

Opportunity Title: AFIT Center for Directed Energy (CDE) Summer Internship Program (Mathematics - Graduate)

Opportunity Reference Code: AFIT-2026-0003-GR

Organization U.S. Department of Defense (DOD)

Reference Code AFIT-2026-0003-GR

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

Description The Air Force Institute of Technology is offering a graduate student level opportunity at Wright Patterson Air Force Base, Ohio.

What will I be doing?

The AFIT Center for Directed Energy (CDE) conducts applied research projects in subjects such as atmospheric aerosols, optical properties, and related phenomena using advanced methodologies and technologies. Key focus areas include aerosol profiling and absorption, seasonal trends and composition analysis, refractive index determination, and morphology for applications such as environmental monitoring, nuclear non-proliferation, and improving predictive modeling tools (e.g., LEEDR). Additional efforts involve innovative techniques like convolutional spectroscopy, drone-mounted sensors, and experiments to understand the impact of aerosols on thermal blooming, cloud transmission, and RF/microwave link performance under varying atmospheric conditions.

The participant selected under this posting will learn mathematical research techniques related to tomographical wavefront sensing for aero-optic applications. The goal is to advance the wavefront sensing capability and include TIP/ILT estimates in the algorithm.

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:

- Learn research techniques to develop algorithms and models for the simulation of field data
- Participate in experimental activities such as research design, data collection, technical seminars, and development of scientific reports.
- Gain experience in applied research methodologies in a collaborative, interdisciplinary scientific environment.
- Develop an understanding of AFIT/CDE's mission and research activities which support America's air, space, and cyber forces.

Where will I be located?

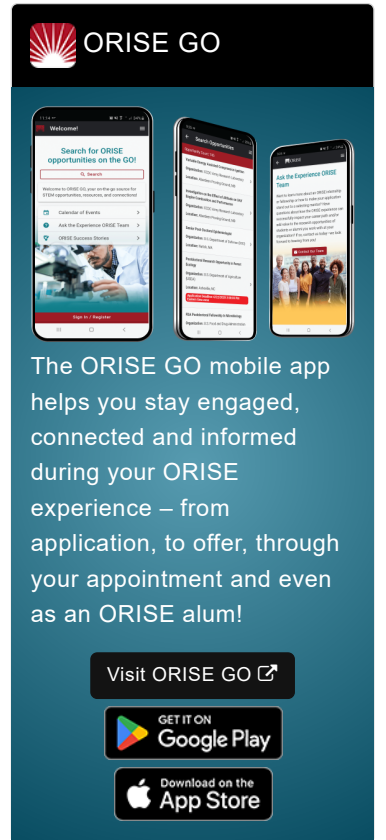
Dayton, Ohio

What is the anticipated start date?

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 fellowships will be filled as qualified candidates are identified.


What is the appointment length?


This appointment is a twelve-week 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.




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What are the provisions?

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 provisions may include the following:

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

About AFIT

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.

The Center for Directed Energy (CDE) was established as a cross-disciplinary center to conduct sponsored research which would influence the evolution of directed energy. CDE focuses on Research, Education, Innovation, and Collaboration. <https://www.afit.edu/CDE/>

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 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 The qualified candidate will hold or be currently pursuing a graduate degree in Mathematics. Postgraduates must have earned the degree within 5 years of the appointment start date.

Highly competitive applicants will have education and/or experience in one or more of the following:

- MATLAB, C++

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)

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- Transcripts/Academic Records - Please upload a copy of a transcript for your current or most recent degree program that meets the disciplinary qualifications of the opportunity. [Click here for detailed information about acceptable transcripts.](#)
- One Recommendation. We encourage you to contact your recommender(s) 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. Recommenders 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 AIRFORCE@orise.orau.gov. Please list the reference code of this opportunity [AFIT-2026-0009] 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.

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!

Point of Contact [Leslie](#)

Eligibility • **Citizenship:** U.S. Citizen Only

- Requirements**
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
 - **Minimum Overall GPA:** 3.80
 - **Discipline(s):**
 - **Mathematics and Statistics** ([2](#) )