

Opportunity Title: USDA-ARS Postdoctoral Research Fellowship in Alternative Proteins Using Machine Learning

Opportunity Reference Code: USDA-ARS-PW-2023-0386

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-PW-2023-0386

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A complete application consists of:

- An application
- Transcripts – [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 2/2/2024 3:00:00 PM Eastern Time Zone

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

ARS Office/Lab and Location: A Postdoctoral Research Associate appointment is available with the U.S. Department of Agriculture (USDA) Agriculture Research Service (ARS) through ORISE located in Albany, California. This on-site training opportunity is available in GrainGenes (<https://wheat.pw.usda.gov>), which is a centralized repository for wheat, barley, oat, and rye. GrainGenes is funded by the U.S. Department of Agriculture-Agricultural Research Service to ensure long-term data sustainability, and is located in the beautiful San Francisco Bay Area.

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: One of the most fundamental issues for agriculture is to ensure food abundance and security worldwide on a continuous basis. Increasing human population, disruption of supply chain networks by natural disasters and wars, and unpredictable effects of climate change significantly impact food security and strain our ability to provide food globally. Alternative proteins such as plant-based products mimicking meat products have the potential to provide a superior way to bolster and expand food supply networks. The candidate will use machine learning and artificial intelligence approaches to predict improved properties of plant-based products to facilitate their production and contribute to the efforts of their adoption by consumers.



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Learning Objectives: Under the guidance of a mentor and in a highly collaborative environment, the participant will have the opportunity to gain experience and learn about the challenges of using hybrid machine learning approaches to ensure global food abundance.

Mentor: The mentor for this opportunity is Taner Sen (taner.sen@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: Q1 2024. 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 a second 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. **The selected applicant will receive a stipend of \$65,000 per year as support for their living and other expenses during this appointment. In addition to stipend, the participant will also be given a health insurance stipend supplement up to \$10,000 per year, and a scientific travel allowance up to \$3,000 per year.**

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 currently be pursuing the degree to be received by start of appointment.

Preferred Skills include:

- Demonstrated experience and publication record in computational biology

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- Demonstrated experience and publication record in machine learning
- Demonstrated experience with computer programming for scientific research and expertise with UNIX/LINUX command line
- Ability to work independently, as well as part of a team, while building and nurturing collaborations with external research groups
- Excellent written and verbal communication skills to disseminate research findings and keeping team members and collaborators informed
- Experience/education/publication in food science is a plus.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#))
 - **Computer, Information, and Data Sciences** ([17](#))
 - **Engineering** ([27](#))
 - **Environmental and Marine Sciences** ([14](#))
 - **Life Health and Medical Sciences** ([48](#))
 - **Mathematics and Statistics** ([11](#))
 - **Physics** ([16](#))