

Opportunity Title: USDA-ARS EMFSL STEM Summer Internship

Opportunity Reference Code: USDA-ARS-2022-0193

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0193

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
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. 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 recommendations

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

Application Deadline 6/27/2022 3:00:00 PM Eastern Time Zone

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

ARS Office/Lab and Location: Multiple research opportunities are currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Environmental Microbial and Food Safety Laboratory (EMFSL) located in Beltsville, Maryland.

Research Project: The mission of the EMFSL is to work to better understand where pathogens come from and how they survive and move through farms and processing plants to food products, and to develop ways to reduce, detect, and treat contamination problems that can cause foodborne illnesses. The research objectives are:

- Characterizing protozoan parasites (utilizing biological, chemical and molecular techniques) found in livestock manures, and assess their transmission on and off of the farm,
- Characterizing pathogenic enteric bacteria on dairy farms, their ecology, and their routes of transmission within the dairy herd and to milk,
- Investigating the transport of pathogens from manure/feces via water and animal/insect vectors,
- Assessing the introduction, dissemination, persistence and survival of saprophytic vs. pathogenic enteric bacteria during growth (including organic and conventional growing practices), harvest, postharvest handling and processing of fresh fruits and produce, and
- Developing rapid and sensitive methods for the identification of specific food-borne pathogens as well as rapid nondestructive methods for the detection of biological and chemical contaminants on fresh fruits and produce and on food processing surfaces.

Scientific disciplines represented in the laboratory include parasitology, microbiology, molecular biology, bacteriology, food technology, plant



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science, animal science, soil science, hydrology, environmental science, spectroscopy, spectral imaging, and engineering.

Learning Objectives: The selected participants will be matched with and mentored by individual scientists with appropriate research and expertise, and will be provided learning and training opportunities for use of various research technologies and methodologies.

Mentor(s): The coordinator for this STEM internship opportunity is Manan Sharma (manan.sharma@usda.gov) and EMFSL scientists will serve as mentors. If you have questions about the nature of the research, please contact the coordinator.

Anticipated Appointment Start Date: June 1, 2022. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for two or three months, but may be renewed upon recommendation of ARS and is contingent on the availability of funds.

Level of Participation: The appointment is full-time during the 2022 summer break (40 hours per week) and can be renewed for part-time participants during the academic period.

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

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

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and ARS. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits. However, this position requires a pre-employment check and a full background investigation. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

This is an equal opportunity program open to all qualified individuals without regard to race, color, age, sex, religion, national origin, mental or physical disability, genetic information, sexual orientation, or covered veteran's status.

Questions: Please visit our [Program Website](#). After reading, if you have additional questions about the application process please email USDA-ARS@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing a bachelor's or master's degree in one of the relevant fields of study.

- Eligibility Requirements**
- **Citizenship:** LPR or U.S. Citizen
 - **Degree:** Currently pursuing a Bachelor's Degree or Master's Degree.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([7](#))
 - **Computer, Information, and Data Sciences** ([5](#))

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- **Engineering** ([14](#) 👁)
- **Environmental and Marine Sciences** ([5](#) 👁)
- **Life Health and Medical Sciences** ([26](#) 👁)
- **Mathematics and Statistics** ([1](#) 👁)
- **Physics** ([1](#) 👁)