

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship to Investigate Predatory Bacteria for Use as a Probiotic to Reduce Salmonella in Poultry  
**Opportunity Reference Code:** USDA-ARS-2022-0360

**Organization** U.S. Department of Agriculture (USDA)  
**Reference Code** USDA-ARS-2022-0360  
**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

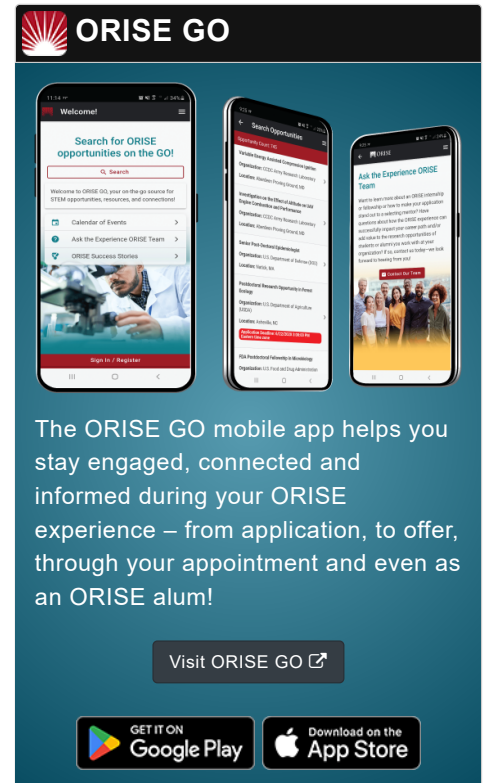
All documents must be in English or include an official English translation.

**Description** **\*Applications may be reviewed on a rolling-basis.**

**ARS Office/Lab and Location:** A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), located in Providence, Rhode Island and Athens, Georgia. During Year 1 of the project, the ORISE postdoctoral fellow will acquire technical expertise and pursue project objectives at Providence College in Providence, Rhode Island. After this approximately one-year training period, the fellow will transfer to Russell Research Center in Athens, Georgia for the remainder of the fellowship to pursue subsequent project objectives. **Relocation funds will be provided to the fellow to offset the cost of moving.**

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 successful applicant will conduct microbiological research to investigate development of the predatory bacterium *Bdellovibrio* as a probiotic intervention to control *Salmonella* during poultry production. This project will involve assay development and *in vitro* high-throughput screening to identify promising predatory bacteria strains



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followed by *in vivo* poultry studies to directly test the ability of these strains to reduce *Salmonella* at different stages of production. This ORISE fellowship offers a unique opportunity for a postdoctoral scientist to conduct research at both a primarily undergraduate institution and a federal research agency.

**Learning Objectives:** The fellow will learn how to handle predatory bacteria (*Bdellovibrio*) and target bacteria, Salmonella. They will also learn how to adapt predation assays into a high throughput, 96-well format to screen large numbers of different *Bdellovibrio* to find the best predator of Salmonella, and also screen large numbers of Salmonella to determine what strains are susceptible to predation. After one year, the fellow will help transfer this technology to the ARS facility in Athens GA, and they will learn how to do animal challenges in poultry and evaluate the *Bdellovibrio* as a probiotic to reduce levels of Salmonella in poultry. Additionally, the fellow will have opportunities to mentor undergraduate research assistants at Providence College and graduate research assistants in Athens, GA. This unique program will allow a motivated postdoc to develop unique and powerful laboratory skills and also develop mentoring skills necessary for success in their next career goals. The fellow can also benefit from formal and informal training in bioinformatics, statistics, artificial intelligence, computational biology, etc. through courses available through the USDA.

**Mentor:** At Providence College, Dr. Laura Williams will serve as primary mentor. At Russell Research Center, Dr. Jonathan Frye ([jonathan.frye@usda.gov](mailto:jonathan.frye@usda.gov)) will serve as primary mentor. The mentoring team is committed to supporting the ORISE fellow's professional development. If you have questions about the nature of the research, please contact the mentor.

**Anticipated Appointment Start Date:** As soon as a qualified candidate is identified. 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 two additional years 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. **The current stipend for this opportunity will be \$5,823.17 plus \$562.68 for medical, prescriptions, dental and vision each month.**

**Citizenship Requirements:** This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the [Guidelines for Non-U.S. Citizens Details](#) page of the program website for information about the valid immigration statuses that

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are acceptable for program participation.

**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 [ORISE.ARS.Southeast@ornl.gov](mailto:ORISE.ARS.Southeast@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. Degree must have been received within five years of the fellowship start date.

The successful candidate will be expected to relocate from Providence, RI, to Athens, GA, after one year in order to pursue the project's objectives.

Preferred Skills/Qualifications:

- Knowledge and skills in basic bacteriology and molecular biology, including isolation and cultivation of bacteria and assay development
- Comfortability with animal work, specifically with poultry
- Ability to work independently to advance project goals and participate in preparation of presentations and publications
- Applicants with BSL-2 experience, particularly experience with *Salmonella* or similar bacterial pathogens
- Animal handling skills, such as inoculation, blood draws, and necropsy
- Bioinformatics skills in genome analysis

**Eligibility Requirements**

- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (17 )
  - **Earth and Geosciences** (21 )
  - **Environmental and Marine Sciences** (14 )
  - **Life Health and Medical Sciences** (48 )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).