

**Opportunity Title:** Protecting and Restoring Great Lakes Ecosystem Health

**Opportunity Reference Code:** EPA-REG-5-GLNPO-2018-01

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-REG-5-GLNPO-2018-01

**How to 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 references

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

If you have questions, send an email to [EPArpp@orau.org](mailto:EPArpp@orau.org). Please include the reference code for this opportunity in your email.

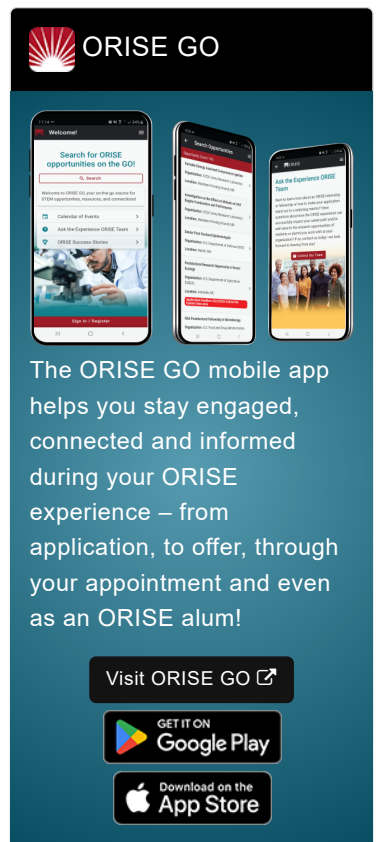
**Application Deadline** 4/16/2018 11:10:00 AM Eastern Time Zone

**Description** Postgraduate research project training opportunities are available with the U.S. Environmental Protection Agency's (EPA) Great Lakes National Program Office (GLNPO) in Chicago, Illinois.

The Great Lakes Water Quality Agreement (GLWQA) between the United States and Canada provides a framework for the two countries to restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes basin ecosystem. As the U.S. Office responsible for implementing many of the provisions of the GLWQA, GLNPO has a fundamental role to collect and disseminate data on the physical, chemical and biological condition of the Great Lakes.


To do this, GLNPO conducts long-term monitoring programs on water quality and the lower foodweb (phytoplankton, zooplankton, and benthic communities) of the Great Lakes, exploiting the capabilities of the 180 ft. research vessel R/V *Lake Guardian* and its specialized equipment. GLNPO also manages three contaminant monitoring programs: the Great Lakes Fish Contaminants Monitoring and Surveillance Program (GLFMSP), the Integrated Atmospheric Deposition Network (IADN), and the Great Lakes Sediment Surveillance Program (GLSSP). GLNPO also leads the efforts under Annex 10 of the GLWQA. These efforts include reporting on ecosystem indicator status and trends through the State of the Great Lakes Reports and planning and implementing intensive field surveys through the Cooperative Science and Monitoring Initiative (CSMI).


The specific activities in which GLNPO engages in are determined in large measure by the data and information needed to support the GLWQA, Lakewide Action and Management Plans, and other specific needs of our


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federal, state, and tribal partners to implement the Great Lakes Restoration Initiative (GLRI).

For example, Annex 1 of the GLWQA calls for cleaning up Great Lakes Areas of Concern (AOC), which involves implementing projects to address Beneficial Use Impairments (BUIs). The types of projects include contaminated sediment remediation, habitat restoration, beach health, local AOC BUI studies/analyses and other state-wide BUI analyses/studies, 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. Restoring the Great Lakes AOC is one of the top priorities of the GLRI and the GLWQA.

Another top priority of the GLWQA and the GLRI is to reduce nutrient runoff which fuels harmful and nuisance algal growth in multiple areas of the Great Lakes. Harmful algal blooms (HABs) can threaten drinking water supplies and cause beach closings, oxygen depletion in off-shore waters, and other water quality impairments. Under Annex 4 of the GLWQA, GLNPO is leading a collaborative effort with state, provincial and federal environmental and agricultural agencies in the US and Canada to significantly reduce phosphorus loads to prevent HABs and hypoxia in Lake Erie. For more information, see <https://www.epa.gov/glwqa/us-draft-domestic-action-plan-lake-erie>.

Research opportunities at GLNPO allow participants to participate in many facets of planning, implementation, monitoring, assessment and reporting of Great Lakes basin ecosystem components. Engaging in more than one project is encouraged, aligning the knowledge and interests of a participant with particular developmental opportunities. GLNPO projects that the participant may be involved in may include, but are not limited to, 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 research vessel R/V *Lake Guardian*. Typically, water samples are collected and analyzed for nutrients and standard limnological parameters; zooplankton tows, benthos (Ponar) grabs, and phytoplankton composites are collected and analyzed for their respective biological components; and assessments include statistical analysis and generation of reports. 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).*

**GLWQA Annex 4.** This project involves conducting literature reviews and analyses that support evaluation of nutrient targets and Lake Ecosystem Objectives for nutrients, reviewing and analyzing nutrient load estimates,

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reviewing and summarizing information from external partners on status of implementation of specific projects and activities as specified in domestic action plans, and developing brief progress reports and factsheets to highlight significant accomplishments and milestones achieved in the U.S.

**Great Lakes Monitoring Program.** This project involves conducting data review, statistical data analysis, laboratory and sampling site audits, drafting technical reports, and updating websites, as well as researching and writing content for fact sheets and other media to communicate technical topics to the public.

**State of the Great Lakes Reporting.** This project involves participating with U.S. and Canadian SOLEC organizers to ensure the next indicator report will meet the high standards of previous reports. Project elements that the participant may be involved in could include scientific literature searches and identification of sources of environmental data, development of Great Lakes environmental indicators and indices, collection and analysis of environmental data, preparation of reports on environmental indicators, preparation of oral and visual presentations, and participation in pre- and post-conference activities.

During the appointment, the participant will:

- 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 for being part of an international team
- 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

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and EPA.

The appointment is full time for one year and may be renewed upon recommendation of EPA and contingent on the availability of funds. The participant will receive a monthly stipend. Funding may be made available to reimburse the participant's travel expenses to present the results of his/her research at scientific conferences. No funding will be made available to cover travel costs for pre-appointment visits, relocation costs, tuition and fees, or participant's health insurance. The participant must show proof of health and medical insurance. **The participant does not become an EPA employee.**

**Qualifications** Applicants should have received a bachelor's or master's degree in

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limnology, environmental science, biogy, 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. Basic knowledge of the Great Lakes basin ecosystems and experience in field work (biological and chemical sampling of lakes) are also desired. Applicants should be able to participate in occasional overnight travel.

- Eligibility**
- **Citizenship:** LPR or U.S. Citizen
- Requirements**
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([2](#))
    - **Earth and Geosciences** ([2](#))
    - **Engineering** ([4](#))
    - **Environmental and Marine Sciences** ([14](#))
    - **Life Health and Medical Sciences** ([5](#))