Opportunity Title: USDA-ARS Pulse Plant Genetic Resources, Population Genetics and Breeding
Opportunity Reference Code: USDA-ARS-PWA-2026-0308

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-PWA-2026-0308

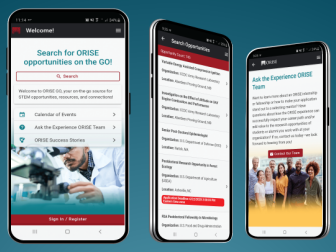
How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

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.

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Application Deadline 10/9/2026 3:00:00 PM Eastern Time Zone

Description ***Applications are 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 Pullman, Washington.

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: Temperate pulses (i.e. peas, chickpeas and lentils) are important plant-based protein sources and rotational crops, and their plant genetic resource (PGR) collections contain important genetic diversity for crop improvement. Improved methodology for regenerations would increase efficiency of the genebanks. Systematic and thorough genotypic and phenotyped characterization would improve collection utility and aid in Genomewide Association Studies (GWAS).

Objective: Apply high-throughput genomics and phenomics tools to

characterize the USDA ARS National Plant Germplasm System (NPGS) pea, lentil and chickpea collections, (up to ~9,000 accessions). Research seed viability testing, regeneration protocols including breaking dormancy of crop wild relative species, and more efficient long-term seed storage conditions. Data analyses including data handling, filtering, and calculations of genetic diversity, relationships, and GWAS. Upload data into public databases to ensure all data becoming publicly available.

Approach: During the educational appointment, you will collaborate closely with Washington State University pulse breeders and geneticists, PGITRU unit members and established USDA ARS/academic collaborators while conducting research. The pulse collections will be characterized during regeneration activities in the field in Pullman and Central Ferry, Washington. Genotyping activities will be outsourced, and data receipt and initial quality assessment will be coordinated with the genotyping service institution. You will receive sequence/genotype data, conduct analyses to survey variation, calculate relationships, and other relevant analyses of genebank accessions. High-throughput analyses of agronomic traits and seed nutritional traits can be complimented with measurements of biotic and/or abiotic resistance following standard phenotyping protocols. You will interact with collaborators to upload genotypic and phenotypic data directly into the GRIN-Global database or to link all data via an external public platform for access. The program has office, laboratory, greenhouse, field space, equipment, and supplies for planned experiments. Staff, collaborators, and lead scientists will support you in technical aspects of project.

Expected Results: New genetic and phenotypic characterization of the temperate pulse PGR would improve collection management and promote its efficient use. Results include:

- Estimating genetic diversity and population structure among and between all accessions in the collection,
- Correct accession taxonomic assignments,
- Redundancy identification leading to increased efficiency,
- Gaps in coverage revealed leading to targets for acquisition, and;
- Aptly characterized PGR accessions in collections that can be used to identify subsets of variation for in-house and stakeholder mining of beneficial alleles in pre-breeding.

This last result will allow US breeders to create new varieties that are more nutritious, require fewer chemical or irrigation inputs, and be more resistant to new insect, disease, or environmental threats, thus increasing farmer profits. With fully characterized collections, breeders and geneticists can request the best accessions for their research programs, including expanded marker trait associations via GWAS and breeding of new cultivars for all traits of interest. Characterization of the pulse collection can aid in effective management of this important resource while improving and promoting its use by stakeholders.

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Learning Objectives: As a result of this experience, you will:

- Learn how to measure, analyze, and use the genetic diversity in the USDA National Plant Germplasm System pulse collection,
- Learn phenomics and phenotyping approaches in greenhouse and field experiments,
- Learn approaches used for marker traits associations in crop plants, and;
- Develop skills in communication (writing, presenting, etc.), collaboration and in conducting scientific research.

Mentor(s): The mentor for this opportunity is Marilyn Warburton (marilyn.warburton@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: August 31, 2026. 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.

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 ORISE.ARS.PacificWest@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received or be currently pursuing a doctoral degree in one of the relevant fields.

Preferred skills:

- Experience with agricultural plant sciences, plant genetic resources, forage legumes, plant genetics, plant breeding, molecular biology, bioinformatics, and data management.
- Organizational capacity for curating, cataloging, and storing large amounts of data, samples, such as seeds, plants or DNA.
- Experience caring for plants in the field, greenhouse, and growth chamber.
- Attention to detail in data collection and record keeping.

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- Team player and comfortable with communication through phone, email, and in person to coordinate with collaborators locally and in other offices and states.
- Consistency, timeliness, and independence.

Stipend $7,059.00 – $7,859.00 Monthly

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (7 👁)