Opportunity Title: USDA-ARS Biomass Thermochemical Conversion Process Research Opportunity
Opportunity Reference Code: USDA-ARS-NEA-2026-0325

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NEA-2026-0325

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 10/23/2026 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 Wyndmoor, PA.

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.

The Sustainable Biofuels and Co-Products Research Unit (SBCP) in Wyndmoor, PA, develops technologies that support new markets and increased profitability for U.S. agriculture. Researchers in SBCP advance chemical, catalytic, thermal, enzymatic, and fermentative technologies to convert low-value agricultural materials into high-value products such as biofuels, renewable chemicals and materials.

Research Project: This research project, in the biomass pyrolysis laboratory, focuses on developing a microwave-assisted pyrolysis process for producing bio-oils from biomass. The project aims to optimize reaction conditions for microwave pyrolysis of selected agricultural residues and analyze the energy efficiency and cost relative to conventional pyrolysis. You will participate in this research by conducting experimental pyrolysis experiments, performing analytical characterizations of products, and engaging in energy and cost evaluations.

Learning Objectives: You will gain experience, in a research setting, by assisting in microwave pyrolysis experiments, recording data, analyzing and summarizing data, preparing scientific

reports, and presenting research progress during group meetings. You will also gain hands-on experience with a variety of analytical techniques such as GCMS, elemental analysis, Karl Fisher titration, TGA and SEM.

During the appointment, You will:

- Learn about microwave heating technologies and biomass pyrolysis processes.
- Develop skills in statistical design of experiments.
- Gain experience with analytical techniques that support characterization of biomass feedstocks and pyrolysis products.
- Learn how to collect, organize and process data from analytical instruments and experimental analyses.
- Develop scientific communication skills by preparing scientific reports and presenting research progress to research unit.

Mentor(s): The mentor for this opportunity is Candice Ellison (candice.ellison@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for up to one year, but may be renewed upon recommendation of ARS and is contingent on the availability of funds.

Level of Participation: The appointment may be full time or part time, to be determined with the selected candidate.

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 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, or be currently pursuing a master's or doctoral degree in the one of the relevant fields, at an accredited U.S. college, university, or technical institute and maintain satisfactory progress in academic coursework.

Preferred Skills:

- Experience with biomass and bioproduct analysis using techniques including GCMS, elemental analysis, Karl Fischer, TGA, or SEM.

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- Familiarity with technoeconomic analysis is considered a plus.
- Statistical data analysis skills
- Scientific communication skills

Stipend $4,000.00 – $5,000.00 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree.
- **Minimum Overall GPA:** 3.00
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (10 👁)
  - **Engineering** (8 👁)
- **Age:** Must be 18 years of age
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).