

Opportunity Title: Biological Science Research
Opportunity Reference Code: ERDC-EL-2021-0009

Organization U.S. Department of Defense (DOD)

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How to Apply Components of the online application are as follows:

- Profile Information
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - 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.](#)
- 2 Recommendation(s)

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blacked out, blackened out, made illegible, etc.) prior to uploading into the application system.

If you have questions, send an email to USACE@orise.orau.gov. Please list the reference code of this opportunity in the subject line of the email.

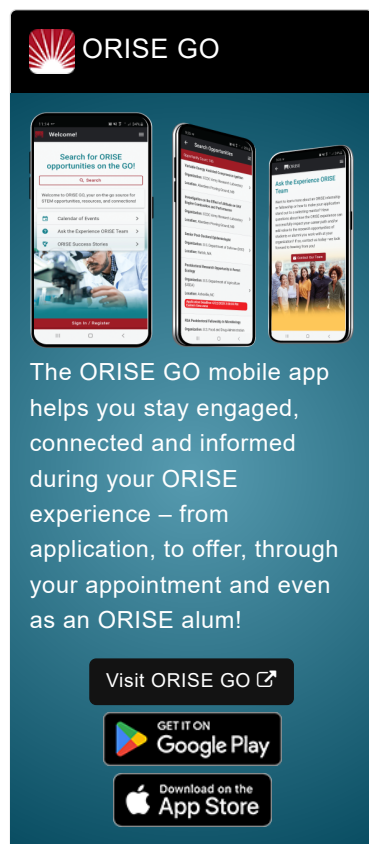
Letter of Recommendation: While a letter of recommendation is not required to be considered, applicants are required to provide contact information for one recommendation in order to submit the application. Applicants are encouraged to request a letter of recommendation before submission as this may help reviewers have a better understanding of the applicant's qualifications and interests. If selected, a letter of recommendation must be submitted on your behalf upon acceptance of the appointment.

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

Description The Environmental Laboratory (EL) provides relevant, value-added technology supporting the environmental mission of the US Army Corps of Engineers, the Army, the Department of Defense (DoD), and the Nation. Headquartered in Vicksburg, Mississippi, the EL's interdisciplinary staff of over 220 engineers, scientists, technicians, and support personnel plans and executes all phases of the technology development process, from basic research to field implementation to commercialization. The EL staff consists of problem solvers who use research, development, experimentation, special studies, and technical support to address the needs of national and international business development partners. Partnering with Federal and State agencies, academia, and the private sector, the EL uses its distinctive technical capabilities to resolve complex, multi-disciplinary environmental sustainability problems.


Internship opportunity available with the US Army Engineer Research and Development Center, Environmental Laboratory, Environmental Genomics and Systems Biology Team in developing novel biotechnologies for detecting and mitigating cyanobacteria-associated harmful algal blooms (cyanoHABs).


Under the guidance of a mentor, the selected candidate will gain experience in multidisciplinary research activities of environmental science and technology including, but not limited to, molecular




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biology, genetic engineering, environmental field sampling, nano material synthesis and characterization, genomics, DNA sequencing, data collection and data analytics. The ideal candidate will have research experience, demonstrate an ability to participate in an interdisciplinary team environment, and have a working knowledge and hands-on experience of genetics and basic molecular biology lab techniques (e.g., PCR, western/northern/southern blotting, genetic sequencing, ELISA). Additionally, a Master's degree in biochemistry or biomedicine is desirable.

Projects include rapid, cost-effective and near real-time detection of cyanobacteria genera in freshwater samples, gene silencing-based nanobiotechnology for cyanoHABs control, and the use of cyanophage for cyanobacteria treatment. Specific research activities include: (1) Growing and passaging pure cyanobacterial cultures; (2) Morphological identification and enumeration of cyanobacterial cells; (3) Isolation of specific cyanobacterial species from field water samples; (4) Field sampling of cyanoHABs; (5) Quantitative PCR assays for gene expression analysis; and (6) Mesocosm field experiment setup.

Length of Appointment

This appointment is a full-time twelve month research appointment, with the possibility to be renewed for additional research periods. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

Participant Benefits

Participants will receive a stipend to be determined by **USACE**. Stipends are typically based on the participant's academic standing, discipline, experience, and research facility location. Other benefits may include the following:

- Health Insurance Supplement. *Participants are eligible to purchase health insurance through ORISE.*
- Relocation Allowance
- Training and Travel Allowance

Nature of Appointment

The participant will not enter into an employee/employer relationship with ORISE, ORAU, DOD, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

Qualifications Pursuing or recent graduate with at least a Bachelor's degree in a biological science discipline with a minimum of 3.0 GPA.

A Master's degree in biochemistry or biomedicine is desirable.

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- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Computer, Information, and Data Sciences** ([17](#))
 - **Earth and Geosciences** ([21](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))
 - **Life Health and Medical Sciences** ([45](#))
 - **Mathematics and Statistics** ([10](#))
 - **Other Non-Science & Engineering** ([1](#))
 - **Physics** ([16](#))
 - **Social and Behavioral Sciences** ([17](#))
 - **Age:** Must be 18 years of age