

**Opportunity Title:** Molecular Biology/Chemistry Postgraduate Research

Opportunity

**Opportunity Reference Code:** ARS-FPSQRU-2016-0154-01

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** ARS-FPSQRU-2016-0154-01

**How to Apply** A complete application package 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. Selected candidate must provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded. All transcripts must be in English or include an official English translation.
- A current resume/CV

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

**Description** A postgraduate molecular biology/biochemistry/chemistry research opportunity is available with the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Food Processing & Sensory Quality Research Unit (FPSQRU) in New Orleans, Louisiana.

The participant will be part of a research team that conducts basic and applied research to characterize food allergens including cashew and pecan nut allergens, immunoglobulin-E (IgE) cross-reaction among allergens, and processing induced changes in allergens using immunoassay, chemical analysis, and molecular techniques. The overall objective is to use this information to enable commercial methods that can reduce or eliminate the allergenic properties of allergens and enable assay development to improve allergen detection.

The appointment is full-time for one year and may be renewed based upon recommendation of the ARS and availability of funding. The annual stipend rate for this position is \$35,609. A stipend supplement in the amount of \$6,153 is available to offset the cost of a health insurance plan. The participant must show proof of health and medical insurance. Health insurance can be obtained through ORISE. The participant will not enter into an employee/employer relationship with ORISE, ORAU, USDA, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the appointment through the ORISE appointment letter and Terms of Appointment.

While participants will not enter into an employment relationship with ARS, this position requires a pre-employment check and a full background investigation.

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



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program participation.

This is an equal opportunity program open to all qualified individuals without regard to race, color, age, religion, sex, sexual orientation, gender identity, national origin, mental or physical disability, covered veteran's status or genetic information.



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

**Qualifications** To be eligible, applicants must have received a master's or doctoral degree in molecular biology, food chemistry, biochemistry, chemistry, or related scientific field within five years of the desired starting date.

Responsibilities for the incumbent include the following examples of major activities:

- Participates in all phases of a program to characterize the chemical, biochemical, and molecular biological characteristics of seed storage protein allergens from cashew and pecan nuts by productively interacting with the lead scientist and performing a variety of laboratory and field experiments.
- Purifies or synthesizes reagents of interest that can be used in a variety of immunoassays to characterize and/or disrupt IgE binding to food allergens.
- Develops and conducts in vitro and in vivo studies to characterize allergens and allergen extracts.
- Conducts experiments for separation and identification of native and recombinant allergens from foods, plants, insects, or bacteria using a variety of chromatography procedures, including LPLC, that can be used to characterize cross-reaction among allergens.
- Conducts a variety of standard molecular biology techniques including: DNA cloning, DNA and RNA extraction, PCR and qRT-PCR, protein analysis (gel electrophoresis, western blot, immunohistochemistry, ELISA).
- Utilizes computer and appropriate software to collect, handle, and analyze data for the evaluation of the validity and significance of experiments conducted in the laboratory.
- Maintains detailed records of all research activities.
- Author or co-author manuscripts and reports for publication.

**Eligibility Requirements**

- **Degree:** Master's Degree or Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** ([2](#) )
  - **Life Health and Medical Sciences** ([5](#) )