

Opportunity Title: USDA-ARS Bioinformatic Antimicrobial Discovery

Postdoctoral Fellowship

Opportunity Reference Code: USDA-ARS-2020-0130

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2020-0130

How to 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. 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 8/31/2020 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 postdoctoral research opportunity is available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Center for Agricultural Utilization Research (NCAUR) in **Peoria, Illinois** to identify novel antimicrobials that can be utilized in agriculture and biorefining.

The Renewable Products Technology (RPT) research unit at this location develops new technologies for converting agricultural materials into high value chemicals, enzymes, and polymers. In addition, the researchers in this group also study innovative antimicrobial methods that can be utilized to control microbial contamination in biorefining fermentations and create novel antimicrobial agents for application in agriculture.

Research Project: The global antibiotic market was valued at \$45 billion in 2018, but emerging resistance represents a significant threat to both the economy and health of humans and livestock. Current mitigation strategies include development of antibiotic adjuvants and alternative antimicrobial agents to combat this problem. The objective of this opportunity is to identify novel antimicrobials for biorefining and agricultural applications. Under the guidance of a mentor, the participant will utilize bioinformatic screening to identify genes involved in the synthesis of small molecule natural products, bacterial hydrolases, phage endolysins, and antimicrobial peptides. The participant will also support cloning efforts to overexpress candidate genes to optimize production of identified compounds and use them for testing antimicrobial activity.




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Learning Objectives: The participant will have the opportunity to learn about current methods of microbial control used in biorefining and agriculture, techniques for overproduction and analysis of antimicrobial agents, and procedures for structural analysis of novel compounds. They will also have the ability to interact with numerous scientists in our facility, travel to scientific meetings, and attend technical workshops.

Mentor(s): The mentor for this opportunity is Chris Skory (chris.skory@usda.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: **Summer 2020.** 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. **A health insurance allowance and an allowance for travel to scientific meeting to present research results will also be provided. Some relocation expenses may be reimbursed.**

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@ornl.gov and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received or will soon receive a doctoral degree in one of the relevant fields. Degree must have been received within five years of the appointment start date.

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Preferred skills:

- Skills in the use of commonly used bioinformatic programs, Linux and high-performance cluster environments, programming and scripting automation, analyses of large nucleic acid and protein datasets, genomic sequencing, and microbiological and molecular biology techniques
- Proficiency in technical writing for peer-reviewed publications and good interpersonal and public speaking skills, as demonstrated by documented publications and oral presentations

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Life Health and Medical Sciences** (16 👁)