Opportunity Title: FDA Assessment of Quantitative Tissue Characterization Using Spectral X-Ray Imaging with Photon-Counting Fellowship
Opportunity Reference Code: FDA-CDRH-2024-0015

Organization U.S. Food and Drug Administration (FDA)

Reference Code FDA-CDRH-2024-0015

How to Apply ***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!

A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- One educational or professional recommendation.

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

If you have questions, send an email to ORISE.FDA.CDRH@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 8/30/2024 3:00:00 PM Eastern Time Zone

Description ***Applications will be reviewed on a rolling-basis.**

FDA Office and Location: A research opportunity is available within the Center for Devices and Radiological Health (CDRH), Food and Drug Administration (FDA), located at Silver Spring, Maryland.

Research Project: The fellow will be part of a collaborative team conducting exploratory research to develop testing methodologies for emerging photon counting spectral x-ray imaging systems including CT scanners. This project is multi-faceted with focus areas involved in developing a computational tools for modeling spectral imaging systems with photon counting based detectors, to implement modifications on an existing laboratory benchtop systems that can emulate spectral breast tomosynthesis and CT and develop physical and digital anthropomorphic phantoms along with test methods to assess image quality with photon counting detector-based imaging systems.

Learning Objectives:

- During the research appointment, the participant will have a chance to interact with a multidisciplinary group of scientists, including biomedical and electrical engineers, physicists, and mathematicians within and outside the FDA (the project includes collaborators in academia and industry).
- The participant will gain expertise in conducting and support research on novel medical imaging modalities and imaging physics for regulatory based goals.
- This experience will allow the participant to understand the parameters involved in evaluation of spectral x-ray imaging systems.
- In addition, the participant will have the opportunity to learn about

regulatory science issues at the FDA.

Anticipated Appointment Start Date: August 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for one year, but may be renewed upon recommendation of FDA and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and FDA. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. Participants do not become employees of FDA, DOE or the program administrator, and there are no employment-related benefits.

Completion of a successful background investigation by the Office of Personnel Management is required for an applicant to be on-boarded at FDA. OPM can complete a background investigation only for individuals, including non-US Citizens, who have resided in the US for a total of three of the past five years.

FDA Ethics Requirements

If an ORISE Fellow, to include their spouse and minor children, reports what is identified as a Significantly Regulated Organization (SRO) or prohibited investment fund financial interest in any amount, or a relationship with an SRO, except for spousal employment with an SRO, and the individual will not voluntarily divest the financial interest or terminate the relationship, then the individual is not placed at FDA. For additional requirements, see FDA Ethics for Nonemployee Scientists.

FDA requires ORISE participants to read and sign their FDA Education and Training Agreement within 30 days of his/her start date, setting forth the conditions and expectations for his/her educational appointment at the agency. This agreement covers such topics as the following:

- Non-employee nature of the ORISE appointment
- Prohibition on ORISE Fellows performing inherently governmental functions
- Obligation of ORISE Fellows to convey all necessary rights to the FDA regarding intellectual property conceived or first reduced to practice during their fellowship

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- The fact that research materials and laboratory notebooks are the property of the FDA
- ORISE fellow's obligation to protect and not to further disclose or use non-public information

Qualifications

The qualified candidate should be currently pursuing or have received a master's or doctoral degree in the one of the relevant fields.

Preferred skills/experience:

- Familiarity with x-ray radiation detectors and the physics of photon transport
- Medical image reconstruction in CT, MRI, PET/SPECT, or Ultrasound.
- Benchtop system design, experience in opto-mechanics, electronics, and instrumentation along with strong data analysis skills are essential (We use LabView),
- Programming with languages such as LabView, MATLAB, Python or C.

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Postdoctoral, or Post-Master's.
- **Discipline(s):**
  - **Communications and Graphics Design** (3 👁)
  - **Engineering** (6 👁)
  - **Physics** (16 👁)

Affirmation

I have lived in the United States for at least 36 out of the past 60 months. (36 months do not have to be consecutive.)
and
I have read the FDA Ethics Requirements.