Opportunity Title: Coastal Vulnerability Assessment Fellow
Opportunity Reference Code: ERDC-EL-2021-0022

Organization U.S. Department of Defense (DOD)

Reference Code ERDC-EL-2021-0022

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 participate in a coastal research project focused on developing stochastic assessments of coastal water levels and erosion risk under past, present and future climates. As the selected candidate, you will conduct research and gain experience that includes the following:

(1) Develop, calibrate, and implement physics-based coastal models such Delft-3D, SWAN, X-Beach, etc.

(2) Process results from physics-based coastal models to design machine learning based surrogate models.

(3) Design sampling strategies for the hybrid statistical-dynamical modeling framework to evaluate large ensembles of synthetically generated weather, wave, and total water level scenarios along select areas of the U.S. West Coast.

(4) Evaluate the sensitivity of performance metrics related to flooding, erosion, hydroperiod, salinity, water quality, etc., at select areas of the US West Coast.

It is expected that this research will lead to one or more published peer reviewed journal articles that will be co-authored by you and the mentor as well as other products.

Where will I be located? Location varies

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.

What is the anticipated start date?

ERDC-EL is ready to make an appointment. Exact start date will be determined at the time of selection and in coordination with the selected
candidate.

What are the benefits?

You will receive a stipend to be determined by ERDC-EL. 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

This ORISE appointment is a full-time twelve month opportunity. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

Nature of the Appointment

You will 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.

Qualifications

You should have received or currently pursuing a doctoral degree in Coastal Engineering, Oceanography, Coastal Geology, or related field.

Useful skills that you can bring to this opportunity include experience working with physics-based models; experience with statistical analysis of large datasets; familiarity with stochastic generators; experience programming in the Python computer language; strong technical writing skills.

A complete application consists of:

- Zintellect profile
- Educational and Employment History
- Essay Questions - The application includes questions specific to the opportunity
- 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.
- Current Resume/CV

One (1) Recommendation - Applicants are required to provide contact information for at least one recommendation. You are encouraged to request a recommendation from a professional who can speak to your abilities and potential for success as well as your scientific capabilities and personal characteristics. Recommendation requests must be sent through the Zintellect application system. Recommenders will be asked to complete a recommendation in Zintellect. Letters of recommendation submitted via email will not be accepted.

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 ERDC-EL-2021- 0022 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.

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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!

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 12/30/2022 12:00:00 AM.
- **Discipline(s):**
  - **Engineering** (27 👁)
  - **Physics** (16 👁)
- **Age:** Must be 18 years of age