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Opportunity Title: USDA-ARS Postdoctoral Research Fellowship in Cranberry Breeding and Genetics
Opportunity Reference Code: USDA-ARS-NE-2023-0212

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2023-0212

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 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 7/21/2023 3:00:00 PM Eastern Time Zone

Description ***Applications are reviewed on a rolling-basis.**

ARS Office/Lab and Location: A postdoctoral research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), within the Genetic Improvement for Fruits and Vegetables Laboratory. The primary location of the opportunity is flexible between New Brunswick, NJ and/or Chatsworth, NJ.

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: Research in the Neyhart Lab focuses on cranberry and blueberry pre-breeding and genetics. Our research goals are to i) understand the genetics of complex traits in cranberry, ii) discover new ways to breed cranberries and other *Vaccinium* species, and iii) produce improved cranberry and blueberry germplasm for cultivar development programs. To do this, we use a foundation in quantitative genetics and plant breeding principles, along with new technologies such a genomics and phenomics.

We are seeking an independent and energetic scientist to investigate the application of genome-wide selection for pre-breeding in cranberry and (optionally) blueberry. Research may include simulations to design breeding schemes, model building and evaluation using available historical and contemporary phenotypic data, training population optimization, and investigation of genomics-assisted cross selection. Target traits could include productivity, fruit quality, disease resistance, and/or abiotic stress tolerance. Genomic resources in cranberry and blueberry are well-situated for

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this research - physical reference genomes, linkage maps, and genome-wide SNP marker arrays are all available for both crops.

Learning Objectives: Through this opportunity, the Fellow will improve their skills in quantitative and statistical genetics, plant breeding simulations, and/or applied plant breeding methods. The Fellow will collaborate closely with the USDA-ARS cranberry pre-breeder to learn about stakeholder needs, the breeding pipeline, and selection decisions. Additional opportunities will be available to collaborate with multiple USDA-ARS and University scientists to develop/deploy genomewide prediction models for specific regions or target populations. The Fellow will be expected to write collaborate research papers and prepare poster/oral presentations concerning genomewide prediction model evaluation and optimal breeding schemes for deploying genomewide prediction. Opportunities for interactions with stakeholders, including growers and industry end-users, will be plentiful.

Mentor: The mentor for this opportunity is Jeffrey Neyhart (jeffrey.neyhart@usda.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: As soon as a qualified candidate is identified. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for two years, 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 current stipend range for this opportunity is $69,021 - $80,769 depending on experience and the primary location. Health insurance premiums for an individual plan will also be compensated.**

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR).

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.Northeast@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 30, 2023. Degree must have been received within the past five years.

Preferred skills:

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- Experience applying genomic data in a breeding program or conducting genetic studies in annual or perennial crops
- Excellent organizational, interpersonal interaction, and communication skills
- Experience in genome-wide prediction, genome-wide association analysis, QTL mapping, high-throughput phenotyping, or analyzing other high-dimension data is preferred
- Fluency in R, Python, or another analytic computing language is preferred

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/30/2023 11:59:00 PM.
- **Discipline(s):**
  - **Life Health and Medical Sciences** (13 👁)
  - **Mathematics and Statistics** (3 👁)