

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Alternatives to Antibiotics

Opportunity Reference Code: USDA-ARS-2021-0120

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-2021-0120

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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.

Application Deadline 4/30/2022 3:00:00 PM Eastern Time Zone

Description *Applications are reviewed on a rolling-basis and this posting could close before the deadline.

ARS Office/Lab and Location: A postdoctoral research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Laboratory for Agriculture and the Environment (NLAE) located in Ames, Iowa.

The National Laboratory for Agriculture and the Environment (NLAE) is a multidisciplinary research facility focused on agricultural sustainability, environmental quality, and enhancing agricultural system efficiency.

Research Project: A microbiology postdoctoral research opportunity is available for a motivated and independent individual to investigate alternatives to antibiotics to enhance the growth of foodproducing animals including swine while reducing impacts due to opportunistic pathogens such as *Salmonella*. Interventions that enhance animal production may include feed additives, probiotics, prebiotics, immunomodulators, and vaccines. This research program involves multiple projects focusing on modulation of the gastrointestinal environment to support a beneficial microbiome and limit opportunistic pathogen colonization in swine.

The postdoctoral researcher may participate in modification of an attenuated *Salmonella* vaccine as a platform for expression of foreign genes against other microbial pathogens or the development/evaluation of directed interventions against opportunistic pathogens in food-producing animals.

Recent publications of team members and collaborators:

- Genes (Genes. 2020. 11(11):1291. doi: 10.3390/genes11111291)
- Vaccine (Vaccine. 2016. 34(10):1241-6. doi: 10.1016/j.vaccine.2016.01.036)
- Front. Vet. Sci. (Front Vet Sci. 2016. 3:66. doi: 10.3389/fvets.2016.00066)
- Vaccine (Vaccine. 2019. 37(10):1255-1259. doi: 10.1016/j.vaccine.2018.12.058)

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Learning Objectives: The participant will train with a team of microbiologists, nutritionists, immunologists, bioinformaticians, and veterinarians to achieve the learning objectives: investigate alternatives to antibiotics for identification of interventions that enhance animal growth and reduce colonization by opportunistic pathogens.

<u>Mentor(s)</u>: The mentor for this opportunity is Brad Bearson (<u>brad.bearson@usda.gov</u>). If you have questions about the nature of the research please contact the mentor(s).

<u>Anticipated Appointment Start Date</u>: Winter/Spring 2022. 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(s) will receive a monthly stipend commensurate with educational level and experience. The annual stipend rate for this opportunity is \$64,009. An annual stipend supplement will be provided to offset the cost of enrollment in health insurance plan(s). An annual allowance of \$2,500 is available to reimburse travel-related expenses to scientific and professional development activities.

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 <u>Program Website</u>. After reading, if you have additional questions about the application process please email <u>USDA-ARS@orau.org</u> 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 July 1, 2021.

Preferred knowledge, skills, and experience in one or more of the following areas:

- bacteriology (aerobic and/or anaerobic)
- microbial genetics (transformation, transduction, conjugation, recombineering)
- animal models of infectious disease (particularly swine or poultry)
- molecular biology techniques (e.g. DNA and RNA isolation, PCR, qRT-PCR, RNAseq)
- immunological assays (e.g. ELISA, flow cytometry)
- statistical analysis

Eligibility

Requirements • Degree: Doctoral Degree.

Citizenship: U.S. Citizen Only

- Discipline(s):
 - Life Health and Medical Sciences (18)



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