Opportunity Title: USDA-ARS SCINet/AI-COE Postdoctoral Fellowships in Predictive Model Development to Enhance Food Safety in US Food Animal Production Systems

Opportunity Reference Code: USDA-ARS-SCINet-2023-0454

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-SCINet-2023-0454
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.

Application Deadline	5/17/2024 11:00:00 PM Eastern Time Zone
Description	***Applications are reviewed on a rolling basis.**

ARS Office/Lab and Location: Two postdoctoral research opportunities are available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Animal Disease Center and the U.S. National Poultry Research Center.

Research Project: The postdoctoral appointments (2) will support the big data, computational needs of the USDA-ARS *Salmonella* Grand Challenge project, whose goal is to integrate research from across the agency's labs to determine how and where *Salmonella* causes the highest risk to meat and poultry products. Due to the diverse nature of this collaborative effort, large datasets including microbiological data (prevalence/abundance, phenotype and genotype) and various pertinent animal environmental/management/performance metadata will be analyzed to reduce *Salmonella* risk in these animal production systems. Since the Grand Challenge already possesses several subject-matter experts on animal production systems, food safety issues, and pathogen physiology and genetics, these postdoctoral appointments are needed to fill in the current knowledge gap of higher-level computation analyses of these complex datasets. Computational strategies of interest include, but are not limited to, predictive/statistical modeling,
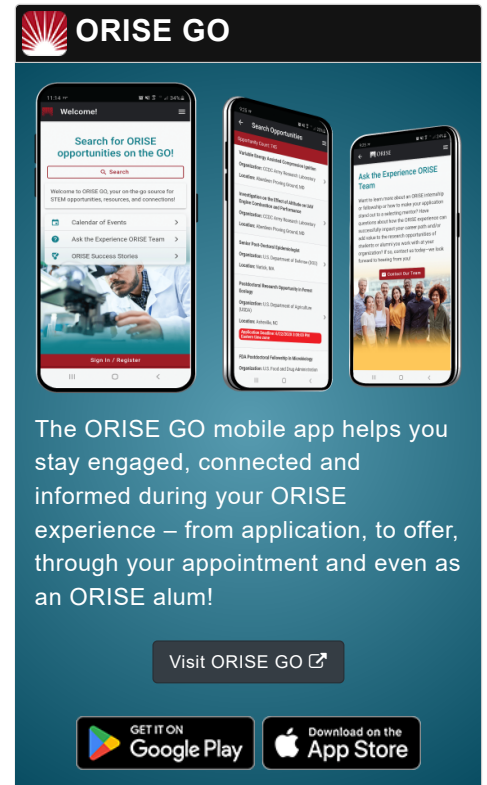
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machine and deep learning, and other AI methods. These postdoctoral appointments will be integral in implementing these computational strategies and programs to help develop better monitoring tools for meat and poultry producers to prevent *Salmonella* problems in their operations.

Learning Objectives: Successful candidates will have the opportunity to learn a range of computational skills needed to conduct these analyses while learning about the challenges in producing a safe meat and poultry. The *Salmonella* Grand Challenge team consists of 18 ARS scientists, representing eight fields of expertise and six national program areas, who are collaborating on 12 projects at eight ARS research laboratories across the country, so potential participants will have a unique opportunity to be co-mentored by experts in both biology/physiology and modeling. Potential participants will have many opportunities to collaborate with USDA-ARS scientists on various data analysis projects, including developing scientific presentations and writing scientific papers. The postdoctoral participants will take contributing roles in the Grand Challenge's cohort community of practice, helping to not only drive collaborations between the associated scientists, post-docs, and collaborators within the project, but to develop and participate in cross-training workshops among the many scientific disciplines within the Grand Challenge project.

USDA-ARS Contact: If you have questions about the biological nature of the research, please contact Dr. Shawn Bearson (shawn.bearson@usda.gov) or Dr. Michael Rothrock Jr. (Michael.rothrock@usda.gov), or, regarding the computational needs of the research, contact Dr. Brittney Keel (Brittney.keel@usda.gov)

Anticipated Appointment Start Date: Jan-March 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 for a second year upon recommendation of the mentor and ARS.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant(s) will receive a monthly stipend commensurate with educational level and experience.

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 page for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU

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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. If you have additional questions about the application process please email ORISE.ARS.SCINet@orau.org 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 to be received before May 31, 2024. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Experience developing, testing, and refining machine learning models
- Experience developing HPC workflows
- Excellent written and oral communication skills.
- Experience in team and collaborative scientific environments.
- Experience constructing plant image repositories

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 5/31/2024 12:00:00 AM.
- **Discipline(s):**
  - **Communications and Graphics Design** (1 👁)
  - **Computer, Information, and Data Sciences** (5 👁)
  - **Life Health and Medical Sciences** (2 👁)
  - **Mathematics and Statistics** (5 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).