

Opportunity Title: USDA-ARS Postdoctoral Fellowship on Development of Novel Tuberculosis Vaccines

Opportunity Reference Code: USDA-ARS-2022-0448

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0448

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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 2/22/2023 3:00:00 PM Eastern Time Zone

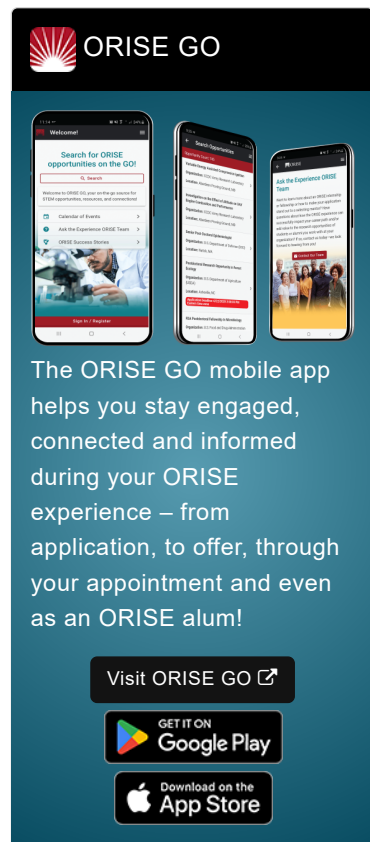
Description *Applications may be reviewed on a rolling-basis.

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 Ames, Iowa.

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 candidate will use CRISPR techniques to make targeted deletions to develop new vaccine candidates against Mycobacterium infections (tuberculosis). In addition, the candidate will assist in characterization of immunologic responses in cattle or other natural hosts to vaccination with novel vaccine strains. Techniques utilized may include, CRISPR to make new rationally designed vaccine strains, characterization of cytokine gene expression and transcription, flow cytometry, high throughput sequencing, and bioinformatic analysis in addition to standard microbiological and pathology procedures. The overall goal of the project is to develop novel intervention strategies that prevent or control tuberculosis in domestic livestock or other reservoir hosts.

Learning Objectives: As a result of this training, the participant will learn



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steps for identification of specific genes for modification that may influence in vivo properties of the vaccine strain, how to characterize immunologic responses to vaccine candidates in a natural host, and steps for commercial development of a new vaccine against an intracellular bacteria.

Mentor(s): The mentor for this opportunity is Steven Olsen (steven.olsen@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: March 2023. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for six months, but may be renewed 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 ORISE.ARS.Midwest@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.

Preferred Skills:

- Preferred candidate will be greater than 5 years after completion of PhD with demonstrated capability to perform infectious disease research including being author or co-author on peer-reviewed manuscript.
- Expertise in bacterial diseases and demonstration of knowledge in immunology and vaccine development.

Eligibility • **Degree:** Doctoral Degree.

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- Requirements**
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([3](#) 👁)