Opportunity Title: FDA Research Opportunity in Genetics and Molecular Biology
Opportunity Reference Code: FDA-CFSAN-2021-0019

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

Reference Code FDA-CFSAN-2021-0019

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.CFSAN@orau.org. Please include the reference code for this opportunity in your email.

Description

***Applications will be reviewed on a rolling-basis, and this opportunity will remain open until a qualified candidate is selected.**

A research opportunity is currently available at the U.S. Food and Drug Administration (FDA), Center for Food Safety and Applied Nutrition (CFSAN), Office of Regulatory Science (ORS) located in College Park, Maryland.

Very recently, the FDA received funding to build public health capacity, in the form of SARS CoV-2 (SC2) surveillance, by expanding the GenomeTrakr network of state and local laboratories that conduct genomic pathogen surveillance for rapid investigation of illness and outbreaks. This includes a more integrated infrastructure and funding for public health sequencing information into publicly-accessible, open databases.

The participant will contribute to the development of metagenomic sequencing workflows that can be implemented and integrated into the framework of wastewater surveillance testing methods for SC2. Specifically, nucleic acid extraction protocols to target SC2 will be optimized to reduce viral genome degradation , mitigate common inhibitors in wastewater samples, enhance sequence quality, and ease of use and automation. Sequencing library preparation will follow established protocols with optimization for the sample matrix and will include several process controls, such as matrix recovery control, human fecal normalization, quantitative measurement controls, inhibition assessment, and negative controls. Library preparation methods will be assessed based on benchmark or previously characterized samples to determine optimal manufacturer protocols, including modifications, and multiplexing strategies.

Opportunity Title: FDA Research Opportunity in Genetics and Molecular Biology
Opportunity Reference Code: FDA-CFSAN-2021-0019

Under the guidance of a mentor, the participant will be involved in the following activities:

- Development, verification and validation of metagenomic extraction methods applicable to wastewater samples to target RNA viruses, specifically SC2
- Optimization of RNA library preparation protocols and workflows for multiple sequencing platforms
- Generation and analysis of wastewater metagenome and metatranscriptome sequence data from long-read sequencing technologies (e.g. Nanopore & PacBio)
- Curation and maintenance of lab protocols and workflows, including version control and central repository maintenance
- Uploading wastewater sequence data to NCBI SRA and GISAID
- Communication with other project workgroups to facilitate a cohesive study design
- Follow experimental protocols and document findings in a laboratory notebook
- Communicate with mentors on a daily basis
- Collaborate with mentor to prepare reports for communicating results for CFSAN, FDA, and the scientific community

Learning objectives:

- As a member of the research team, the participant will learn how FDA responds to emergencies such as a pandemic
- Learn how to integrate into a research team, to be involved in certain aspects of a research program and study and communicate effectively with team members and other stakeholders
- As a member of the Division and Office, the participate will complete all required training and as such will learn about all applicable aspects of laboratory safety and elements of a quality assurance plan
- Training will be made available, so that the participant is proficient in all of the above activities and these can be conducted successfully

Anticipated Appointment Start Date: May 2021 (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 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 College Park, 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, including non-US Citizens, who have resided in the US for a total of three of the past five years.

Opportunity Title: FDA Research Opportunity in Genetics and Molecular Biology
Opportunity Reference Code: FDA-CFSAN-2021-0019

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 bachelor's or master's degree in one of the relevant fields, or be currently pursuing one of the degrees with completion by the end of May 2021. Degree must have been received within the past five years.

Preferred skills:

- Experience with platforms that generate next-generation sequence data, with some experience with long-read sequencing
- Working understanding of genomics and biology as it relates to whole-genome sequencing, de novo genome assembly, QC/QA of whole-genome sequence data

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 5/31/2021 11:59:00 PM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (46 👁)