

**Opportunity Title:** Grassland Ecosystem Ecologist: Predictive Modeling

**Opportunity Reference Code:** ERDC-CERL-2022-0003

### Organization

U.S. Department of Defense (DOD)

### Reference Code

ERDC-CERL-2022-0003

### 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 predictive model of rangeland plant attributes from remotely sensed data sources using image classification and machine learning techniques. Data will include multiple data sources of varying resolutions and spectra. To include: analyzing remote sensed data, developing algorithms to predict vegetation attributes for rangelands at the global level, and finally validating and refining algorithms based on data infusions.

Focus areas will include:

- Acquisition, analysis, and interpretation of diverse remotely sensed environmental data
- Analysis of rangeland systems for patterns, both natural and anthropogenic
- Experience data mining of plant functional traits from literature and databases
- Development of rangeland process models
- Analysis of scaling effects and uncertainty
- Validation of developed models
- Conducting research independently as well as in a team setting
- Preparation of 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?

This ORISE appointment is a six 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

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**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 Agronomy, Ecology, Environmental Science, Geography, or related field.

You should have strong skills in the following:

- Grassland/rangeland function and biogeography
- Excellent quantitative and data analysis skills, including proficiency in primary COTS and open-source GIS and remote sensing software as well as data analyses using Python and/or R
- Open-source geospatial libraries and geospatial analysis of data
- Developing multivariate and machine learning models
- Object-oriented image classification techniques
- Handling large data streams
- 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 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](mailto:usace@orise.orau.gov). Please list the reference code of this opportunity ERDC-CERL-2022-0003 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.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** ([12](#) )
  - **Communications and Graphics Design** ([6](#) )
  - **Computer, Information, and Data Sciences** ([17](#) )
  - **Earth and Geosciences** ([21](#) )

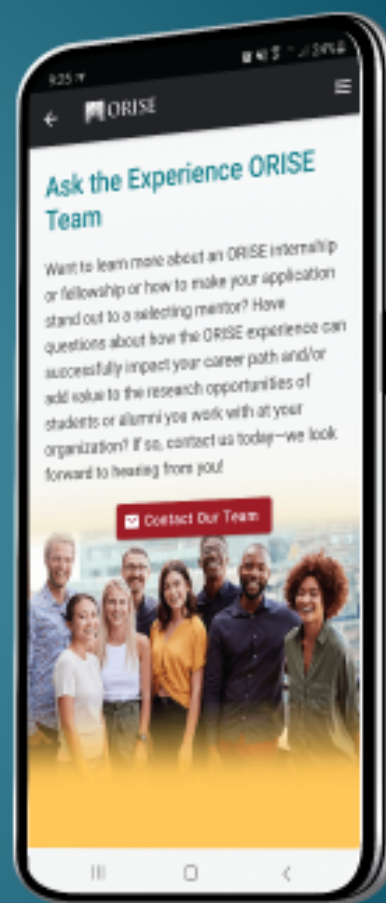
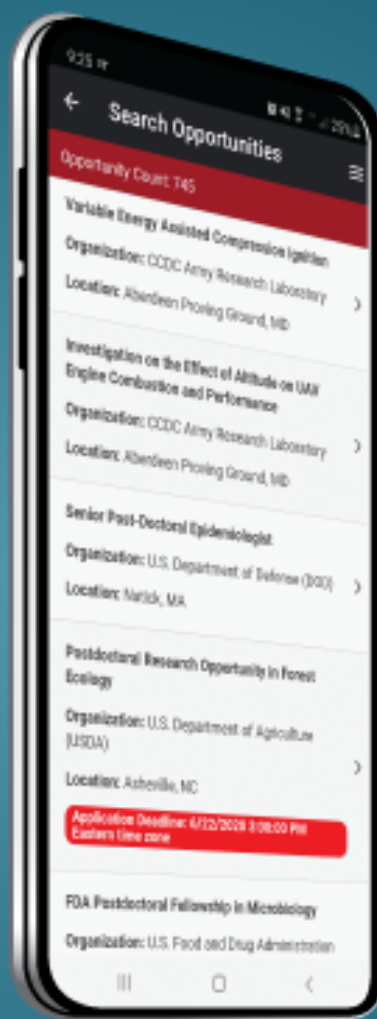
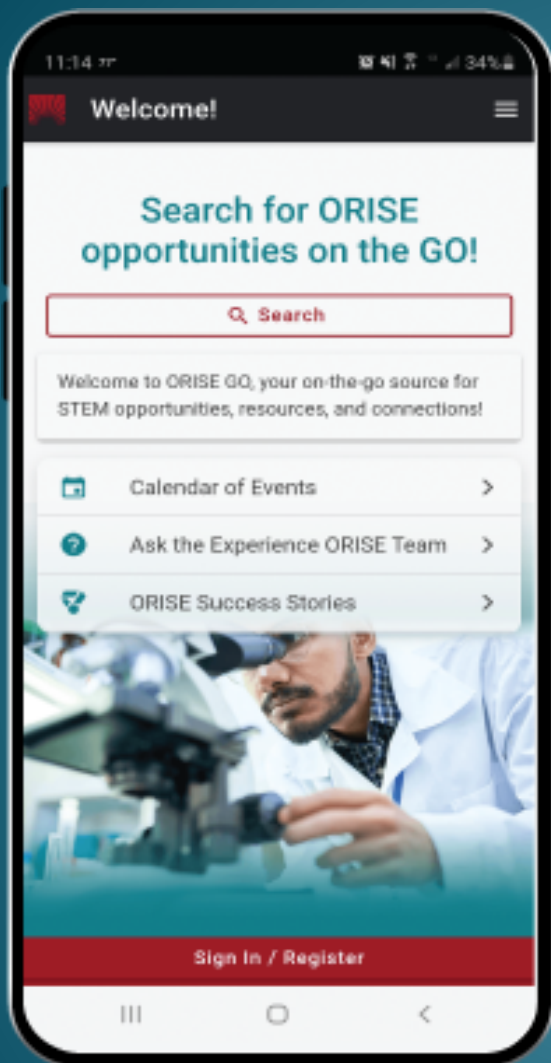
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- **Engineering** ([26](#) )
- **Environmental and Marine Sciences** ([14](#) )
- **Life Health and Medical Sciences** ([45](#) )
- **Social and Behavioral Sciences** ([29](#) )
- **Age:** Must be 18 years of age



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