Opportunity Title: Electro-Optical Research Fellowship
Opportunity Reference Code: DTRA-2027-0001

Organization U.S. Department of Defense (DOD)

Reference Code DTRA-2027-0001

How to Apply Click on *Apply* at the bottom of the opportunity to start your application.

Description The Test Support Division, Test Science Branch, of the Research and Development Directorate for the Defense Threat Reduction Agency (DTRA) is offering a master's/doctoral level fellowship opportunity in optical, electro-optical, and spectroscopic sensor testing for DTRA .

What will I be doing and why should I apply?

Current projects will provide educational experiences involving optical, electro-optical, and spectroscopic sensor testing associated with DTRA research activities. The fellow will engage in learning opportunities related to test planning, design concepts, experimental development, data collection, and analysis associated with advanced optical diagnostic technologies.

The ORISE Fellow will have the opportunity to gain experience and knowledge from:

- Participating in collaborative research activities focused on test planning concepts, advanced spectroscopic diagnostic technologies, and analytical approaches involving Passive Detection Hyperspectral Imaging (PD-HSI), Light Detection and Ranging (LIDAR), and Infrared (IR) systems.
- Contributing in spectroscopic data collection and analysis activities to increase understanding of electro-optical sensor performance and to explore methods for communicating and presenting research findings.
- Researching spectroscopic and electro-optical signatures, examining scientific questions, and exploring the feasibility of concepts related to optical sensing applications.
- Collaborating and participating in technical discussions with researchers, technical personnel, and other stakeholders to exchange scientific information, discuss research topics, and broaden understanding of technical challenges and approaches.

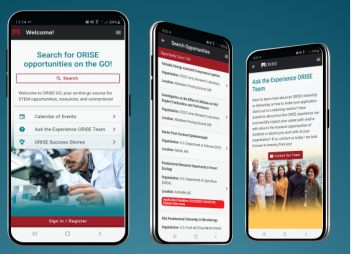
Through these experiences, the Fellow is expected to develop increased knowledge of the modeling, analysis, and capabilities of spectroscopic and electro-optical sensing systems, including PD-HSI, LIDAR, and IR technologies, and to strengthen their understanding of their application within weapons effects research and testing environments.

Where will I be located?

Albuquerque, New Mexico

What is the anticipated start date?

The Test Support Division, Test Science Branch at DTRA is ready to make appointments immediately. Exact start dates will be determined at the time of selection and in coordination with

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the selected candidate. Applications are reviewed on an ongoing basis and internships or fellowships will be filled as qualified candidates are identified.

What is the appointment length?

This appointment is a full-time, twelve-month research appointment, with the possibility to be renewed for additional research periods. Appointments may be extended depending on funding availability, project assignment, program rules, and availability of the participant.

What are the provisions?

You will receive a stipend to be determined by DTRA. Stipends are typically based on a participant's academic standing, discipline, experience, and research facility location. The anticipated stipend range for this opportunity is $5400-$5800 per month based on full-time participation.

Other provisions may include the following:

- Health Insurance Supplement (Participants are eligible to purchase health insurance through ORISE)
- Relocation/Dislocation Allowance
- Training and Travel Allowance

About DTRA

The Defense Threat Reduction Agency provides cross-cutting solutions to enable the DoD, the United States Government, and international partners to DETER strategic attack against the United States and its allies; PREVENT, reduce, and counter Weapons of Mass Destruction (WMD) and emerging threats; and PREVAIL against WMD-armed adversaries in crisis and conflict. This opportunity is within the Research and Development Directorate of DTRA, Test and Assessment Department. For more information about the DTRA, please visit https://www.dtra.mil/.

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 ORISE Research Participation Program at the U.S. Department of Defense.

Qualifications

A qualified candidate will have earned, or be currently pursuing, a master's or doctoral degree in Physics, Optical Engineering, Electrical Engineering, or a closely related physical science or engineering discipline. Degree must have been received within the past 5 years or obtained within 6 months of the start date.

- Minimum GPA of 3.0 is required
- Must be at least 21 years of age at the time of application
- Must be able to obtain and hold a SECRET security clearance and pass random drug screening

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- Must be a U.S. Citizen

Preferred Skills and Experience:

- Knowledge of Passive Detection Hyperspectral Imaging (PD-HSI), LIDAR, Infrared (IR) spectroscopy, and electro-optical sensor instrumentation.
- Experience with MATLAB, Python, or High-Performance Computing (HPC) for spectroscopic data analysis, signal processing, and spectral library matching is preferred.
- Familiarity with emerging technologies including optical instrumentation, computer modeling & simulation (e.g., optical propagation models, spectral radiometry simulations, Matlab, and/or other tools), and the use of computer models for the prediction, planning, and diagnostic coverage of test events.
- Excellent communication skills for collaborating in multi-disciplinary research teams and presenting spectroscopic data analyses.

The selected candidate must be able to pass interim SECRET security clearance requirement, hold a SECRET security clearance, and pass random drug screening. **Appointment offers will be rescinded should the candidate fail to meet the drug screening and interim security clearance requirement.**

Application Requirements

A complete application consists of:

- Zintellect Profile
- Educational and Employment History
- Essay Questions (goals, experiences, and skills relevant to the opportunity)
- Resume (PDF)
- Transcripts/Academic Records - For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- Two Recommendations - We encourage you to contact your recommender as soon as you start your application to ensure they are able to complete the recommendation form and to let them know to expect a message from Zintellect. The recommender will be asked to rate your scientific capabilities, personal characteristics, and describe how they know you. You can always log back in to your Zintellect account and check the status of your application.

If you have questions, send an email to STEM-WORKFORCE@orise.orau.gov. Please list the reference code of this opportunity [DTRA-2027-0001] in the subject line of the email.

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Stipend $5,500.00 – $6,000.00 Monthly

Point of Contact Brittany

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 6 months or currently pursuing.

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- **Minimum Overall GPA:** 3.00
- **Discipline(s):**
  - **Engineering** (3 👁)
  - **Physics** (1 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).

Affirmation I affirm that I am 21 years of age or older at the time of application.