

Opportunity Title: USDA-ARS Plant Metabolomics Fellowship

Opportunity Reference Code: USDA-ARS-2022-0307

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2022-0307

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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.

Application Deadline 10/31/2022 3:00:00 PM Eastern Time Zone

Description ***Applications may be 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 Madison, Wisconsin.

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 goals of the research project are to 1) characterize changes in primary and secondary metabolites during barley malting using a combination of LC-MS/MS, GC-MS/MS, and HPLC and 2) identify genetic, environmental, and malt quality factors associated with these metabolic profiles. Special attention will be given to the metabolite profile of dry seed and kilned stages as these represent the malting input from farmers and the malting output to brewers and distillers, respectively.




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Learning Objectives:

- The participant will gain/increase expertise in experimental design, data collection, statistical analyses, and data presentation.
- The participant will gain extensive, hands-on experience in plant metabolomics:
 - Extraction, derivatization (for GC-MS), and chromatographic method development/optimization
 - Metabolite annotation of detected analytes
 - Statistical analysis of results
 - Interpretation of quantitative and qualitative results in the context of biochemical pathways, genetics, and environmental stresses
- The participant will be encouraged to publish in peer-reviewed scientific journals, to present posters, and to give presentations of their research.

Mentor: The mentor for this opportunity is Sarah Whitcomb (sarah.whitcomb@usda.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: 2022. 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.

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.

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@orau.org and include the reference code for this opportunity.

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Qualifications

The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing one of the degrees with completion before the appointment start date. Degree must have been received within the past five years.

Preferred Skills:

- Experience working with metabolomics data generated by GC-MS and/or LC-MS platforms
- Experience operating HPLC, GC-MS and/or LC-MS instruments highly preferred

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (5 )
 - **Life Health and Medical Sciences** (16 )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).