Opportunity Title: EPA Great Lakes Environmental Survey Internship
Opportunity Reference Code: EPA-ORD-CCTE-GLTED-2020-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CCTE-GLTED-2020-01

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.

Application Deadline 9/3/2020 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: Two research opportunities are available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Computational Toxicology and Exposure (CCTE), Great Lakes Toxicology & Ecology Division (GLTED) located in Duluth, Minnesota.

Research Project: Selected participants will be mentored by and collaborate with a team of EPA scientists on projects addressing survey methods and indicators of ecological conditions in the Great Lakes.

The Great Lakes provide critical ecosystem services to millions of people. These services depend on high quality water and biological communities that are threatened by environmental stressors including harmful algal blooms (HABs), aquatic invasive species (AIS), and nutrient loading. EPA uses a variety of sampling designs and indicators in broad-scale surveys to track how changes in environmental condition can alter the delivery of ecosystem services. This research applies conventional limnological, often ship-based, sampling approaches and state-of-the-art technologies such as DNA-based monitoring and advanced sensor arrays. The research experience will be highly collaborative through partnerships with EPA's National Coastal Condition Assessment (NCCA), the Coordinated Science and Monitoring Initiative (CSMI), and Aquatic Invasive Species (AIS) surveys. For example, CSMI data are available from Lake Erie in 2019 that focused on factors affecting HABs formation. In 2020, CSMI will focus on the food web of Lake Michigan. The NCCA 2020 will sample all the lakes

with an emphasis on Green Bay and islands' nearshore waters of Lake Michigan. AIS survey work will continue work in coastal waters and ports to develop genetic (DNA-based) tools for detecting new species and evaluating the composition of biological communities.

With guidance from the mentor, the research participants may be involved in any or all of the following training activities:

- Evaluating and comparing the efficacy of survey designs and ecological indicators for the assessment and management of the Great Lakes.
- Developing and applying innovative models, survey designs, and/or remote sensing and genetic indicators to understand the risks of invasive species and/or HABs.
- Developing statistical or numerical models describing the sources, circulation, and disposition of nutrients in the lakes.
- Designing work-flows that automate and standardize the collection, processing, and management of data from remote sensing platforms, such as autonomous underwater vehicles, satellites, towed sensor arrays, video systems, and moored in-situ sensors.
- Developing and implementing data archiving and storage systems for large collaborative multi-player research programs.
- Presenting research results at regional and national conferences and workshops.
- Contributing to the preparation of peer-reviewed journal articles and disseminating research results to project partners and stakeholders.

Learning Objectives: The research participants will be trained in survey design and the use of conventional and innovative indicators of environmental assessment. With that training, the research participants will contribute to the development of innovative uses of models, remote sensing and genetic approaches for limnological assessments. The research participants will become familiar with environmental research being done by EPA and its partner agencies that contributes to the management of the Great Lakes. The research participants will develop skills in planning, conducting, and communicating scientific information addressing significant real-world environmental problems.

Mentor(s): The mentor for this opportunity is David Bolgrien (bolgrien.dave@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Summer/Fall 2020. All start dates are flexible and vary depending on numerous factors. Click **here** for detailed information about start dates.

Appointment Length: The appointment will 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

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

Qualifications

The qualified candidate should have received a master's degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by September 2020. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Previous research experience or independent studies, beyond lab-oriented course work alone
- Experience with communicating scientific information to technical and non-technical audiences
- Experience and/or coursework involving statistical/geospatial analysis, data management, bioinformatics, and/or ecological modeling
- Experience conducting limnological or oceanographic field work
- Experience working with aquatic organisms such as fish, crustaceans, insects, plants, or algae, including identifying and counting them and conducting population or community analyses of them
- Experience and course work in analytical chemistry instrumentation and extraction methods

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree received within the last 60 months or anticipated to be received by 9/30/2020 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (4 👁)
  - **Computer, Information, and Data Sciences** (2 👁)
  - **Earth and Geosciences** (2 👁)
  - **Engineering** (1 👁)
  - **Environmental and Marine Sciences** (10 👁)
  - **Life Health and Medical Sciences** (11 👁)
  - **Mathematics and Statistics** (2 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).