Opportunity Title: USDA-ARS Research in Phytochemical Metabolomics and Nutritional Health
Opportunity Reference Code: USDA-ARS-NEA-2026-0187

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NEA-2026-0187

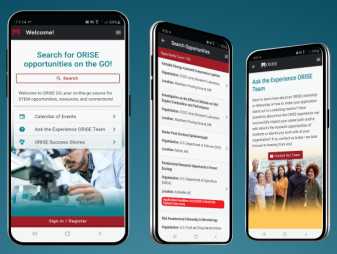
How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

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
- A copy of an abstract or reprint of an article

All documents must be in English or include an official English translation.

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Application Deadline 8/28/2026 3:00:00 PM Eastern Time Zone

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

ARS Office/Lab and Location: Four student research internship opportunities are currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), located in Beltsville, Maryland.

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 participant will engage in a multi-faceted research initiative exploring the relationship between health-promoting bioactive components (such as resistant starch, micro-nutrients,phytochemicals) and their biological impacts. This project focuses on how variables like growing conditions and processing affect these components in foods like coffee, fruits, vegetables, and beans, and further investigates their bioavailability and interaction with the gut microbiome. Under the mentorship of a multi-

disciplinary team, the participant will have the opportunity to:

- Participate in ongoing research projects addressing the contents of bioactive components in various food matrices and their subsequent physiological impact on health.
- Research and Analyze samples (food and biological matrices such as blood or feces) using non-targeted and targeted metabolomic methodologies via LC/MS and GC/MS techniques.
- Collect and Curate post-analysis data, collaborating with bioinformatics scientists to identify biomarkers and metabolic mechanisms impacted by dietary consumption.
- Refine and Optimize high-performance liquid chromatography (HPLC) and mass spectrometry methods to enhance the sensitivity and accuracy of phytochemical metabolite identification.
- Utilize Bioinformatics Tools to identify key metabolites involved in plant biosynthetic pathways and host metabolism.
- Contribute to a multi-omics analytical approach—integrating transcriptomics, metagenomics, and metabolomics—to elucidate the impact of diet on immune responses and gut microbiome health.
- Collaborate with a team of experimental biologists, nutritionists, and computational scientists to apply a holistic approach to study design and the interpretation of biological data.

Learning Objectives: The participant will receive hands-on experience in cutting-edge metabolomic profiling and quantification of phenolic compounds, flavonoids, and glucosinolates. This project provides a unique opportunity to gain knowledge on how a federal scientific laboratory functions and how interdisciplinary science is used to solve complex nutritional questions. By the conclusion of the project, the participant will have gained advanced technical experience in non-targeted metabolomics and the role of the gut microbiome in human health.

Mentor(s): The mentors for this opportunity are Gloria Solano-Aguilar (gloria.solano-aguilar@usda.gov) and Jianghao Sun (jianghao.sun@usda.gov). If you have questions about the nature of the research, please contact the mentors.

Anticipated Appointment Start Date: September 1, 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 is $7,120.58 monthly, with a health insurance per month of $1,472.96 and relocation limited to $5,000.**

Citizenship Requirements: This opportunity is available to U.S. citizens

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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.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. Degree must have been received within the past five years.

Preferred skills:

- Experience with analytical chemistry and metabolomic analysis is preferred.

Stipend

$7,120.58 Monthly

Point of Contact

Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 8/31/2026 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Life Health and Medical Sciences** (3 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).