

Opportunity Title: Vapor Phase Fluorescence: Graduate Research

Opportunity Reference Code: ERDC-ITL-2022-0001

Organization U.S. Department of Defense (DOD)

Reference Code ERDC-ITL-2022-0001

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

Description The U.S. Army Engineer Research and Development Center helps solve our nation's most challenging problems in civil and military engineering, geospatial sciences, water resources, and environmental sciences for the Army, Department of Defense, civilian agencies, and our Nation's public good. As one of the most diverse engineering and scientific research organizations in the world, ERDC conducts research and development in support of the Soldier, military installations, and the Corps of Engineers' civil works mission, as well as for other federal agencies, state and municipal authorities, and with U.S. industries through innovative work agreements. <https://www.erdcl.usace.army.mil/>

What will I be doing?

Under the guidance of a mentor, you will conduct computational modeling and experimental research related to molecular responses to light amplification by stimulated emission of radiation (laser) and the stimulation of vapor phase fluorescence. Research will include investigating molecules of interest, approaches for excitation and detection, model development, design of experiments, and data collection/analysis. You should have knowledge and ability to model molecular structures and interactions. Knowledge of laser induced reactions, and vapor phase phenomena are also strongly preferred.

Ongoing research activities may include the following:

- Investigating molecules of interest
- Investigating approaches for molecular excitation
- Investigating vapor phase fluorescence
- Investigating approaches to fluorescence detection
- Molecular model development
- Design of experiments
- Data collection
- Data analysis
- Participating in the preparation of reports, presentations, or journal articles
- Communicating research activities and findings
- Participation in research team meetings
- May be required to travel off-site to support ongoing research

Where will I be located? Mississippi

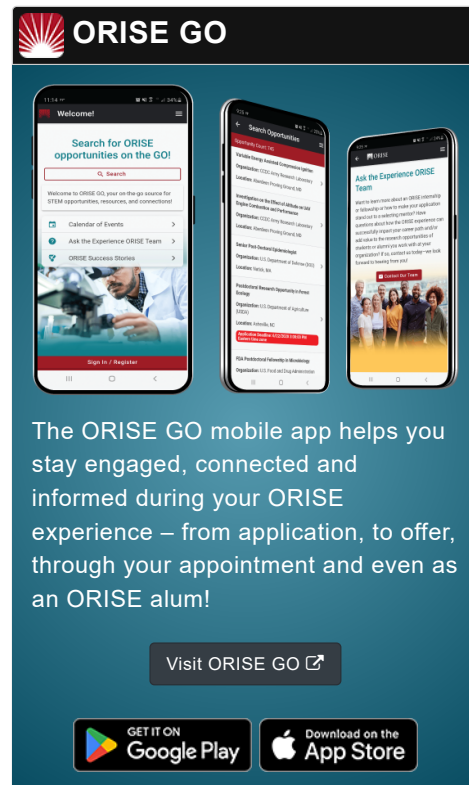
Why should I apply?

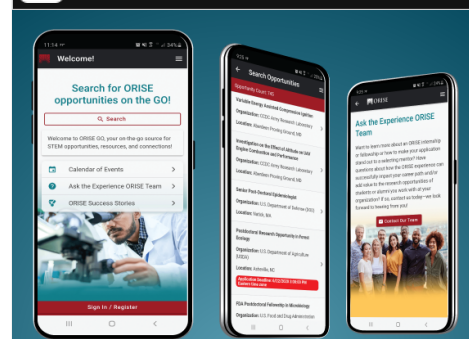
This fellowship provides the opportunity to independently utilize your skills and engage with experts in innovative ideas to move the proposed research forward.

What is the anticipated start date?

ERDC-ITL is ready to make an appointment immediately. Exact start date will be







The ORISE GO mobile app helps you stay engaged, connected and informed during your ORISE experience – from application, to offer, through your appointment and even as an ORISE alum!

Visit ORISE GO

GET IT ON Google Play

Download on the App Store

Opportunity Title: Vapor Phase Fluorescence: Graduate Research

Opportunity Reference Code: ERDC-ITL-2022-0001

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-ITL. 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 part-time nine 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 a major in physics, with a GPA of 3.5 or higher. You should have some hands-on research experience in lasers, spectroscopy (e.g., LIF, Raman, CRDS), chemical sampling, and vacuum systems. You should have some basic computer skills, such as Word, Excel, PowerPoint, Mathematica, LaTeX, Python, Fusion 360, MATLAB, Arduino, etc.

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. 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. Please understand that ORISE does not review applications or select applicants; selections are made by

Opportunity Title: Vapor Phase Fluorescence: Graduate Research

Opportunity Reference Code: ERDC-ITL-2022-0001

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. All documents must be in English or include an official English translation.

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

- **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 )
 - **Computer, Information, and Data Sciences** (17 )
 - **Earth and Geosciences** (21 )
 - **Engineering** (27 )
 - **Environmental and Marine Sciences** (14 )
 - **Life Health and Medical Sciences** (48 )
 - **Mathematics and Statistics** (11 )
 - **Physics** (16 )
 - **Science & Engineering-related** (2 )
- **Age:** Must be 18 years of age