

Opportunity Title: Coastal Engineering - Faculty Opportunity Reference Code: ERDC-CHL-2023-0006-F

Organization U.S. Department of Defense (DOD)

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

Description The U.S. Army Engineer Research and Development Center's Coastal & Hydraulics Laboratory (CHL) performs research on ocean, estuarine, riverine, and watershed systems in support of the U.S. Army Corps of Engineers (USACE) and the Department of Defense (DOD) Task Force in support of the Ocean Commission. A multi-disciplinary team of scientists, engineers, and support personnel work in CHL's internationally known, unique facilities. This team has developed state-of-the-art experimental and computational models for solving water resource problems worldwide. Physical facilities of approximately 1.7 million square feet and high-performance computing facilities at the DOD Supercomputing Research Center (http://www.erdc.hpc.mil) are the basic infrastructure for producing cutting-edge products for successful coastal, inland water resources, and navigation management. CHL work, although primarily in support of the DOD and the Corp's districts, also interfaces with other federal, state and local agencies, academia, conservation groups, and the general public, as appropriate. For more information about USACE-ERDC-CHL, please visit https://www.erdc.usace.army.mil/Locations/CHL/.

What will I be doing?

This project will be an enriching educational opportunity for you and your students to learn and collaborate with the U.S. Army Corps of Engineers' Coastal Hazards Group (CHG). This collaboration aims to further research and enhance the Coastal Hazards System (CHS), a multi-agency initiative that operates on a national scale, quantifying coastal storm hazards across all U.S. coastlines, and assessing the risk of compounded coastal flooding. The CHS system's core is its utilization of probabilistic analysis and a machine learning framework, providing a robust platform for learning and research.

This unique educational journey has several learning objectives that will be documented in a comprehensive report upon the completion of the fellowship:

1.) Enhancing probabilistic hurricane hazards analysis methods. The research will involve learning about and characterizing current and future climate-induced hurricane frequency and intensity changes.

2.) Evaluating and advancing hurricane vortex (wind) models. This will entail comparing methods, governing equations, inputs, and outputs of different vortex models. Collaborative discussions and research will identify opportunities for improvement.

3.) Understanding the coupling of hurricane vortex models and hurricane rainfall models. This will involve researching how wind and pressure simulations from vortex models impact the prediction of parametric rainfall models.

Why should I apply?

This faculty 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 stat date?

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

What is the length of the appointment?

This ORISE appointment is a part-time twelve-month opportunity. Appointment may be 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-CHL. 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

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 <u>ORISE Research Participation Program at the U.S.</u> Department of Defense.

Qualifications A current full-time faculty member at an accredited two or four-year institution of higher education with an earned Ph.D. in Engineering with a strong background in coastal, wind, hazard and risk, and modeling of hurricane wind and pressure fields. Knowledge of hurricane climatology and programing languages are also required.

A complete application consists of:

- · Zintellect profile
- Educational and Employment History
- Curriculum Vitae (PDF)
- Salary Certification from your university

Submitted documents must have all social security numbers, identification numbers, and/or dates of birth removed (blanked 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. All documents must be in English or include an official English translation. 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



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this opportunity listing. Please do not send application materials to the email address above.

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Point of Contact Debbie

- Eligibility Degree: Doctoral Degree.
- Requirements Discipline(s):
 - Earth and Geosciences (21.)
 - Engineering (<u>27</u> ^(©))
 - Environmental and Marine Sciences (14)
 - Life Health and Medical Sciences (48.)
 - Age: Must be 18 years of age