the water demands for an emerging water use that is important to support the nation's technology demands. Data center water demand varies by facility type, cooling technology, operational scenario, and regional climate conditions. The USGS has an opportunity to provide valuable information to policy makers, utility and data center operators who are considering important policy tradeoffs between advancements in AI systems and water resource or infrastructure limitations. This project seeks to inform the

public, policy makers, industry, and others shaping regional growth of data centers and, at a smaller scale, specific site selection of properties for development by providing broadly applicable data and information.

As the nation's leading agency in the reporting of water use, the USGS is uniquely positioned to assess the water demands of data centers and provide information for regional and national water resource management. This project specifically addresses the issue of direct water use by data centers for cooling at the site level (Scope 1 use) but does not address indirect water use associated with data center energy demands (Scope 2 use). We hope to provide methodologies for considering data center water use in context of regional to local-scale water sources. The analysis will include data center reliance on public supply vs self-supplied source and, if possible, differentiation groundwater vs surface water fractions for the source. The project will generate new datasets depicting the perception and resilience of the natural and engineered environments supporting the industry.

The overarching goal is the creation of broadly applicable datasets describing emerging water resource demands for the data center industry and placing these in the context of competing water uses, source water supplies, and infrastructure elasticity.

Data collection research combined with method development will make new data sets that inform Scope 1 water use by data center.

- Goal 1: National assessment of the water sources and source type supplying the data center industry by region.
- Goal 2: Advance the collective understanding of peer-reviewed scientific literature, industry reports, policy, media publications, and utility filings to define the uncertainties associated with data center industry growth.
- Goal 3: Develop a regional body partnerships to leverage multiple agency need for information on data center water demands.

- Objective 1: To evaluate data center water demands in context of national, regional or sub-regional water availability, water sources and competing water use sectors.
- Objective 2: To provide water resource information that can guide the design, operation, investment and regulation of Scope 1 data center water use. Leveraging machine learning, data–driven approaches to depict uncertainty derived from information related to data center water-use impacts..
- Objective 3: To establish a Water Mission Area-Water Science Center research collaboration with a regional entity currently addressing water issues – with focus on water use – to leverage multiple stakeholder interest, perspective, and capacities to meet policy needs.

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You will gain experience inquantitative analysis and organizational learning from project leads, including but not limited to:

- Digest, summarize, and cross-walk USGS cooperators' current consideration of data center water use as described in presentations, white papers, or other organizational information.
- Planning, preparing for and executing practice area virtual meetings on the subject of direct water use by data centers.
- Use databases such as SCOPUS or other academic literature database to compile large-scale dataset of academic abstracts.
- Utilize and refine existing python and R scripts to quality assure, process, and quantify large-scale text datasets, and conduct natural language processing workflows.
- Conduct a literature review of recent studies relevant to project goals, distribute to project team and organize Zotero library.
- GIS analysis of water resource assessment.

Learning Objectives: You will have the opportunity to collaborate closely with USGS scientists starting at the ground level on a project team on a rapidly emerging project related to water use form data centers, a topic which has received significant public and scientific attention in recent months and years. You will develop and refine coding and geospatial analysis skills, in a supported and mentored environment. Additionally, you will learn about USGS cooperator interest across the country on this rapidly developing national topic.

Mentor: The mentor for this opportunity is Catherine Christenson (cchristenson@usgs.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 15, 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 10 weeks, but may be renewed upon recommendation of DOI and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: Stipend rates may vary based on numerous factors, including opportunity, location, education, and experience. If you are interviewed, you can inquire about the exact stipend rate at that time and if selected, your appointment offer will include the monthly stipend rate.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak

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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@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in the one of the relevant fields. Degree must have been received within the past four years, or anticipated to be received by 6/1/2029.

Point of Contact Rachel

Eligibility Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 48 months or anticipated to be received by 6/1/2029 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (2)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (29)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (51)
  - **Mathematics and Statistics** (11)
  - **Physics** (16)
  - **Science & Engineering-related** (2)
  - **Social and Behavioral Sciences** (29)