

Opportunity Title: FDA Fellowship RLD vs. Generic Buprenorphine Films: A Physicochemical Study of Equivalence & Manipulability
Opportunity Reference Code: FDA-CDER-2026-0173

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

Reference Code FDA-CDER-2026-0173

How to Apply *To submit your application, scroll to the bottom of this opportunity and click 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.CDER@orau.org. Please include the reference code for this opportunity in your email.

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Application Deadline 12/15/2026 12:00:00 AM Eastern Time Zone

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

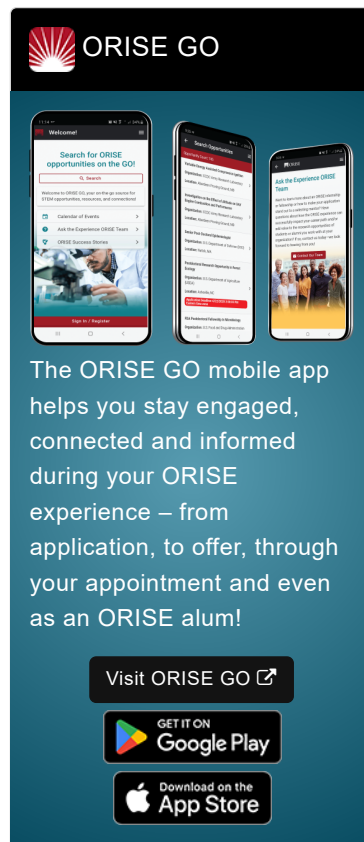
FDA Office and Location: A research opportunity is available immediately with the Food and Drug Administration (FDA), Center for Drug Evaluation and Research (CDER), located in St. Louis, Missouri.

The Center for Drug Evaluation and Research (CDER) performs an essential public health task by making sure that safe and effective drugs are available to improve the health of people in the United States. As part of the U.S. Food and Drug Administration (FDA), CDER regulates over-the-counter and prescription drugs, including biological therapeutics and generic drugs. This effort covers more than just medicines.

Research Project: This proposed study investigates the complex micro and nanoscale structures of buprenorphine sublingual films to address the current lack of regulatory guidance on Q3 microstructural sameness. By comparing reference and generic formulations, the research aims to understand how these structural differences impact critical factors like drug dissolution, dose uniformity, and abuse potential.

Learning Objectives: Through participation in this research project, you will:

- Develop expertise in advanced characterization of complex pharmaceutical materials by applying complementary microscopy, spectroscopy, and chemical imaging techniques to evaluate pharmaceutical film formulations.



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- Gain hands-on experience with SEM, cryo-SEM, and Raman chemical imaging, including pharmaceutical sample preparation, method optimization, data acquisition, and interpretation of surface and cross-sectional characteristics.
- Apply AFM-IR/nanoIR and other nanoscale characterization approaches to investigate local chemical composition, spatial heterogeneity, polymer–drug interactions, and microstructural features within complex pharmaceutical matrices.
- Advance skills in chemometrics and quantitative data analysis by applying multivariate and post-acquisition processing approaches to complex spectroscopic and imaging datasets and developing reproducible data-analysis workflows.
- Develop correlative and multimodal characterization strategies by integrating structural, chemical, and nanoscale datasets to obtain a more comprehensive understanding of pharmaceutical material properties than can be obtained using a single analytical technique.
- Build an understanding of pharmaceutical dissolution and drug-release principles and learn to evaluate relationships between formulation microstructure, chemical distribution, material properties, and product performance.
- Gain exposure to regulatory science and complex drug-product evaluation, including how advanced physicochemical characterization can contribute to the scientific assessment of reference and generic drug products.
- Strengthen scientific communication skills through preparation of technical reports, scientific manuscripts, abstracts, posters, and presentations and through communication of research findings to multidisciplinary scientific audiences.

Mentor: The mentor for this opportunity is Snober Ahmed (Snober.Ahmed@fda.hhs.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: January 2027. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for one year, but may be renewed upon recommendation of FDA and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR) only.

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and

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Education, was established through an interagency agreement between DOE and FDA. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. 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.

Qualifications The qualified candidate should have received a doctoral degree in the one of the relevant fields. Degree must have been received within the past five years.

Preferred skills:

- A background in materials characterization, pharmaceutical sciences, analytical chemistry, materials science, polymer science, or a related discipline, with particular strength in advanced chemical imaging and quantitative data analysis.
- Experience with AFM-IR/nanoIR, including sample preparation, data acquisition, spectral interpretation, and chemical mapping. Experience with other AFM-based characterization techniques is also desirable.
- Proficiency in post-acquisition data processing and chemometric analysis of spectroscopic and/or imaging datasets. Experience with approaches such as PCA, MCR-ALS, PLS, spectral unmixing, clustering, or other multivariate methods is desirable.
- Familiarity with SEM and Raman spectroscopy/chemical imaging. Prior experience with cryo-SEM is desirable; project-specific training will be provided.
- Basic understanding of pharmaceutical dissolution and drug-release principles, with an interest in correlating material properties and chemical distribution with product performance.
- Experience with polymers, pharmaceutical formulations, thin films, amorphous materials, or other complex multicomponent materials is desirable.
- Excellent oral and written scientific communication skills, including the ability to clearly interpret and communicate complex results, prepare technical reports and manuscripts, and present research to multidisciplinary scientific audiences.
- Analytical thinking, attention to data quality and reproducibility, and the ability to act both independently and collaboratively in a multidisciplinary research environment.

Point of Contact [Ashley](#)

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- Eligibility Requirements**
- **Citizenship:** LPR or U.S. Citizen
 - **Degree:** Doctoral Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([7](#) )
 - **Engineering** ([2](#) )
 - **Life Health and Medical Sciences** ([51](#) )
 - **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.)