

Opportunity Title: Postdoctoral Microbiologist/Molecular Biologist Research

Opportunity Reference Code: ARS-ESQRU-2015-0074

Organization U.S. Department of Agriculture (USDA)

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How to Apply A complete application consists of:

- An application
- Official transcript(s) - scanned copies are acceptable
- A current resume/CV

If you have questions, send an email to USDA-ARS@orau.org. Please include the reference code for this opportunity in your email.

Description A postdoctoral Microbiologist/Molecular Biologist research opportunity is available with the Egg Safety and Quality Research Unit (ESQRU) located at the Richard Russell Research Center in Athens, Georgia. The selected applicant will conduct original and innovative research to determine the microbial ecology of major poultry foodborne pathogens (Salmonella and Campylobacter) throughout the entire “farm to fork” production spectrum on local, all natural, antibiotic-free, pasture-based farms. The research approach follows a coordinate-driven model incorporating a comprehensive and multidisciplinary (systems biology) strategy that combines microbiology (cultural and molecular), physiochemistry, genomics, phenotype analysis, epidemiology, and microbial ecology to facilitate our understanding of the environmental drivers of foodborne pathogen ecology throughout the life cycle of broiler flocks from embryo to final consumer product. While currently focused on broilers, there is a potential to expand to other animal systems such as layers, swine, or cattle.

The selected applicant will work independently with minimal supervision, with the characterization of the recovered foodborne pathogen isolates from this project, including serotyping and antimicrobial resistance profiling, being a specific focus of this position. The development, testing, and validation of new methodologies/assays to target/characterize these pathogens is also a potential outcome of this position. The second research focus for the selected applicant will be the application of next generation sequencing data (e.g. microbiomics and metagenomics) to characterize the microbial communities from which these pathogens were isolated, as well as looking into integrating or developing other “omics” technologies relevant to the project (e.g. antimicrobial gene resistome).

This project will involve farm visits and processing facility visits

The appointment is full-time for one year and may be renewed for up to four years upon recommendation of the ARS and availability of funding. The stipend rate for this position is up to \$52,775, depending on skills and experience. A stipend supplement is included in this rate to offset the cost of an individual or family health insurance plan. The participant must show proof of health and medical insurance. Health insurance can be obtained through ORISE. The rate also includes a travel allowance of \$1,500 per year to reimburse travel-related expenses to scientific and professional



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development activities. Funding may be available for reimbursable relocation expenses. **The participant does not become an employee of the ARS or ORISE.**

This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals.



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.

For more information about the ARS Research Participation Program, please visit <http://www.orise.orau.gov/usda-ars>.

Qualifications To be eligible, applicants must have received a doctorate degree in microbiology, environmental microbiology/microbial ecology, molecular biology, epidemiology or any closely related field within five years of the desired starting date.

The ideal candidate will have:

- Familiarity with complex environmental samples, and the techniques required to isolate bacteria (for downstream cultural analyses) and DNA/RNA (for downstream molecular analyses) from these samples.
- Experience with pathogen characterization techniques (e.g. immunology, BAX PCR, molecular serotyping, PFGE, antimicrobial sensitivity testing (AST)).
- Experience with isolating genomic DNA from environmental samples for the molecular characterization of microbial communities (e.g. microbiomics, metagenomics) and targeted bacteria (e.g. qPCR).
- Experience with bioinformatics, specifically in the analysis of next-generation sequencing sets (Illumina MiSeq) using programs such as QIIME.
- Ability to work cooperatively on a multi-disciplinary team is essential.
- Ability to interpret and compare obtained results with relevant published data.

- Eligibility Requirements**
- **Degree:** Doctoral Degree.
 - **Academic Level(s):** Postdoctoral.
 - **Discipline(s):**
 - **Environmental and Marine Sciences** ([2](#) )
 - **Life Health and Medical Sciences** ([11](#) )