Opportunity Title: USDA-ARS Research Opportunity in Chemistry
Opportunity Reference Code: USDA-ARS-2021-0159

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2021-0159

How to Apply

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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 8/2/2021 3:00:00 PM Eastern Time Zone

Description

***Applications may be 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), Eastern Regional Research Center located in Wyndmoor, Pennsylvania.

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 mentor's research primarily focuses on developing value added products from agricultural biomass and also controlling the degradation of the natural products/byproducts. Animal fats and crop residues are targeted renewable feedstocks to produce valuable ingredients for different industries such as lubricant, antimicrobial, nutraceuticals and cosmetics. The research group is focused on three types of challenges:

- Developing new products through chemical modification from agricultural waste or low-valued byproduct.

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- Chemical analysis for structural determination and performance evaluation of the developed products
- Scale up synthesis of the product developed at lab scale.

The research participant will be involved in: Chemical synthesis of value added products from agricultural waste/byproducts. Qualitative and quantitative analysis of newly developed products using different analytical tools such as NMR, HPLC, Prep HPLC, GC-MS, FTIR, AA. Within certain constraints, the participant will have considerable freedom to determine how the project goals will be achieved. Research is primarily laboratory based, but pilot plant experiments are also conducted. The participant will perform research under the supervision of the mentor.

Learning Objectives:

- Developing the operating skills on HPLC, GC-MS, Preparative HPLC and many other analytical instruments
- Gathering knowledge on developing new methods for chemical analysis
- Developing skills on new functional lipid synthesis

Mentor(s): The mentor for this opportunity is Majher Sarker (majher.sarker@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: September 20, 2021. 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

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include the reference code for this opportunity.

Qualifications

The qualified candidate should be currently pursuing or have received a master's or doctoral degree in one of the relevant fields.

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Earth and Geosciences** (1 👁)
  - **Engineering** (3 👁)
  - **Environmental and Marine Sciences** (2 👁)
  - **Life Health and Medical Sciences** (6 👁)