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Opportunity Title: EPA Research Opportunity Addressing Beneficial Use Impairments in Great Lakes Areas of Concern
Opportunity Reference Code: EPA-REG5-GLNPO-2022-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-REG5-GLNPO-2022-01

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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.

Description ***Applications may be reviewed on a rolling-basis.** Click **here** for information about the selection process.

EPA Office/Lab and Location: A research project training opportunity is available with the U.S. Environmental Protection Agency's (EPA) Great Lakes National Program Office (GLNPO) in Chicago, Illinois.

GLNPO coordinates U.S. efforts with Canada under the Great Lakes Water Quality Agreement (GLWQA) to restore and maintain the chemical, physical and biological integrity of the Great Lakes Basin Ecosystem. GLNPO brings together federal, state, tribal, local, and industry partners under the strategic framework of the Great Lakes Restoration Initiative (GLRI) to accomplish the objectives of GLRI action plan which in turn fulfills the aims of the GLWQA. For more information about the Great Lakes Monitoring programs, please visit: https://www.epa.gov/great-lakes-monitoring

Research Project: Research opportunities at GLNPO allow participation in many facets of planning, implementation, assessment, and reporting of Great Lakes basin monitoring, restoration, and remediation. The description below contains partial, but not complete, lists of developmental activities each project may include:

The Area of Concern (AOC) Annex of the GLWQA and the Great Lakes Restoration Initiative call for cleaning up Great Lakes AOCs, which involves implementing projects to address Beneficial Use Impairments (BUIs). Projects include contaminated sediment remediation, habitat restoration, beach health, local and state-wide AOC BUI studies/analyses, and other actions to address BUIs. In addition, once actions have been taken to clean up and restore sites, verification monitoring is conducted to determine whether the desired restoration goals have been achieved.

Ensuring that EPA uses environmental data to support its decisions is

critical to both effective implementation of those projects but also appropriate reporting on progress. Restoring Great Lakes AOCs is one of the top priorities of the GLRI.

In this project, the ORISE participant will learn about the AOC program, help with assessing and reporting on various aspects of the AOC program, including: BUI removals, reports to Congress and binational reporting on program progress, AOC website updates, and helping with AOC conference and other aspects of the program. In addition, the ORISE participant will learn about the AOC restoration process from start to finish, and will also learn from interacting with multiple program partners within EPA and other federal agencies, State agencies, and local community groups that work on each AOC. The participant will also learn about how quality assurance of the data supports the process.

Additionally, the participant selected within GLNPO is required to be available to participate in the following:

- **Great Lakes Sampling aboard the R/V Lake Guardian.** Since 1983, GLNPO has monitored the chemistry and biology of the Great Lakes using the 180-foot research vessel R/V *Lake Guardian*. Water samples are collected and analyzed for nutrients and standard limnological parameters. Phytoplankton, zooplankton and benthos samples are collected and analyzed to assess the status of the lower food web. Opportunities will be available to be involved in: measuring water quality parameters, preparing samples for nutrient analysis, collecting and reviewing sensor data, statistical analysis of data, conducting outreach, and preparing reports. Note: participation in field sampling requires living onboard the R/V *Lake Guardian* from a few days up to several weeks on any or all of the Great Lakes, as well as physical abilities and stamina (to be able to stand and navigate throughout the ship during inclement weather).

Learning Objectives:

- Develop knowledge about the many complex elements of the Great Lakes ecosystem
- Increase skills in data analysis and reporting
- Learn the many facets required to plan and implement a complex project
- Develop skills and responsibilities associated with being part of a team potentially consisting of other federal, state, tribal, and even international partners
- Develop skills to coordinate scientific projects
- Obtain professional contacts throughout the Great Lakes scientific community
- Increase field methodology skills
- Increase personal sense of professional responsibility

Mentor(s): The mentor for questions about this opportunity is Ben Alsip (Alsip.benjamin@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

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Anticipated Appointment Start Date: June 2022. 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 up to three 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. Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. 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.

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

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 have received a bachelor's or master's degree in environmental science, limnology, biology, chemistry, natural resources, environmental engineering, or related fields within five years of the starting date, or completion of all requirements for the degree should be expected prior to the start date.

Ability to participate in occasional travel from a few days up to several weeks on any or all of the Great Lakes is preferred. Detail-oriented applicants who are able to do high-quality reviews are also preferred.

Preferred skills:

- Experience in field work (biological and chemical sampling of lakes)
- Basic knowledge of the Great Lakes basin ecosystems

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- Demonstrated technical writing skills
- Experience communicating technical topics to a non-technical audience
- Independent research experience (e.g., undergraduate or graduate research project)
- Field sampling and analysis in freshwater and/or marine environments
- GIS (including scripting, Python)
- Familiarity with data processing software (e.g., R, Matlab)
- Database management
- Proficient in Excel
- Spreadsheet manipulation

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 8/31/2022 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (9)
  - **Computer, Information, and Data Sciences** (4)
  - **Earth and Geosciences** (21)
  - **Engineering** (2)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (17)
  - **Mathematics and Statistics** (1)
  - **Physics** (1)
  - **Social and Behavioral Sciences** (1)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).