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Opportunity Title: USDA-ARS Postdoctoral Fellowship in Honey Bee Nutrition and Microbiology
Opportunity Reference Code: USDA-ARS-2021-0061

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2021-0061

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store 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 6/18/2021 3:00:00 PM Eastern Time Zone

Description ***Applications may be 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), Honey Bee Breeding Genetics and Physiology Research Unit located in Baton Rouge, Louisiana.

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 the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: Honey bee health is threatened by parasites, pathogens, poor nutrition and pesticides. The mission of the USDA-ARS Honey Bee Breeding Genetics and Physiology Research Unit is to improve resistance (or tolerance) to threats that could mitigate these problems.

This opportunity is funded by the National Institute of Food and Agriculture - Agriculture and Food Research Initiative (NIFA-AFRI) Competitive Grants Program for the project "Microalgae as a Novel Platform to Improve Honey Bee Nutrition, Microbiome Health, and Disease Resistance". The proposed research aims to characterize microalgae for its nutritional and functional properties in honey bees, and to test select algal strains for their ability to augment bee health. The objectives are as follows: 1) Conduct a holistic assessment of the utility of microalgae to improve individual bee health. 2) Evaluate the use of a microalgae diet to improve bee health and sustainability of colonies involved in commercial pollination and queen production. 3): Test the potential of select microalgae strains to augment honey bee nutrition, immune function, and pathogen resistance.

Learning Objectives: Under the guidance of mentor Vincent Ricigliano, the participant may be involved in the following activities:

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- Study design for honey bee nutrition experiments involving natural and artificial diets
- Execution of laboratory and field experiments involving honey bee nutrition
- Experimental infection of honey bees with pathogens to understand nutrition-pathogen interactions
- Characterizing the effects of nutrition in different genetic stocks of honey bees
- Microbiological isolation of honey bee gut bacteria
- Maintenance and growth of microalgae cultures
- Honey bee gene expression analyses using qPCR and RNAseq
- Gut microbiome analyses of next generation sequencing data
- Drafting manuscripts and reporting experimental results

Mentor(s): The mentor for this opportunity is Vincent Ricigliano (Vincent.ricigliano@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Spring 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 extended up to three years, with renewal on an annual basis contingent on the availability of funds and project progress.

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 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 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, or be currently pursuing the degree with completion by September 1, 2021. Degree must have been received within five years of the appointment start date.

Preferred skills/experience:

- Honey bee handling and sampling experience
- Molecular biology techniques
- Analysis of data from laboratory and field studies
- Analysis of next generation sequencing data
- Microbiology techniques

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or

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anticipated to be received by 9/1/2021 11:59:00 PM.

- **Discipline(s):**
  - **Life Health and Medical Sciences** (15 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).