

**Opportunity Title:** Visualization of Coastal Data - Master's or Doctoral Degree

**Opportunity Reference Code:** ERDC-CHL-2022-0001

**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.erdchpc.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. The Research Participation Program for USACE-ERDC-CHL provides opportunities to participate in new and on-going applied research and development projects. Research projects range from design guidance to three-dimensional computational models. Focus is placed on inland and coastal navigation, military logistics over the shore, dredging, flood control, storm and erosion protection, waterway restoration, fish passage, hydro-environmental modeling, water/land management, and other water and sediment-related issues facing the nation. For more information about USACE-ERDC-CHL, please visit <https://www.erdchpc.usace.army.mil/Locations/CHL/>.

#### What will I be doing?

Under the guidance of a mentor, you will conduct applied research on the visualization of coastal imagery data across USACE districts. Low cost cameras (or other camera/imagery platforms) are used to collect data about coastal projects and established routines capture quantitative coastal metrics from these data. This research will focus on not only the delivery of the imagery, but also the quantitative metrics that have been identified from the imagery, which will work as part of a broader team.

Similarly, the research will develop a complimentary data delivery and visualization mechanism for model results that are co-located and co-timed to the imagery. Similar to the imagery, you will not be responsible for generating the model results or processing routines, but focus specifically on the delivery of the data in a complimentary way to the imagery. This may involve a parallel or complimentary web presence. The research may involve developing/modifying existing automation routines for pushing data across a work flow and plotting or visualization techniques. You will contribute to assessing these research goals under the guidance of mentors at the US Army Engineer Research and Development Centers' Field Research Facility.

#### Why should I apply?

This fellowship provides the opportunity to utilize your skills and learn from experts in coastal imagery, coastal numerical models, and data standards and visualization techniques.

**Where will I be located?** Duck, NC

**What is the anticipated start 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 candidates.

**What is the length of the appointment?**

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.

**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

**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 or soon receive a master or doctoral degree in the Earth Sciences, Oceanography, Coastal Engineering, Civil Engineering, or a related field of research.

You should have previously researched in one or more of the following areas:

- Sediment transport , geomorphology, coastal processes, hydrodynamics

You should have skills in the following areas:

- Scientific programming experience with Python, Matlab, R, and/or Julia
- ArcGIS and supplementary tools
- Excellent oral and written communication skills
- Ability to research productively both independently and as part of a diverse team

A complete application consists of:

- Zintellect profile
- Essay Questions - The application includes questions specific to the opportunity
- Academic Records - 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.
- One (1) 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 (blacked out, blackened out, made illegible, etc.) prior to uploading into the

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application system. If you have questions, send an email to [usace@orise.orau.gov](mailto: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 this opportunity listing. Please do not send application materials to the email address above.

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- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 9/30/2022 11:59:00 PM.
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([12](#) )
    - **Communications and Graphics Design** ([1](#) )
    - **Computer, Information, and Data Sciences** ([17](#) )
    - **Earth and Geosciences** ([21](#) )
    - **Engineering** ([27](#) )
    - **Environmental and Marine Sciences** ([14](#) )
    - **Mathematics and Statistics** ([11](#) )
    - **Physics** ([16](#) )
  - **Age:** Must be 18 years of age