Opportunity Title: FDA Research Fellowship in Evaluating the Safety and Efficacy of Personal Protective Equipment Fabrics for Barrier Performance Against Respiratory Emissions
Opportunity Reference Code: FDA-ORA-2023-04

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

Reference Code FDA-ORA-2023-04

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
- 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.OC.other@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 7/14/2023 3:00:00 PM Eastern Time Zone

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

A research opportunity for a motivated and independent individual is currently available at the U.S. Food and Drug Administration (FDA), Office of Regulatory Affairs (ORA), Winchester Engineering and Analytical Center (WEAC) located in Winchester, Massachusetts.

The U.S Food and Drug Administration (FDA), Office of Regulatory Affairs (ORA), Winchester Engineering and Analytical Center (WEAC) in collaboration with the Center for Disease Control (CDC), National Institute for Occupational Safety and Health (NIOSH) and the Massachusetts Institute of Technology (MIT) is evaluating personal protective equipment (PPE) fabric for penetration by simulated respiratory emission to enhance the robustness of PPE design and testing and potentially improve the safety for healthcare workers and the public during outbreaks of respiratory illnesses. We are seeking a highly motivated recent graduate with a strong background in fluid dynamics, material science, engineering, infectious diseases, or closely related disciplines to be part of this highly interdisciplinary research project.

The project aims to evaluate PPE Fabrics for barrier performance against penetration by respiratory droplets bearing noninfectious Covid-19-Virus-like-particles in a simulated laboratory environment.

This project will lay the essential groundwork for mitigating future risks by preparing the public health agencies to better evaluate PPE effectively and adequately. The successful candidate will be responsible for evaluating various PPE fabrics for their resistance to penetration of simulated respiratory droplets bearing noninfectious COVID-19-virus-like particles generated via a cough-and-sneeze simulator, then compare the barrier performance of PPE fabrics exposed to the cough-and-sneeze simulator with other standard test methods.

Specific tasks include, but are not limited to:

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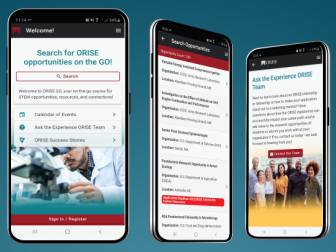
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- Prepare, optimize, and characterize COVID-19-virus-like particles containing respiratory droplets in terms of size distribution/zeta potential/surface charge measurements using scanning electron microscopy and dynamic light scattering.
- Projectile testing of respiratory fluids using a cough-and-sneeze simulator.
- Test the resistance of PPE fabrics against respiratory droplets containing COVID-19-virus-like-particles and determine the detection efficiency.
- Evaluate barrier performance of PPE fabrics exposed to respiratory droplets with other standard test methods.

This appointment provides the selected research fellow with an excellent opportunity to:

- Collaborate with FDA scientists in diverse research laboratories throughout the project.
- Learn about FDA regulatory processes and gain an understanding of the current regulatory requirements for evaluating PPE.
- Present research finding at various national and/or international scientific meetings.
- Author peer-reviewed journal articles and contribute to grant proposals.

Anticipated Appointment Start Date: May 1, 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 one year, but may be renewed upon recommendation of FDA contingent on the availability of funds.** Proof of health insurance is required for participation in this program. The appointment is full-time at FDA in the Cincinnati, Ohio 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.

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

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- 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, master's, or doctoral degree in one of the relevant fields (Material Science, Engineering, Microbiology, Infectious Diseases). Degree must have been received within the past five years.

Preferred skills:

- A strong background in fluid dynamics, nanoparticle characterization techniques, scanning electron microscopy, dynamic light scattering, fluorescent microscopy
- Capable of designing and optimizing protocols and executing experiments as well as troubleshoot problems independently.
- Ability to organize well and adhere to deadlines when delivering results.
- Excellent written and verbal communication skills and ability to convey ideas and concepts to non-scientific audiences.

Eligibility Requirements

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Engineering** (27 👁)
  - **Life Health and Medical Sciences** (48 👁)
  - **Science & Engineering-related** (1 👁)

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.)