

Opportunity Title: USDA-ARS Postdoctoral Fellowship in E. Coli-Cattle

Interactions

Opportunity Reference Code: USDA-ARS-2021-0108

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2021-0108

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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
- Two educational or professional recommendations

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

Application Deadline 6/16/2021 3:00:00 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 postdoctoral research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) National Animal Disease Center (NADC) located in Ames, Iowa.

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 the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: The Food Safety and Enteric Pathogens Research Unit (FSEPRU) at the National Animal Disease Center (NADC), Ames, IA, ARS National Program 108-Food Safety performs basic and applied research to characterize and employ pre-harvest strategies to control human food-borne pathogens. The long-term objective of the research is to reduce Shiga toxin-producing *E. coli* (STEC) carriage in cattle, thereby reducing the incidence of human disease due to consumption of contaminated produce or beef products. The participant will contribute to research studies investigating the ability of different STEC isolates to colonize cattle, the impact of animal stress on changes in host gastrointestinal immune status and STEC colonization, and novel methods to limit STEC attachment to host cells. The participant will be involved in cattle trials assessing shedding of STEC from cattle and investigate methods to disrupt attachment of STEC to bovine cells *in vitro* and *in vivo*.

Learning Objectives:

- The participant will have the opportunity to learn immune cell assays (flow cytometry, immunohistochemistry, nuclei isolation from tissue for RNAsequencing) and basic comparative genomics of STEC or STEC transcriptomic analysis
- The participant will be able to participate in workshops on analyzing STEC genomes and transcriptomes
- In addition, participation in research meetings to present findings in both oral and poster



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presentations will be encouraged.

Mentor(s): The mentor for this opportunity is Crystal Loving (crystal.lovig@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 1, 2021. 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 will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens 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 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 USDA-ARS@ornl.gov and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree with completion by the end of May 2021. Degree must have been received within the past five years.

Preferred skills:

- Experience with animal trials
- Basic microbiology skills (culture, nucleic acid isolation, enumeration)
- Cell-culture experience (cell lines or primary cells)
- Experience isolating cells from host tissues
- Experience analyzing bacterial genome or transcriptome data

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 5/31/2021 12:00:00 AM.
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([11](#) )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).