

Opportunity Title: USDA-ARS Postdoctoral Research Opportunity in Plant Metabolism

Opportunity Reference Code: USDA-ARS-2021-0018



Organization U.S. Department of Agriculture (USDA)

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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. All transcripts must be in English or include an official English translation. 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 1/6/2021 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 research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Plant Genetics Research Unit located in St. Louis, Missouri.

Research Project: The research group is focused on understanding primary metabolism in plants that can lead to value-added crops with enhanced productivity. This project aims to study crops (tobacco, soybean) that have been genetically altered for increased yield and biomass production. Specifically, genes in the photorespiratory pathway have been genetically removed and/or replaced to circumvent energetic and carbon costs associated with this biochemical pathway and to enhance photosynthesis.

Learning Objectives: Under the guidance of a mentor, the participant will learn to design and perform experiments that elucidate the changes in central carbon metabolism that can account for the enhanced crop productivity. Isotopic labeling strategies and computational metabolic flux analysis will be used to establish the differences in metabolism quantitatively and support bigger initiatives of the grant to further improve crop productivity with consideration to canopy and field conditions. The participant should have a background in mass spectrometry and plant metabolism and the participant will have the opportunity to significantly improve their skills in these areas by addressing questions in plant biology on metabolism.

The participant will be part of a team of post-docs and professors on the Realizing Improvements in Photosynthetic Efficiency (RIPE) project, which broadly aims to model and manipulate photosynthesis to increase crop yields. He/she will participate and present research in RIPE meetings as well as ARS unit meetings and will be able to take advantage of opportunities to participate in outreach through interactions with scientists and students at the Donald Danforth Plant Science Center.

Mentor(s): The mentor for this opportunity is Doug Allen (doug.allen@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment(s) 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(s) will receive a monthly stipend commensurate with educational level and experience.

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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.

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

Preferred skills:

- Prior experience with mass spectrometry and a background in plant metabolism
- Interest in photosynthesis and 'green' systems
- Experience collaborating on or with teams and teaching others
- Strong oral and written communication skills

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Engineering** (3 👁)
 - **Environmental and Marine Sciences** (2 👁)
 - **Life Health and Medical Sciences** (3 👁)