Opportunity Title: USDA-ARS Postgraduate Fellowship in Foodborne Pathogen Research
Opportunity Reference Code: USDA-ARS-MW-2023-0056

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-MW-2023-0056

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. All transcripts must be in English or include an official English translation. 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 7/5/2024 11:00:00 PM Eastern Time Zone

Description

***Applications are reviewed on a rolling-basis and this posting could close before the deadline.**

ARS Office/Lab and Location: A research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Animal Disease Center (NADC), Food Safety and Enteric Pathogens Research Unit located in Ames, Iowa. **Relocation will be required.**

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific in-house research agency with a mission to find solutions to agricultural problems that affect Americans every day from field to table. ARS will deliver cutting-edge, scientific tools and innovative solutions for American farmers, producers, industry, and communities to support the nourishment and well-being of all people; sustain our nation's agroecosystems and natural resources; and ensure the economic competitiveness and excellence of our agriculture. The vision of the agency is to provide global leadership in agricultural discoveries through scientific excellence.

The NADC is the premiere research institute within the USDA for studying the role of commensal bacteria in health and disease of food-producing animals. The selected participant will be part of a team of microbiologists, immunologists, bioinformaticians, and veterinarians who are investigating host-microbe interactions with the ultimate goal of discovering antibiotic alternatives that will improve animal health and food safety.

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Research Project: Under the guidance of the mentor, the participant will be involved in conducting in vitro and/or in vivo (animal models) experiments evaluating, colonization factors, the response of mucosal and immunological tissue, as well as bacterial communities in intestinal tract following inoculation with different bacteria, various dietary components, or stressors, and evaluating data. The participant will be involved in designing and evaluating modalities (example: antimicrobial peptides, vaccines) targeting food-borne pathogens from data collected.

Related research information may be found at:

- https://www.ars.usda.gov/midwest-area/ames/nadc/people/indira-kudva/
- http://www.ncbi.nlm.nih.gov/pubmed/?term=Kudva+I
- https://www.ars.usda.gov/people-locations/projects/?person-id=44886

Learning Objectives: The participant will learn how to identify the critical events, timepoints, and biomarkers for interactions between intestinal bacteria, including food-borne pathogens, and between intestinal tissues/host systems and bacteria, which contribute to a healthy intestinal ecosystem and immune system, refractory to foodborne pathogen colonization and persistence.

Mentor(s): The mentor for this opportunity is Indira Kudva (Indira.kudva@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2024. 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 ARS and is contingent on the availability of funds.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant(s) will receive a monthly stipend commensurate with educational level and experience. **The annual stipend rate ranges from $37,696 to $54,625, and is dependent on qualification and experience at the postgraduate level. A health insurance supplement of up to $6,547 for an individual ($18,665 for a family plan) will be provided to cover the cost of an individual or family health insurance plan. A $3,000 travel allowance to reimburse travel-related expenses to scientific or professional development activities, when appropriate and available, will also be provided.**

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

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

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program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: Please visit our Program Website. After reading, if you have additional questions about the application process please email ORISE.ARS.Midwest@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a bachelor's or master's degree in one of the relevant fields.

Preferred skills:

- DNA,RNA and protein extraction and analysis
- In-silico and practical analysis of protein structure and functions
- PCR, qPCR, RT-PCR
- Cloning and Sequencing
- Immune assays such as ELISA, immunoblots, immuno-histochemistry
- Cell/organ-culture and/or cell/tissue-based adherence assays
- Handling small or large animals
- Deriving and analyzing biological databases using proteomics
- Additional knowledge of transcriptomics or genomics approaches, and statistical inference methods
- Technical writing in English for peer-reviewed publications.
- Good interpersonal and public speaking skills
- Enthusiastic and self-motivated with good communication skills and a strong work ethic

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Communications and Graphics Design** (2 👁)
  - **Computer, Information, and Data Sciences** (4 👁)
  - **Life Health and Medical Sciences** (10 👁)
  - **Mathematics and Statistics** (2 👁)
  - **Science & Engineering-related** (1 👁)