

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship in Molecular Genetics

**Opportunity Reference Code:** USDA-ARS-2021-0100

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

**Reference Code** USDA-ARS-2021-0100

**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** 7/5/2021 3:00:00 PM Eastern Time Zone

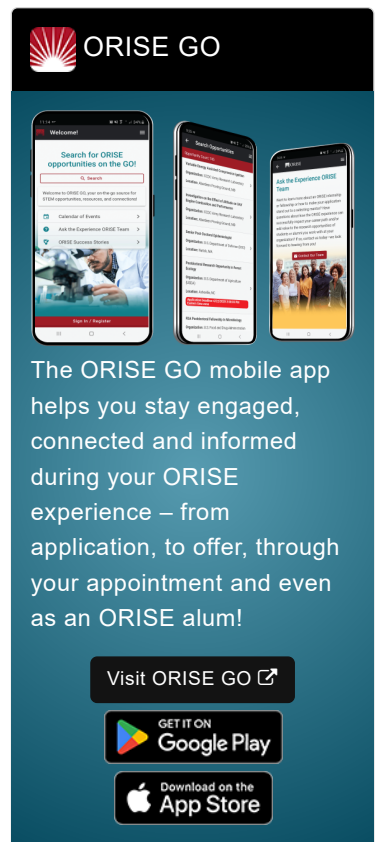
**Description** \*Applications are reviewed on a rolling-basis and this posting could close before the deadline.

**ARS Office/Lab and Location:** A postdoctoral research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Genetic Improvement of Fruits and Vegetables Laboratory located in Beltsville, Maryland.

**Research Project:** Blueberry and cranberry are closely related fruit crops within the genus *Vaccinium*. Production and consumption of both have increased in recent years due to their many health benefits. The overall goal of this project is to build upon genomic resources that have been recently developed in blueberry and cranberry to identify genes associated with traits of horticultural significance in both crops, such as fruit quality, chilling requirement, and cold hardiness. Identifying genes associated with these traits will help in the future development of marker-assisted selection strategies for breeding new cultivars.


**Learning Objectives:** This appointment will allow the postdoctoral candidate to participate in gene expression studies designed to identify differentially expressed genes during fruit ripening and during cold acclimation in *Vaccinium* genotypes with contrasting fruit quality traits and contrasting cold hardiness levels, respectively. The candidate will help develop and analyze RNA-seq data to identify differentially expressed genes. The candidate will learn how to extract RNA from fruit and flower buds of woody perennials and perform real-time qPCR on the best candidate genes for controlling fruit ripening-related traits and for controlling cold hardiness of flower buds. Candidate genes for these traits will also be identified by their proximity to previously identified quantitative trait loci (QTL). The postdoctoral candidate will learn how to take the latest QTL mapping results (for fruit quality, chilling requirement, and cold hardiness traits) from blueberry and cranberry, along with the best genome assemblies from both blueberry and cranberry, to identify genes in the proximity of major QTL. Real-time qPCR will be performed on the best candidate genes to test


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whether their expression is associated with the traits in question. The postdoctoral candidate will also gain valuable experience writing up and presenting their research findings.

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

**Anticipated Appointment Start Date:** July 2021. 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 annual stipend will be \$57,510 and a health insurance allowance of \$6,078 will also be provided per year.**

**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 opportunity.

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

Preferred skills:

- Knowledge of basic plant science, genetics, genomics, and molecular biology
- Laboratory experience working with nucleic acids, experience extracting DNA and RNA
- Demonstrated experience in bioinformatic techniques
- Demonstrated experience in design of experiments and development of laboratory protocols
- Ability to work independently as well as part of a team, with good communication skills to keep team members informed and disseminate results at meetings and refereed journals

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Doctoral Degree.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([1](#) )
    - **Life Health and Medical Sciences** ([6](#) )