

Opportunity Title: USGS Fellowship in Improving Aquatic Remote Sensing of Freshwater Harmful Algal Blooms

Opportunity Reference Code: DOI-USGS-2024-04

Organization: U.S. Department of the Interior (DOI)

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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 package 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. Click [Here](#) for detailed information about acceptable transcripts.
- A current resume/CV
- Two educational or professional recommendations.

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

Application Deadline: 5/20/2024 3:00:00 PM Eastern Time Zone

Description: **USGS Office/Lab and Location:** A research opportunity is currently available with the U.S. Geological Survey (USGS) located in Sacramento, California.

The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems.

The mission of the USGS Biogeochemistry Group at the California Water Science Center is to provide data and information biogeochemical processes and aquatic food-webs to local, state, and Federal agencies and entities to improve the scientific understanding and management of aquatic ecosystems and water resources in California.

Webpage: <https://www.usgs.gov/centers/california-water-science-center/science/biogeochemistry-group>

Research Project Goals

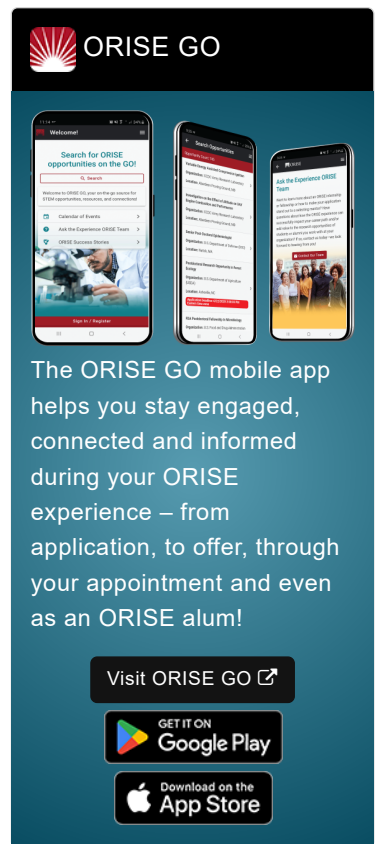
- This is a research project on aquatic remote sensing for understanding freshwater harmful algal blooms (HABs).
- The research goals are to improve the accuracy of remote sensing algorithms for harmful algal blooms in the Sacramento-San Joaquin Delta (California).
- The project will involve 1) collecting field-data for “ground truthing” and validation of remote sensing algorithms for HABs and, 2) improving hyperspectral algorithms for HABs detection and tracking.

Learning Objectives:

- The research opportunity will include a combination of field-research





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and data-analysis. The participant will join a research team of over 30 scientists and technicians and learn how to function effectively within a research team.

- Learning and research opportunities include:
 - Using hyperspectral above-water radiometers to collect field-data in the Delta during boat-based field campaigns.
 - Collecting field samples or use field-instruments for measuring HABs-relevant parameters, such as chlorophyll a.
 - Participating in assembling data collected from the Sentinel-2 Multi Spectral Imaging sensor and from the AVIRIS3 sensors. Once data is assembled, the participant will assist in data-analysis steps such as atmospheric corrections, applying different HABs-related algorithms, and performing statistical analyses on the data.

Mentor: The mentor for this opportunity is Keith Bouma-Gregson (kbouma-gregson@usgs.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: May 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 15 weeks, but may be renewed upon recommendation of USGS and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: Stipend rates may vary based on numerous factors including education and experience. If you are interviewed, you can inquire about the exact stipend rate at that time and if selected, your appointment offer will include the monthly stipend rate.

Citizenship Requirements: This opportunity is available to U.S. citizens only.

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 USGS. Participants do not become employees of USGS, 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: If you have questions about the application process please email USGS@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing a doctoral degree in the one of the relevant fields.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Currently pursuing a Doctoral Degree.

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- **Discipline(s):**

- **Earth and Geosciences** ([1](#) )
- **Environmental and Marine Sciences** ([14](#) )