

Opportunity Title: Postdoctoral Research Opportunity in Sweetcorn Volatiles

Opportunity Reference Code: USDA-ARS-2019-0023



Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2019-0023

How to Apply A complete application consists of:

- An application
- Transcripts – [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.

If you have questions, send an email to USDA-ARS@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 3/14/2019 3:00:00 PM Eastern Time Zone

Description A research opportunity is available with the the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Center for Medical, Agricultural and Veterinary Entomology (CMAVE), Chemistry Research Unit in Gainesville, Florida.

The mission of this project is to use integrated technologies to improve sweet corn production and marketability. The specific research problem the selected candidate will investigate is the function of plant volatile compounds and the potential tradeoffs between plant-insect interactions and consumer taste preferences in sweetcorn.

Under the guidance of a mentor, the participant will analyze sweetcorn volatiles using gas chromatography-mass spectrometry to determine flavor related aroma and herbivore induced volatile production of diverse sweetcorn lines. The participant will perform insect related bioassays to assess the effect of specific volatiles on insect attraction. The participant will also clone and characterize genes predicted to be involved in the production of specific volatiles or associated mechanisms.

The interdisciplinary nature of this project will allow the participant to strengthen or acquire skills in metabolomics, plant-insect interactions, molecular biology/genetics and biochemistry. In addition to technical skills, this opportunity will also involve monthly meetings with the larger team involved in this project consisting of over 20 researchers from at least 6 research institutions collaborating on various diverse aspects of the larger project increasing professional network and exposure to new methods and unfamiliar disciplines.

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. The initial appointment is for six months, but may be renewed for an additional year upon recommendation of ARS and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. A health insurance allowance will be provided to cover 50% of the participant's health insurance costs. Proof of health insurance is required for participation in this program. The appointment is full-time at ARS in the Gainesville, Florida, area. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits.

This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR).

For more information about the ARS Research Participation Program, please visit the [Program Website](#).

Qualifications The qualified candidate must have a doctoral degree in molecular biosciences, chemistry, plant biology, entomology or a related discipline.

Preferred skills/experience:



- Field and greenhouse based behavioral evaluation of plant-insect interactions
- Isolation, identification and quantification of chemicals utilizing techniques such as gas chromatography, mass spectrometry (GC/MS)
- Identification of plant genes or markers that correlate with the production of desired chemicals

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- Biochemical characterization of plant enzymes

**Eligibility
Requirements**

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (1 )
 - **Life Health and Medical Sciences** (6 )