

Opportunity Title: EPA Carbon Sequestration Fellowship
Opportunity Reference Code: EPA-REG5-2023-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-REG5-2023-01

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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 6/23/2023 3:00:00 PM Eastern Time Zone

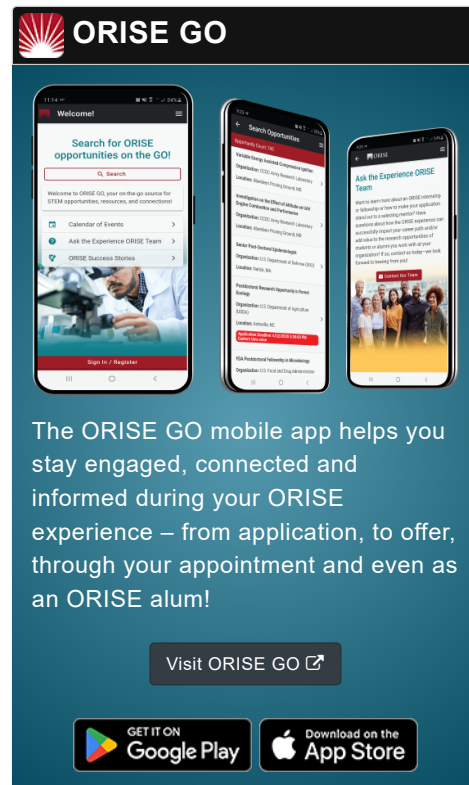
Description ***Applications may be reviewed on a rolling-basis and this posting could close before the deadline.** Click [here](#) for information about the selection process.

EPA Office/Lab and Location: A research opportunity is available at the U. S. Environmental Protection Agency, Region 5, Water Division, Permits Branch, Underground Injection Control Section, located in Chicago, Illinois. The Underground Injection Control Section is responsible for protecting underground sources of drinking water by regulation of injection wells, which inject fluids into the subsurface. This includes Class VI wells, which inject carbon dioxide to mitigate climate change.

Research Project: Assist the national effort to combat climate change as it relates to the permitting of carbon sequestration (Class VI) injection wells under the Safe Drinking Water Act. The selected participant will research, compile, analyze and summarize data related to Class VI permit applications and information related to the underground injection of hazardous wastes. This research is part of an inter-agency effort alongside state counterparts and other USEPA Regions' and Headquarters' UIC staff to characterize and analyze present Class VI permits and the potential future applications. This includes analysis of Class I and Class VI permit applications nationwide and No Migration Petitions and may include criteria development, reservoir modeling, and plugging methodology.

Learning Objectives:

- Determine the feasibility of various tracking/monitoring tools
- Perform multi-phase and geochemical modeling of the

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behavior of CO₂ and/or hazardous waste in subsurface formations in Region 5

- Identify weaknesses and risks associated with using self-insurance to demonstrate financial responsibility for Class VI projects, based on historical corporate failures
- Analyze statistical and market variability of plugging and abandonment, and corrective action costs
- Analyze the risks associated with enhanced oil recovery fields and Class VI sites in Region 5
- Research the potential for and environmental impacts of uncontrolled blowouts from Class VI projects, and evaluate emergency shut-off mechanisms
- Evaluate current methods of identifying potential leakage pathways and remediation options for Class VI scenarios
- Evaluate guidances and other supporting documents
- Evaluate regional technical, geological, and other project-related trends in applications and projects

Mentors: The mentor for questions for this opportunity is Andrew Greenhagen (greenhagen.andrew@epa.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: Summer 2023. All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

Appointment Length: The appointment may initially be for one year and may be renewed three to four 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.

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

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Questions: Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.REG@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 one of the relevant fields. Degree must have been received within five years of the appointment start date.

Practical work experience, research knowledge, or formal course work in one or more of the following is preferred: deep reservoir structural geology, well logging, reservoir engineering, geochemistry, well drilling and construction, ground water hydrology, petroleum engineering.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (1 )
 - **Computer, Information, and Data Sciences** (1 )
 - **Earth and Geosciences** (6 )
 - **Engineering** (12 )
 - **Environmental and Marine Sciences** (6 )
 - **Life Health and Medical Sciences** (1 )
 - **Mathematics and Statistics** (1 )
 - **Physics** (1 )