Opportunity Title: USDA-ARS Postdoctoral Fellowship in Molecular Biology, Immunology and Microbiology
Opportunity Reference Code: USDA-ARS-2022-0376

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0376

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 package 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
- Two educational or professional recommendations. Applications need at least one recommendation submitted in order to be viewed by the mentor.

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

Application Deadline 6/5/2023 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) at the Western Regional Research Center (WRRC) located in Albany, California.

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: Foodborne pathogens cause 9.4 million cases of sickness and cost the economy $15.5 billion each year. There are no FDA-approved therapies for many foodborne illnesses. Lactic acid bacteria (LAB)-based oral vaccines have been shown to be able to induce both mucosal and systemic immune responses.

The participant will be stationed in a laboratory at the WRRC and carry out an independent research project that includes construction of recombinant LAB vectors that carry bacterial virulence factors and transforming them into LAB strains. Expression of LAB-derived therapeutic agents will be

accessed by western blot and ELISA analyses.

Learning Objectives: In the mentor's laboratory, the selected candidate will have the opportunity to practice cloning, expression, and purification of recombinant proteins in LAB and utilize engineered LAB to express oral vaccines *in vivo*.

Mentor: The mentor for this opportunity is Xiaohua He (xiaohua.he@usda.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: January 2023. 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 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.PacificWest@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 with completion before June 20, 2023. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Hands-on experience in microbiology, immunology and molecular biology techniques such as PCR, ELISA, Western blot, cloning, expression, and purification of proteins in bacterial systems.

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- Experience in working with small animals.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/20/2023 12:00:00 AM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (6 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).