

Opportunity Title: USDA-ARS Fellowship in the Spatiotemporal Epidemiology of Livestock Disease

Opportunity Reference Code: USDA-ARS-P-2024-0042

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-P-2024-0042

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
- A copy of an abstract or reprint of an article

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

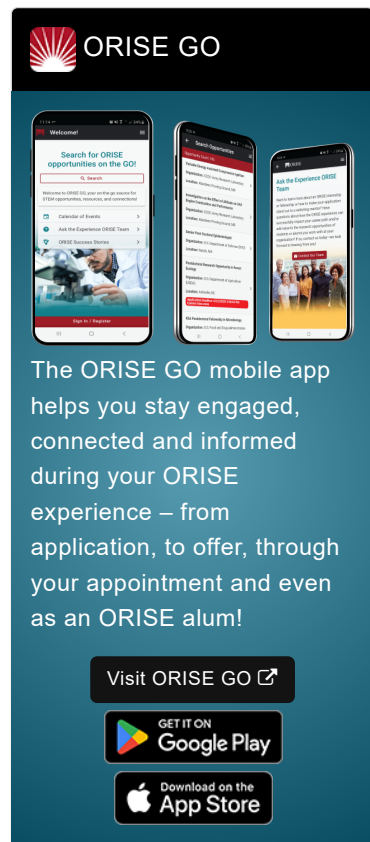
Application Deadline 9/27/2024 3:00:00 PM Eastern Time Zone

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

ARS Office/Lab, Location, and Fellowship Program: A research opportunity is currently available within the National Bio and Agro-Defense Facility (NBAF) of the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) located in Manhattan, Kansas. **This opportunity may be either at an ARS facility, remote, or hybrid.**

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.

Research Project: The Foreign Animal Disease Research Unit (FADRU) located at NBAF is seeking a highly motivated and qualified individual to serve as a research Fellow in livestock disease modeling. This Opportunity offers an exciting opportunity to contribute to cutting-edge research in animal disease ecology, epidemiology, and modeling, with a particular focus on Foot and Mouth Disease (FMD). Under the guidance of the mentor, the fellow will assist in data acquisition, processing, and analysis as well as



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developing statistical and mathematical models to describe and simulate FMD disease spread. The Fellow will also support data analysis and modeling in other livestock disease systems. Additionally, the Fellow will be encouraged to develop a scientific project that helps address disease modeling research gaps and leads to peer-reviewed publication.

Learning Objectives: The selected participant will have the opportunity to learn or expand skillsets over a range of computational skills needed for modern agricultural research and data analyses, including:

1. **Model Development:** Gain expertise in designing and developing advanced statistical and mathematical models to understand the spatial and temporal dynamics of livestock diseases across a range of geographic scales.
2. **Software Development:** Acquire proficiency in creating and maintaining software code, packages, and workflows using the R or Python programming language and GitHub.
3. **Genetic Analysis:** Develop competence in performing genetic analyses using phylogenetic and bioinformatic methods to investigate the evolution and transmission patterns of livestock diseases.
4. **Data Collection and Analysis:** Learn to collate and analyze spatially structured data related to livestock disease outbreaks to inform model development and validation.
5. **Publication:** Develop the skills to produce and maintain reproducible analyses, publish research findings in peer-reviewed journals, and present results at scientific meetings.
6. **Collaboration:** Collaborate effectively with interdisciplinary teams, including other researchers, veterinarians, and stakeholders, to address complex questions in livestock disease.

Mentor(s): The mentor for this opportunity is Dr. John Humphreys (john.humphreys@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 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 for additional years upon recommendation of ARS and contingent on the availability of funds.

Level of Participation: The appointment is full-time, but arrangement for reduced hours to accommodate coursework, etc., is possible if agreed to and supported by the participant's mentor.

Participant Stipend: The participant(s) will receive a monthly stipend commensurate with educational level and experience and according to the duty station location.

Citizenship Requirements: This opportunity is available to U.S. citizens only.

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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 (<https://orise.orau.gov/usda-ars/default.html>). After reading, if you have additional questions about the application process please email ORISE.ARS.Plains@orau.org and include the reference code for this opportunity.







Qualifications The qualified candidate must have received a Doctoral Degree (PhD preferred, DVM considered with advanced training) in a relevant field before the start date of their appointment.

Preferred skills:

- Proficiency in using at least one programming language (R and/or Python)
- Proficiency in preprocessing and analyzing spatial and temporal data
- Knowledge of software development workflows and use of GitHub software
- Knowledge in phylogenetics, genetic analysis, genomics, or landscape genetics
- Knowledge of veterinary medicine, science and/or diseases of livestock
- Knowledge of animal movement analysis or population ecology
- Knowledge of epidemiological analysis or disease modeling
- Ability to effectively collaborate and work with others
- Strong oral and written communication skills

Point of Contact [Janeen](#)

- Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
 - **Degree:** Doctoral Degree.
 - **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([4](#) )
 - **Earth and Geosciences** ([21](#) )
 - **Environmental and Marine Sciences** ([14](#) )
 - **Life Health and Medical Sciences** ([12](#) )
 - **Mathematics and Statistics** ([11](#) )
 - **Social and Behavioral Sciences** ([1](#) )