Opportunity Title: Postdoctoral Fellowship in Applied Physics
Opportunity Reference Code: DHS-TSL-PostDoc-Fellowships-2023

Organization	U.S. Department of Homeland Security (DHS)
Reference Code	DHS-TSL-PostDoc-Fellowships-2023
How to Apply	Click on *Apply* now to start your application.
Description	The U.S. Department of Homeland Security (DHS) Transportation Security Laboratory (TSL) Visiting Scientist Program is offering postdoctoral fellowships for recent graduates.

What will I be doing?

You will join the TSL in a new endeavor in threat detection technology and applied research, specifically related to synthetic data generation. The need to develop synthetic methods to evaluate new Deep Learning algorithms is paramount and the proposed research is new and innovative.

The project involves a team of TSL staff and researchers focused on a two-fold approach involving x-ray and millimeter wave regimes looking at threat components in passenger baggage and personnel. The goal of the research is the generation and validation of synthetic data based on the operational characteristics of x-ray computed tomography and active millimeter wave imaging of personnel. The program is seeking recent graduates that have experience in modeling and large data sets and have a foundational knowledge of the physics or engineering applicable in learning to create high-fidelity synthetic data.

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. As a participant you will:

- Receive hands-on experience and individualized research opportunities while networking with top scientists and researchers.
- Have access to a one-of-a-kind federal research laboratory and state-of-the-art instrumentation.
- Enhance your academic and professional preparation; thus, increasing your marketability.

There are multiple opportunities available to engage in your applied research and evaluation interests. These include, but are not limited to:

- Deep learning algorithm testing
- Synthetic signature and/or image generation
- Data manipulation and quality assurance

Where will I be located? The appointment will be at the TSL which is located in Atlantic City, NJ at the William J. Hughes Technical Center.
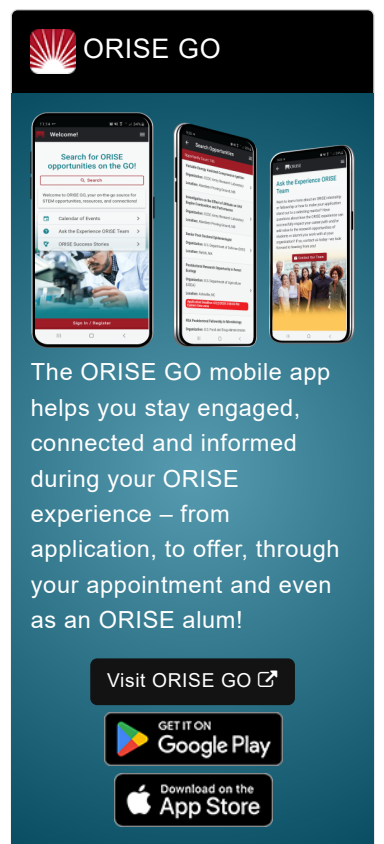
What is the anticipated start date?

TSL is ready to make appointments and the exact start dates will be determined at the time of selection, and in coordination with the selected candidates. Applications are reviewed on an ongoing basis and fellowships will be filled as qualified candidates are identified.

What are the benefits?

As a participant with TSL, you will receive:

- A competitive stipend based on your academic level and experience

- Dental and Health Insurance Allowance
- Relocation Allowance up to $5,000, if you are located more than 50 miles one way from the hosting facility.

Appointment Details

- An appointment involves a full-time, one year commitment at the host laboratory with the researcher on-site at the specified location.
- Optional one-year extensions to the appointment are available. Extensions are contingent upon performance, project need, and funding availability.
- The maximum time a participant can remain in the ORISE program is five years from their initial start date.

About Transportation Security Laboratory

The TSL is a DHS Federal Laboratory located at the William J. Hughes Technical Center, Atlantic City International Airport, New Jersey, and is a part of the Science and Technology Directorate. The core mission is to enhance homeland security by performing research, development, and validation of solutions to detect and mitigate the threat of improvised explosive devices. TSL helps protect our nation's civilian air transportation systems. By virtue of its accomplished experts, state-of-the-art facilities, and partnerships, TSL offers the homeland security community and transportation security partners the ability to advance detection technology from conception to deployment through applied research, test and evaluation, assessment, certification, and system qualification.

TSL's staff of more than one hundred employees includes physicists, chemists, engineers, and mathematicians who are leaders in explosives detection and mitigation. These talented technical experts have more than 1,000 years of experience collectively. TSL's team is internationally recognized for their unique ability to advance technology from conception to deployment through applied research, development, prototyping, test and evaluation, certification, and system qualification.

For additional information about TSL, visit: https://www.dhs.gov/science-and-technology/transportation-security-laboratory.

Nature of the Appointment

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 the Department of Homeland Security (DHS). Participants do not become employees of DHS, ORAU, ORISE, DOE, or any other agency, and there are no employment-related benefits. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

Qualifications Applicants must meet the following requirements:

- You must have or be eligible to obtain and maintain a security clearance for the duration of your appointment.

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- Have received or expect to complete all requirements for a Doctoral degree by the anticipated start date. Applicants currently pursuing a doctoral degree must provide proof of completion of all degree requirements before the fellowship start date.

- Be Sole U.S. Citizen

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

- Applied Physics
- Computational Physics
- High Energy Physics
- X-ray Physics
- Computational Mathematics
- Mathematical Modeling

Applicants with education and experience in similar or related fields in physics, mathematics and statistics, engineering, or similar, are also encouraged to apply.

A complete application consists of:

- Complete Zintellect Profile
- Essay Questions - The application includes questions specific to the opportunity.
- 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. If selected, a copy of the official transcript must be provided.
- Current Resume/CV
- One (1) Academic or Professional Recommendation - Applicants are required to provide contact information for at least one recommendation in order to submit the application. Recommenders will be asked to complete a recommendation through the Zintellect system and must complete it before the application is considered complete. **Applications without a completed recommendation will not be reviewed.** The recommendation should address a candidate's academic record, scientific capabilities, personal characteristics, and potential for success. **The recommendation must be submitted through the Zintellect application system. Recommendations 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 dhsed@orau.org. Please list the reference code of this opportunity [DHS-TSL-PostDoc-Fellowships-2023] 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!

Eligibility Requirements	- **Citizenship:** U.S. Citizen Only - **Degree:** Doctoral Degree. - **Discipline(s):** ○ **Chemistry and Materials Sciences** (12 👁) ○ **Computer, Information, and Data Sciences** (17 👁)

- - **Engineering** (27 👁)
  - **Mathematics and Statistics** (11 👁)
  - **Physics** (16 👁)
- **Age:** Must be 18 years of age