Opportunity Title: Post-Doctoral Researcher for High-Energy Density Physics (Computational)
Opportunity Reference Code: AFIT-2021-0064

Organization U.S. Department of Defense (DOD)

Reference Code AFIT-2021-0064

How to Apply 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.
- **1** Recommendation(s)

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 **AIRFORCE@orise.orau.gov**. Please list the reference code of this opportunity (AFIT-2021-0064) in the subject line of the email.

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!

Description The Air Force Institute of Technology is offering a postdoctoral internship at Wright Patterson Air Force Base, Ohio.

What will I be doing?

You will join a community of scientists and researchers in an effort to develop a machine learning platform.

As the selected participant, you will support computational research in relativistic high-intensity laser-plasma interaction (LPI), high-energy density physics, high-repetition rate targets with characterization of high-energy particles and radiation that are generated in such interactions. The research experience includes collaboration with the Extreme Light Laboratory (ELL) group that conducts fundamental research and applications involving high intensity LPI with broad applications that are of interest to DoD; e.g., radiation hardening. Of particular interest is probing electric and magnetic field structures generated during intense LPI, studying feasibility of developing a proton radiography source using ELL

Opportunity Title: Post-Doctoral Researcher for High-Energy Density Physics (Computational)
Opportunity Reference Code: AFIT-2021-0064

high-repetition rate laser targetry platform, and development of a machine learning (ML) platform for statistical analysis of high volume of LPI data collected at the lab. In addition, the ML is used to predict the influence of statistical and systematic fluctuation in laser and target parameters on LPI based x-ray, electron, proton and neutron generation. As a participant, you will support funded projects at AFIT and will also be expected to help publish journal papers, participate in proposal writing and present results in conferences and meetings.

Why should I apply?

Under the guidance of a mentor, you will gain hands-on experience to complement your education and support your academic and professional goals. Along the way, you will engage in activities and research in several areas. These include, but are not limited to:

- publish journal papers
- participate in proposal writing
- present results in conferences and meetings

What is the anticipated start date?

The Air Force Institute of Technology is ready to make appointments immediately. Exact start dates will be determined at the time of selection and in coordination with the selected candidate. Applications are reviewed on an ongoing basis and internships will be filled as qualified candidates are identified.

The Air Force Institute of Technology, or AFIT, located at Wright-Patterson Air Force Base, Ohio, is the Air Force's graduate school of engineering and management as well as its institution for technical professional continuing education. A component of Air University and Air Education and Training Command, AFIT is committed to providing defense-focused graduate and professional continuing education and research to sustain the technological supremacy of America's air, space and cyber forces.

Appointment Length

This appointment is a six 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 benefits?

You will receive a stipend to be determined by **AFIT.** Stipends are typically based on a 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

Opportunity Title: Post-Doctoral Researcher for High-Energy Density Physics (Computational)
Opportunity Reference Code: AFIT-2021-0064

- 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 The applicant should have knowledge and experience in computational ultrafast laser-matter interactions. Prior research experiences in computational high-energy density physics, plasma physics and/or laser-based diagnostics are desirable but not necessary.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Physics** (13 👁)