Opportunity Title: Environmental DNA (eDNA) and Molecular Ecology - USACE Environmental Laboratory
Opportunity Reference Code: ERDC-EL-2023-0013

Organization U.S. Department of Defense (DOD)

Reference Code ERDC-EL-2023-0013

How to Apply Click on *Apply* now to start your application.

Description

The Environmental Laboratory (EL) is one of the seven laboratories of U.S. Army Engineer Research and Development Center (USACE-ERDC), which is the Army Corps of Engineers' integrated research and development (R&D) organization. EL provides solutions to environmental challenges for the U.S. Army, the Department of Defense and the Nation through environmental science and engineering research and development. Researchers in EL conduct research in ecosystem science and technology, environmental resiliency, environmental sensing, ecological modeling and forecasting, risk and decision science, environmentally sustainable material, systems biology, climate change, computational chemistry, environmental chemistry and environmental security.

What will I be doing?

Under the guidance of a mentor, you will be part of a team of scientists focused on the use of molecular genetics to better study, monitor, and manage environmental systems. Research ranges from population genetics to molecular scatology, but may expand as opportunities arise. Studies based on environmental DNA (eDNA), environmental RNA (eRNA), including eDNA metabarcoding and eRNA sequencing, are important areas of research and development. The development of eDNA- or eRNA-based equivalents to community biological indices for terrestrial and aquatic systems, detection tools for animal and plant hazards in rugged environments, and capabilities for determining the sources of soil or water samples are all likely project areas. As a team, we are also interested in the merging of eDNA and eRNA capabilities with unmanned, robotic, mobile, and/or autonomous platforms.

You will have the opportunity to participate in field site reconnaissance and sample collection, optimization and execution of molecular genetic lab protocols, and statistical and bioinformatic processing and analysis of data. Under the direction of mentor, you will have the opportunity to research with a team to revise and finalize research tasks and study designs. Presentation of project details and outcomes with program managers, user groups, and scientific audiences are all important components of this internship, as is co-authorship on presentations and scientific papers.

Why should I apply?

This fellowship provides the opportunity to independently utilize your skills and engage with experts in innovative ideas to move the proposed research forward.

Where will I be located? Location Varies

What is the anticipated start date?

Exact start dates will be determined at the time of selection and in coordination with the selected candidate.

What is the appointment length?

This appointment is a full-time twelve-month research appointment. Appointments may be

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extended depending on funding availability, project assignment, program rules, and availability of the participant.

What are the benefits?

You will receive a stipend to be determined by ERDC-EL. Stipends are typically based on a 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

About ORISE

This program, administered by Oak Ridge Associated Universities (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 DoD. Participants do not enter into an employee/employer relationship with ORISE, ORAU, DoD or any other office or agency. Instead, you will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE. For more information, visit the ORISE Research Participation Program at the U.S. Department of Defense.

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!

Qualifications

PhD or pursuing a PhD in biology, genetics, ecology, environmental sciences, or a related field.

Required Skills:

- Familiar with basic data recording and processing, and presentation software (e.g., Excel, Numbers. PowerPoint)
- Background in environmental molecular genetics
- Developed critical thinking skills
- Field work in rugged environments and varied weather conditions (heat, cold)
- Ability to participate independently as well as in teams
- Demonstrated organizational skills and is task oriented
- Strong written, oral, and electronic communication skills

Desired Skills:

- Prior experience in eDNA sample collection
- Prior experience with common lab techniques, including DNA extraction from field-collected samples, PCR, qPCR, Sanger sequencing, Illumina platform next generation sequencing
- Prior experience in DNA metabarcoding and bioinformatics
- Basic statistical analyses and associated use of statistical software (e.g., SAS, R)

Application Requirements

A complete application consists of:

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- Zintellect Profile
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an official 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.
- One recommendation. Your application will be considered incomplete and will not be reviewed until one recommendation is submitted. We encourage you to contact your recommender(s) as soon as you start your application to ensure they are able to complete the recommendation form and to let them know to expect a message from Zintellect. Recommenders will be asked to rate your scientific capabilities, personal characteristics, and describe how they know you. You can always log back in to your Zintellect account and check the status of your application.

Submitted documents must have all social security numbers, student identification numbers, and/or dates of birth removed (blanked out, blackened out, made illegible, etc.) prior to uploading into the application system. All documents must be in English or include an official English translation. 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. Please understand that ORISE does not review applications or select applicants; selections are made by the sponsoring agency identified on this opportunity. All application materials should be submitted via the “Apply” button at the bottom of this opportunity listing. Please do not send application materials to the email address above.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 12/29/2023 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Earth and Geosciences** (4 👁)
  - **Engineering** (8 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (48 👁)
  - **Mathematics and Statistics** (1 👁)
- **Age:** Must be 18 years of age
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).