

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Microbiology and Food Safety

Opportunity Reference Code: USDA-ARS-2022-0339

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0339

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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 7/31/2023 11:36:27 AM Eastern Time Zone

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

ARS Office/Lab and Location: One postdoctoral research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS) within the Western Regional Research Center (WRRC), Foodborne Toxin Detection and Prevention Research Unit, located in Albany, CA, through the ORISE Program to conduct experiments aimed at developing and characterizing antibodies against foodborne toxins produced by plant, bacterial, and fungal toxins.

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: In the United States, an estimated 48 million cases of foodborne illnesses occur annually according to the USDA-ARS - with many of these cases having negative impacts on public health and the economy. Foodborne pathogens cause 9.4 million of these cases and cost the economy \$15.5 billion each year. Toxins are the major contributor of various foodborne illnesses, thus the detection of bacterial and non-bacterial toxins in foods is vital for food safety and food defense.

The participant will be stationed in a laboratory at the Western Regional Research Center (WRRC) and carry out an independent project that



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includes: 1) developing and/or characterization of antibodies for toxins produced by plant, bacterial, and fungal pathogens; 2) establishing sensitive, rapid, and thermally stable immunoassays including traditional ELISA-based and/or novel platforms (biosensors, etc.) for detection of toxins present in the environment as well as food matrices; and 3) establishing in vitro as well in vivo animal models of infection to determine the protective effect (if any) of the antibodies developed.

Learning Objectives: In the mentor's laboratory, the selected candidate will have the opportunity to practice cloning, expression and purification of recombinant proteins; develop and characterize monoclonal antibodies; develop/use in vivo assays as well in vivo small animal models of infection to determine if there is a protective effect of antibodies of interest; and develop and characterize immunoassays for field uses.

Mentor(s): The mentor for this opportunity is Christina Tam (christina.tam@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Fall - Winter 2022. 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. **The participant will receive a stipend of \$81,338 per year. The participant will receive a health insurance stipend of \$6,752 per year if eligible.**

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@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 (e.g. Microbiology, Molecular Biology, Immunology, etc.), or be currently pursuing the degree with a completion by November 1, 2022.


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Preferred skills:

- Hands-on experience with microbiology and molecular biology techniques for DNA and protein analysis in bacterial systems
- Experience with antibody development (traditional hybridoma technology, Yeast surface display, etc)
- Experience with in vitro cell-based assays and/or in vivo animal models of infection

- Eligibility Requirements**

- **Degree:** Doctoral Degree.
 - **Discipline(s):**
 - **Life Health and Medical Sciences** ([9](#) )