

Opportunity Title: FDA CDRH Summer Research in X-ray Scattering Studies of Proteins in Alzheimer's Disease

Opportunity Reference Code: FDA-CDRH-2023-04

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

Reference Code FDA-CDRH-2023-04

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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 4/8/2023 3:00:00 PM Eastern Time Zone

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

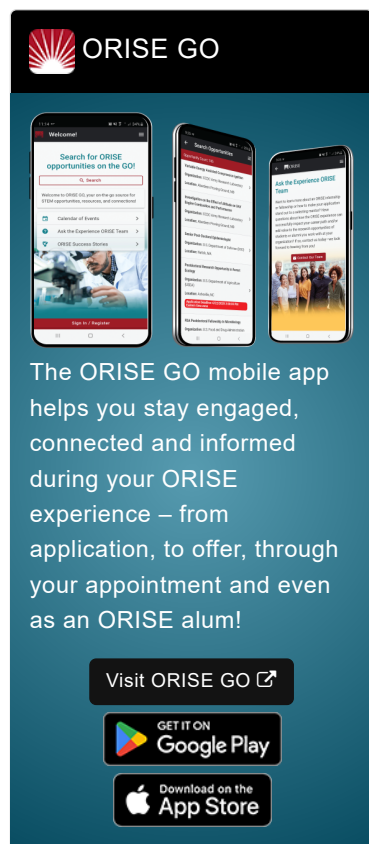
A Summer research opportunity is available at the U.S. Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH) located in Silver Spring, Maryland. The two neuropathological hallmarks of Alzheimer's disease (AD) are the extracellular aggregation of amyloid-beta peptides in the brain to form amyloid plaques and the aggregation of tau proteins to form neurofibrillary tangles in neurons. The fellow will be part of a project that will characterize the structures of amyloid-beta fibrils and tau tangles in AD using small angle x-ray scattering (SAXS) technique. Towards this effort, the fellow will design protein aggregation protocols mimicking various aggregation states of amyloid-beta and tau in AD and perform structure characterization of those aggregates at different length scales.

Participant Learning Objectives:

- The participant will gain hands-on experience to perform experimental measurements to characterize protein aggregates using SAXS.
- The participant will gain experience with protein modifications to form protein aggregates associated with Alzheimer's disease and characterize them at different length scales.


Anticipated Appointment Start Date: May 24, 2023; start date is flexible


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 3 months 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 on-site for




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laboratory research 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 (OPM) 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 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 be currently pursuing or have received a master's or doctoral degree in one of the relevant fields (Engineering, Material science, Biochemistry, Biophysics or any other related disciplines). Degree must have been received within the past five years.

Preferred candidates should have demonstrated academic or professional experience with some of the following:

- Strong background in protein characterization and a basic knowledge of small-angle x-ray scattering (SAXS) technique.
- Experience with protein aggregation methods and characterizing amyloid-beta and tau structures is a plus.

- Eligibility Requirements**
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) 👁)
 - **Engineering** ([6](#) 👁)
 - **Life Health and Medical Sciences** ([4](#) 👁)
 - **Physics** ([16](#) 👁)
 - **Science & Engineering-related** ([1](#) 👁)
 - **Age:** Must be 18 years of age

Affirmation Have you lived in the United States for at least 36 out of the past 60 months? (36 months do not have to be consecutive.)