

Opportunity Title: EPA Carbon Sequestration fellowship

Opportunity Reference Code: EPA-REG5-WD-2024-02

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-REG5-WD-2024-02

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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 5/27/2024 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 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: Exciting opportunity to assist the Underground Injection Control program under the Safe Drinking Water Act. The selected participant may research, compile, analyze and summarize data related to Class I (industrial) & Class VI (carbon sequestration) permit applications and No Migration Petitions. This research is part of an inter-agency effort alongside state counterparts and other USEPA Regions' and Headquarters' UIC staff to characterize the specific geologic elements that lead to successful permit applications. This includes analysis of previously submitted permit applications nationwide; and previously accepted No Migration Petitions; and may include criteria development, reservoir modeling and plugging methodology.


Learning Objectives: Under the guidance of the mentor, research activities may include:


- Research the feasibility of various tracking/monitoring tools
- Gain experience in multi-phase and geochemical modeling of the behavior of CO₂ in subsurface formations in Region 5




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- 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
- Analysis of PFAS disposal into Class I injection wells
- Analysis on injection of hazardous waste into Class I injection wells and their associated No Migration Petitions

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 2024.** 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.

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.

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Qualifications The qualified candidate should be currently pursuing or have received a bachelor's; master's; or doctoral degree in one of the relevant fields. Degree must have been received before July 31, 2024 and within five years of the appointment start date.

Preferred skills/experience:

- Research knowledge or 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 • **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or anticipated to be received by 7/31/2024 11:59:00 PM.

- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([4](#) )
 - **Earth and Geosciences** ([7](#) )
 - **Engineering** ([14](#) )
 - **Environmental and Marine Sciences** ([8](#) )
 - **Life Health and Medical Sciences** ([3](#) )
 - **Mathematics and Statistics** ([6](#) )
 - **Physics** ([2](#) )
 - **Social and Behavioral Sciences** ([3](#) )

Affirmation I have lived in the United States for at least 36 out of the past 60 months. (36 months do not have to be consecutive.)