

Opportunity Title: Carbon Cycle Ecologist - Postgraduate

Opportunity Reference Code: ERDC-CERL-2022-0002

Organization U.S. Department of Defense (DOD)

Reference Code ERDC-CERL-2022-0002

How to Apply [Click on APPLY now to start your application.](#)

Description The U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) Construction Engineering Research Laboratory (CERL) develops and infuses innovative technologies to provide excellent facilities and realistic training lands for the Department of Defense, the U.S. Army and many other customers while also supporting ERDC's research and development mission in geospatial research and engineering, military engineering, and civil works.

What will I be doing?

Under the guidance of mentors, your research will be focused on building a carbon sequestration model of all Department of Defense lands in the United States. The research project will involve developing a model framework utilizing code from existing open-source models, collaborations with model experts from a variety of universities, agencies, and entities across the country, and creating new models through analysis and incorporation of new data sets and sources.

Focus areas will include:

- Refining and implementing process-based and statistical models of carbon change in soils and/or forest biomass across diverse ecosystems and land uses at various levels of accuracy and precision
- Identifying existing model components for inclusion in comprehensive model framework(s) with focus on uncertainty reductions and diverse land use predictions
- Refining and verifying assessment methods of carbon estimation, and evaluate changes under contrasting management practices
- Analyzing large, diverse geospatial and field collected data sets using various tools such as GIS, R, and/or Python to develop data analysis and integration strategies to increase accuracy of existing and new carbon models
- Conducting research independently as well as in a team setting
- Preparing technical proposals and reports and peer-reviewed scientific journal articles

Why should I apply?

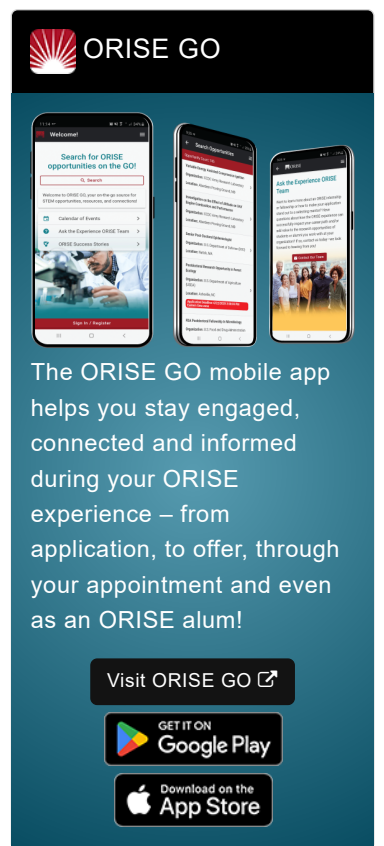
This fellowship provides the opportunity to independently utilize your skills and engage with experts in innovative ideas to move the proposed research forward. There are multiple opportunities available to engage in your applied research and evaluation interests.

Where will I be located? Champaign, Illinois

What is the anticipated start date?

ERDC-CERL 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?



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This ORISE appointment is a twelve month full-time appointment. 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-CERL. 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

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 M.S. required, Ph.D. preferred in Earth Systems, Ecology, Environmental Science, Forestry, Geography, Soil Science, or a related discipline.

You should have strong skills in the following:

- Environmental principles relating to soil and plant sciences
- Terrestrial carbon cycle measurement/modeling, either in soils or forest biomass
- Using one or more ecosystem models (LUCAS, FVS, DayCent, COMET, etc.)
- Demonstrated application of multivariate and machine learning models
- Strong computer science skills and ability to program in R and Python
- Geospatial analysis of open-source geospatial libraries
- Application of remote sensing analytics related to carbon sequestration modeling
- Simulation modeling of environmental processes
- Developing applications independently, as well as in a team
- Ability to research in a team setting with a variety of backgrounds, including engineers, scientists and other professionals with diverse expertise and backgrounds
- Excellent oral and written communication skills

A complete application consists of:

- **Zintellect profile**
- **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

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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-CERL-2022-0002 in the subject line of the email. 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.

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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 currently pursuing.
 - **Academic Level(s):** Graduate Students, Postdoctoral, or Post-Master's.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) )
 - **Earth and Geosciences** ([21](#) )
 - **Engineering** ([26](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([45](#) )
 - **Age:** Must be 18 years of age