

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Immune Responses

Opportunity Reference Code: USDA-ARS-2022-0003

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0003

How to Apply **Connect with ORISE...on the GO!** Download the new ORISE GO mobile app in the Apple 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. All transcripts must be in English or include an official English translation. 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 1/7/2022 3:00:00 PM Eastern Time Zone

Description ***Applications will be reviewed on a rolling-basis.**

ARS Office/Lab and Location: A research opportunity is available with the U.S. Department of Agriculture Agricultural Research Service (ARS) at the National Animal Disease Center (NADC), Virus and Prion Research Unit located in Ames, Iowa.

The 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 mission of the research project is to gain insight into mechanisms of colonization and pathogenesis of bacterial pathogens of swine, including *Streptococcus suis*, *Glaesserella parasuis*, *Bordetella bronchiseptica*, and *Streptococcus equi* subspecies *zooepidemicus*, in order to design novel intervention strategies to prevent or treat infection with bacterial pathogens of swine. Specifically, transcriptomics on *in vivo* samples will be performed to understand gene activation during infection or colonization in order to identify novel virulence factors or immunogenic proteins with potential as vaccine candidates. The participant will be involved with Isolation, sequencing, and analysis of bacterial mRNA from *in vivo* samples, gene knock-out or knock-down to evaluate novel virulence factors, selection and testing vaccine candidate proteins *in vivo*, and assessing the immune response to vaccination or infection.



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Learning Objectives: The participant will learn about vaccine development and testing in a swine model, transcriptomic analysis, and evaluation of immune responses, such as antibody testing, cytokine analysis. The participant will be encouraged to attend appropriate professional meetings. Research will involve collaboration with local, national, and international scientists and the participant will be encouraged to independently identify research hypotheses and design tests to evaluate research questions.

Mentor(s): The mentors for this opportunity are Susan Brockmeier (susan_brockmeier@usda.gov) and Samantha Hau (Samantha.Hau@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

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 an additional year 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, 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 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 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 May 2022. Degree must have been received within the past five years.

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 5/31/2022 11:59:00 PM.
 - **Discipline(s):**
 - **Engineering** ([3](#) )
 - **Environmental and Marine Sciences** ([1](#) )
 - **Life Health and Medical Sciences** ([46](#) )
 - **Veteran Status:** Veterans Preference, degree received within the last

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120 month(s).