

Opportunity Title: FDA-OSEL Research Fellowship on Deep Learning Assisted Medical Image Reconstruction

Opportunity Reference Code: FDA-CDRH-2024-11

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

Reference Code FDA-CDRH-2024-11

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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. Your application will be considered incomplete and will not be reviewed until one recommendation is submitted.

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

If you have questions, send an email to ORISE_FDA_CDRH@oraui.org. Please include the reference code for this opportunity in your email.

Application Deadline 7/31/2024 11:59:59 PM Eastern Time Zone

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

This fellowship, administrated through the Oak Ridge Institute for Science and Education (ORISE), offers a one-year opportunity for post-master's degree or doctoral candidates. The fellow will participate on a project to develop tools to support the regulatory evaluation of deep learning-assisted medical image formation (e.g., unrolled methods, deep-imaging priors) and post-processing techniques (e.g., denoising, super-resolution). The research will encompass implementing modern deep learning algorithms and image quality assessment using bench testing data, virtual human scans, generative model-based synthetic data, and publicly available repositories of radiological images.

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 initial appointment is for one year**, but may be renewed upon recommendation of FDA contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. **The appointment is full-time at FDA in the Silver Spring, Maryland, area.** 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,



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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;
- 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 have received a master's or doctoral degree in one of the relevant fields (computer science, physics, electrical engineering, biomedical engineering, medicine, or applied mathematics). Degree must have been received within the past five years. Candidates must meet security requirements and have resided in US for a minimum of three of the past five years.







- Preferred candidates should have demonstrated academic or professional experience with some of the following:
 - - medical image reconstruction and denoising in CT, PET/SPECT, or MRI.
 - - developing and analyzing machine learning and deep learning methods,
 - - computational modeling of patient anatomies and simulation of x-ray imaging systems
 - - statistical and objective image quality assessment
 - - programming with languages such as Python or C, and deep learning frameworks (TensorFlow, PyTorch, etc.),
 - - speaking, writing, and communication in English.

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (2👁)

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- **Computer, Information, and Data Sciences** ([7](#) )
- **Earth and Geosciences** ([1](#) )
- **Engineering** ([12](#) )
- **Life Health and Medical Sciences** ([3](#) )
- **Mathematics and Statistics** ([8](#) )
- **Physics** ([2](#) )

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.)

I have read the FDA Ethics Requirements.