

Opportunity Title: USDA-ARS Postdoctoral Cotton Fiber Characterization and Performance Fellowship

Opportunity Reference Code: USDA-ARS-SEA-2026-0335

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-SEA-2026-0335

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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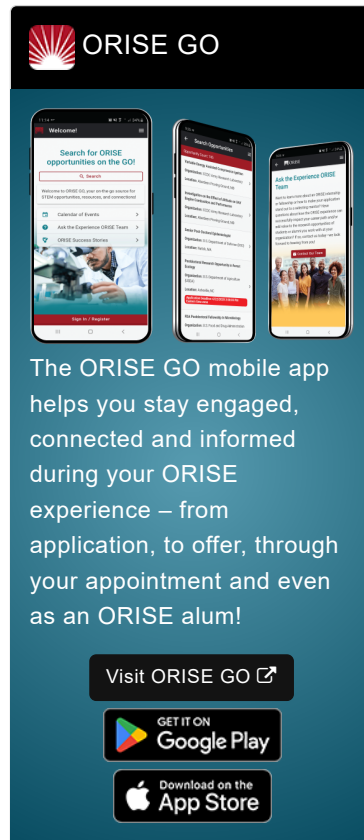
Application Deadline 10/30/2026 3:00:00 PM Eastern Time Zone

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 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: Under the guidance of experienced mentors, you will contribute to research focused on advancing the characterization and performance evaluation of natural fibers, with an emphasis on cotton. Activities will include analyzing cotton fiber surface chemistry (such as moisture, wax, and pectin content), assessing crystallinity, preparing samples, and operating instruments used to measure fabric drape. Drape is an important fabric characteristic because it affects how a material hangs, flows, and interacts with the human body—making it a key factor in both product performance and consumer satisfaction. You will also apply



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statistical and machine-learning tools to explore how cotton fiber properties influence drape behavior and identify the most predictive traits for evaluating fabric performance. Machine-learning tools may also be used to examine whether certain fiber traits associated with drape have underlying genetic components, helping researchers better understand how plant genetics and fiber quality interact. You will engage in a collaborative, multidisciplinary research program spanning chemistry, plant science, engineering, textile technology, and data science. This team is dedicated to developing and improving methods for assessing cotton fiber quality across production, processing, and end-use performance. Through this experience, you will gain hands-on exposure to analytical instrumentation, quantitative analysis, and modern predictive modeling techniques.

Learning Objectives: Under the guidance of a mentor you will:

- Deepen expertise in cotton fiber chemistry and structure, gaining advanced training in analyzing moisture, wax, pectin content, crystallinity, and related functional traits under mentor guidance.
- Strengthen capabilities in analytical instrumentation, including hands-on experience preparing samples and operating tools used to measure fabric drape and evaluate fiber quality.
- Apply advanced statistical and machine-learning approaches to explore relationships between fiber properties, drape behavior, and potential genetic influences, with mentor support in methodological selection and interpretation.
- Integrate concepts across multiple disciplines—chemistry, plant science, engineering, textile technology, and data science—to evaluate fiber performance and contribute to collaborative research questions.
- Refine quantitative analysis and predictive modeling skills, learning modern approaches for identifying key fiber traits linked to material performance.
- Develop postdoctoral-level scientific communication competencies, including preparing manuscripts, presenting research findings, and engaging effectively within a multidisciplinary research team.

Mentor(s): The mentors for this opportunity are Yongliang Liu (yongliang.liu@usda.gov) and Michael Santiago (michael.santiago@usda.gov). If you have questions about the nature of the research, please contact the mentors.

Anticipated Appointment Start Date: November/December 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.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. **The anticipated stipend range is \$71,678.04 – \$74,678.04 yearly.**

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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.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 one of the relevant fields (e.g. Textile or Materials Science, Chemistry, Agricultural or Mechanical Engineering or a closely related field).

Preferred skills:

- Experience and knowledge with property measurement and processing of natural or synthetic textile material.
- Experience in understanding and application of chemical instruments including HPLC, FTIR, and fiber/fabric quality testing systems.
- Proficient with Microsoft Office Software.
- Familiarity with statistical analysis and machine learning applications in textile industry is considered a plus.

Stipend \$71,678.04 – \$74,678.04 Yearly

Point of Contact [Sara Beth](#)

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Doctoral Degree.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** (4👁)
 - **Computer, Information, and Data Sciences** (2👁)
 - **Engineering** (3👁)
 - **Life Health and Medical Sciences** (3👁)
 - **Mathematics and Statistics** (1👁)
 - **Science & Engineering-related** (1👁)
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).