Opportunity Title: FDA Analytical Chemist Fellowship
Opportunity Reference Code: FDA-CFSAN-2022-33

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

Reference Code FDA-CFSAN-2022-33

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.

Application Deadline 1/3/2023 3:00:00 PM Eastern Time Zone

Description

***Applications will be reviewed on a rolling-basis and this opportunity will remain open until filled.**

A research opportunity is currently available at the U.S. Food and Drug Administration (FDA), Center for Food Safety and Applied Nutrition (CFSAN), within the Office of Food Safety, Division of Food Processing Science & Technology, located in Bedford Park, Illinois.

FDA supports the use of recycled plastics in food contact applications and administers a voluntary program to review industrial recycling processes for safety evaluation of recycled plastics for subsequent food contact use. Due to their broad use in both food and nonfood applications, increasing industry demand for recycling of polyolefin (PO) articles has led to challenges in effective container sorting and development of effective recycling decontamination technologies to produce post-consumer recycled PO (polypropylene, polyethylene) that is suitable for food contact applications. Information on source control of the incoming polymer feedstock is often lacking and recycling processes are more complicated for POs due to their inherent diffusion properties. FDA's chemistry guidance document on recycled plastics for industry recommends simulating incidental chemical contamination resulting from consumer abuse or misuse. The participant, under the supervision of the mentor, will assist with the development of analytical methods for detection of surrogate contaminants for recycling processes in PO polymers. In addition, the participant will also assist with studies that evaluate the sorption behaviors of various chemical contaminants in PO polymers. Finally, this

research project will enable industry and government stakeholders to identify experimental methods that could be used to 1) detect and identify chemical contaminants/hazards, and 2) control these hazards during industrial recycling processes. This research project will provide an understanding of PO sorption behavior to advance the FDA surrogate testing protocol for use in recycled polyolefins recommended in industry guidance.

The participant will collaborate with an interdisciplinary team involved in developing analytical methods for detecting chemical additives and contaminants in food contact materials and organic solvents/food simulants. Under the supervision of the mentor, the participant will be involved in studies aimed at measuring the sorption concentrations of various chemical surrogates into PO polymer during controlled time/temperature storage. In addition, the participant will also use advanced migration modeling software to compare and analyze their experimental sorption data with simulated model results. The participant will be trained in the use of GC-MS, LC-MS, ICP-MS, or other techniques for detecting components and contaminants in food packaging materials and in food. They will also be trained in thermal analytical techniques (DSC, TGA) to characterize PO polymer materials used in sorption studies for recycling processes. The feasibility of using a solventless contamination technique as an FDA surrogate testing protocol for recycled PO polymers will also be evaluated. It is anticipated that through this appointment, the incumbent will receive training and become proficient in 1) use of analytical methods for detecting and quantifying chemical constituents and contaminants, 2) designing and analyzing data from experiments aimed at evaluating sorption of contaminants into food contact materials from organic solvents, and 3) presenting research findings and writing technical research reports.

Anticipated Appointment Start Date: January 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.** 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 Bedford Park, Illinois 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 Analytical Chemist Fellowship
Opportunity Reference Code: FDA-CFSAN-2022-33

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 (e.g. Analytical Chemistry, Food Science, Chemical Engineering, Materials Science), or be currently pursuing one of the degrees and will reach completion by the start date of the appointment. Degree must have been received within five years of the appointment start date.

Qualified candidates with strong academic records and hands-on experience in analytical chemistry or food chemistry laboratories are encouraged to apply.

Preferred skills/experience in:

- A strong background in analytical chemistry, spectrophotometry (ATR/FT-IR, UV-Vis), and high proficiency in chromatographic separations and/or mass spectrometry (GC-MS, LC-MS, ICP-MS).
- Experience operating data management software including data acquisition, data processing, and reporting
- The participant should be proficient in routine preventive maintenance and service of chromatographic systems and spectrometers and be able to use their experience and troubleshooting tools to identify required instrumental service repairs.
- Experience with Agilent Mass Hunter/ChemStation, Thermo Scientific Xcalibur, and Waters Empower and MassLynx chromatography/spectrometry software is beneficial.
- Familiarity in use of thermal characterization techniques of polymers, including TGA, DSC, and DMA, is desirable.
- Participant should be familiar with using SOPs and maintaining accurate laboratory records and notebooks. In addition, the incumbent must assist in the interpretation and evaluation of the results of analysis to determine validity in addition to scientific and practical significance. Summary reports of the collected datasets will be expected to be

Opportunity Title: FDA Analytical Chemist Fellowship
Opportunity Reference Code: FDA-CFSAN-2022-33

generated. Results of research and/or literature reviews will be communicated to the scientific and technical communities primarily through presentation at scientific meetings and publication in relevant peer-reviewed scientific journals. Manuscripts which include, diagrams, charts, graphs, and other visual representations related to research activities and outcomes, will be expected to be produced with minimal editing and revision.
- Excellent verbal and written communication skills

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (5 👁)
  - **Engineering** (2 👁)
  - **Life Health and Medical Sciences** (4 👁)

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.)