

**Opportunity Title:** Research Fellow-Optical Coherence Tomography-FDA-CDRH

**Opportunity Reference Code:** FDA-CDRH-2018-0272

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

**Reference Code** FDA-CDRH-2018-0272

**How to Apply** 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
- Two educational or professional references

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

If you have questions, send an email to [FDARpp@orau.org](mailto:FDARpp@orau.org). Please include the reference code for this opportunity in your email.

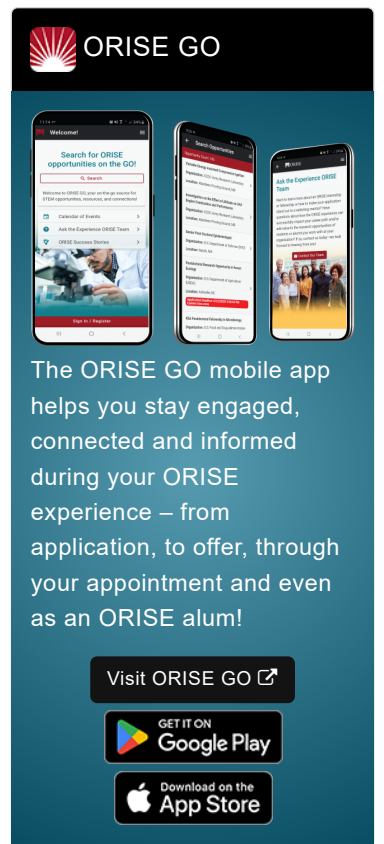
**Description** **A Research Opportunity if available at the U.S. Food and Drug Administration (FDA), Center for Devices and Radiological Health (CDRH).**

**The desired start date is August 1, 2018.**

Peripheral nerves serve as a bidirectional link between the central nervous system (CNS) and its distal targets. The autonomic nervous system (ANS), which is part of the peripheral nervous system, innervates internal organs to modulate their function and transmits sensory information back to the CNS. By selectively stimulating the ANS nerves, neuromodulation of target organs can be achieved. In-depth knowledge of neuroanatomy and real-time information on nerve health during surgical or neuromodulation procedures are essential for successful outcomes. The goal of this project is to develop optical coherence tomography (OCT) based peripheral nerve imaging technology to study the structure and function of somatic and autonomic nerves. We will use specific advantages of OCT, particularly the ability to derive intrinsic contrast measures and its depth sectioning capability, to validate novel tools for mapping peripheral nerve anatomy and define new imaging biomarkers of neuromodulation and nerve injury. A successful effort will transform the way neuromodulation devices are assessed and deployed, leading to more effective therapies and better patient outcomes.

During the research appointment, the candidate will learn about the use of OCT imaging to study structure and function of autonomic nerves in animal models. The candidate will observe and learn about identifying novel optical biomarkers of neuromodulation and nerve injury

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

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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.

The Homeland Security Presidential Directive-12 (HSPD-12) mandates a background check be completed for both U.S. Citizens and foreign nationals. Foreign nationals must have resided in the U.S. for at least three of the past five years in order to be able to complete a background check.

**Qualifications** Applicants should have or be pursuing a Bachelor of Science or Master of Science in Biomedical Engineering, Computer Science, Electrical Engineering, Neuroscience, or a related field.

It would be favorable for the applicant to be an individual with engineering and scientific curiosity, have problem solving skills; be knowledgeable in optical coherence tomography, image processing and machine learning, peripheral nervous system, immunohistochemistry/Histology and proficient in LabVIEW or MATLAB, and GPU programming.

Desired knowledge or experience for the applicant to have would be laboratory experience with animal handling and surgery, and effective oral and written communication skills as demonstrated by presentations at international conferences and publications in peer reviewed journals.

- Eligibility Requirements**
- **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree to be received by 12/31/2021 12:00:00 AM.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([3](#))
    - **Engineering** ([3](#))
    - **Life Health and Medical Sciences** ([2](#))
    - **Physics** ([1](#))