

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship in Biochemistry of Prion Diseases

**Opportunity Reference Code:** USDA-ARS-2022-0212

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** USDA-ARS-2022-0212

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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** 5/31/2022 3:00:00 PM Eastern Time Zone

**Description** **\*Applications are reviewed on a rolling-basis, and this posting could close before the deadline.**

**ARS Office/Lab and Location:** A research opportunity is currently available with the ARS-Animal Disease Research Unit (ADRU) located in Pullman, Washington within the Animal Disease Biotechnology Facility on the main campus of Washington State University.

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:** Multiple projects are conducted at the ADRU, including a project to develop genetic approaches and tools to prevent, control, and eradicate transmissible spongiform encephalopathies – better known as prion diseases – in animals.

A primary goal of the prion disease project is to optimize and mitigate potential inhibitory factors of misfolding assays for prion detection. An additional goal is to develop novel misfolding assay substrates and buffers to optimize the detection and differentiation of prion strains. These improvements will provide sensitive detection of prions in preclinical animals and expand detection to sample types incompatible with current methods.



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The project has a training opportunity in advanced molecular biology techniques and data analysis. Under the guidance of a mentor, participant activities will include:

- Performing laboratory research related to the detection of prions in tissues collected from small ruminants, cervid species, and transgenic mice.
- Performing laboratory research related to optimizing the recovery of prions from various tissues and the conditions of prion protein misfolding reactions.
- Mentored data analysis and scientific writing
- Mentored presentation of research results at meetings

**Learning Objectives:** The participant will develop and expand their professional knowledge of molecular biology, prion replication, prion protein misfolding and aggregation, prion protein misfolding assays, and molecular interactions of prion proteins with other molecules by performing hands-on experiments. The participant will have the opportunity of publishing scientific articles describing: 1) The molecular interactions of heme with prions; 2) Strategies to mitigate the interference of heme in misfolding assays; 3) Optimized protocols for sensitive detection of prions in various samples from cervids and small ruminants. Moreover, this project will enhance the participant's capability to participate collaboratively to design, plan, and implement approaches to solve livestock problems, which will give them expertise that can be used in different but related research fields.

**Mentor(s):** The mentor for this opportunity is David Schneider ([david.schneider1@usda.gov](mailto:david.schneider1@usda.gov)). If you have questions about the nature of the research please contact the mentor.

**Anticipated Appointment Start Date:** June 1, 2022. Start date subject to change based on a variety of reasons, and start date may be flexible to accommodate the needs of a qualified candidate.

**Appointment Length:** The appointment will initially be for two years, but may be extended 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 only.

**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](mailto:USDA-ARS@ornl.gov) and include the reference code for this

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opportunity.

**Qualifications** The qualified candidate should have received a doctoral degree in one of the relevant fields.

- A strong background in biochemistry, especially that related to heme, structural biology, or prion biology
- Experience in a broad array of molecular biology techniques including heme assays, cell culture, protein expression, and western blotting

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Doctoral Degree.
  - **Discipline(s):**
    - **Chemistry and Materials Sciences** ([1](#)👁)
    - **Life Health and Medical Sciences** ([5](#)👁)
    - **Mathematics and Statistics** ([2](#)👁)