

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship in Cotton Fiber Bioscience

**Opportunity Reference Code:** USDA-ARS-SEA-2025-0021

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

**Reference Code** USDA-ARS-SEA-2025-0021

**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** 7/4/2025 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 New Orleans, Louisiana.

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:** The Cotton Fiber Bioscience & Utilization Research Unit studies the biology of cotton fiber development and uses the gained knowledge for cotton varietal improvement. Under the guidance of a mentor, the participant will conduct original research to understand how cotton fiber develops using genetic, genomic and molecular biological techniques.

The overall objective of this project is to help develop novel genomic tools and approaches to enhance the development of new cotton genotypes with



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improved fiber properties. The specific research activities for the participant includes:

- To use bioinformatics and statistical tools to understand cotton fiber biological processes by analyzing DNA/RNA sequences and phenotypic data from numerous informative cotton populations;
- To identify useful genetic markers and ultimately causative genetic variants that can be used in breeding;

**Learning Objectives:** The participant will develop an understanding of cotton fiber development such as elongation and maturation. In addition, they will learn how to use cutting edge bioinformatic techniques to identify genetic markers associated with fiber quantitative trait loci (QTL), and to reveal genes controlling fiber development processes. Learning opportunities will include QTL identification, application of novel bioinformatic software and statistical tools, transcriptome analysis, as well as field and greenhouse experiments. To accomplish this, the participant will collaborate with a research team that includes geneticists, molecular biologists, plant physiologists, and computational biologists. When completed, the participant will have a thorough understanding of cotton fiber development processes, and have had opportunities to present research findings to stakeholders and academic conferences.

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

**Anticipated Appointment Start Date:** **March 17, 2025.** 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.

**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. Foreign national candidates may have a mandatory in-person requirement depending on visa status.

**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,

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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.Southeast@orau.org](mailto:ORISE.ARS.Southeast@orau.org) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should be currently pursuing or have received a doctoral degree in the one of the relevant fields. Degree must have been received within the past five years or is anticipated to be received by 6/1/2025.

**Preferred skills:**

- Proficiency with R and Python programming languages, Linux shell scripting, and Conda environments.
- Experience in analyzing DNA/RNA sequences using bioinformatic tools.
- Ability to recommend and apply appropriate statistical analyses to various types of data.
- Experience in conducting field crop genetics research.
- Experience in conducting research in the areas of molecular biology and genomics.
- An understanding of how genetic and environmental factors influence plant growth and development.

**Point of Contact** [Janeen](#)

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/1/2025 11:59:00 PM.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([17](#) )
    - **Life Health and Medical Sciences** ([37](#) )
    - **Mathematics and Statistics** ([1](#) )

**Affirmation** I affirm that:

I am a US Citizen, OR;  
I am a non-US citizen currently living in the United States