

Opportunity Title: Postdoctoral Research Opportunity in the Evolution of Influenza A Virus in Swine

Opportunity Reference Code: USDA-ARS-2020-0062

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-2020-0062
How to Apply	<p>A complete application consists of:</p> <ul style="list-style-type: none"> • 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.

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

Application Deadline 8/4/2020 3:00:00 PM Eastern Time Zone

Description ***Applications will be reviewed on a rolling-basis.**

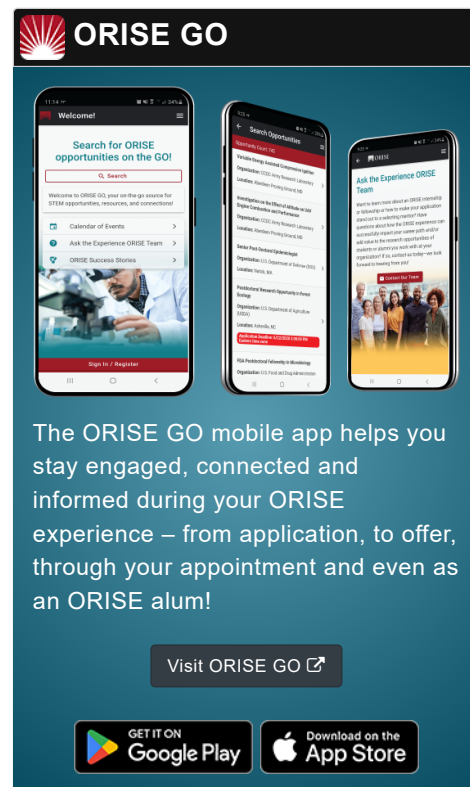
A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Animal Disease Center, Virus and Prion Research Unit located in Ames, Iowa.


The selected participant will be involved in studying the evolutionary dynamics of influenza A virus (IAV) in swine. This project is specifically within the Intervention Strategies to Control Influenza A Virus Infection in Swine project in the Virus and Prion Research Unit. Scientists in this unit maintain a comprehensive IAV research program including investigation of virulence mechanisms, vaccinology, immunology, and virus evolution. The participant will be based on the National Centers for Animal Health campus and enjoy interactions with a dynamic community of ARS intramural scientists, postdoctoral fellows, graduate students, and research technicians.

Under the guidance of a mentor, the participant will use a range of phylogenetic methods (including Bayesian) to study how interspecies transmission, genomic reassortment, and farm production practices affect the evolution of endemic viruses and the emergence of novel influenza viruses with pandemic potential in swine. Specific goals are to quantify genetic evolution of IAV from swine in the context of contemporary and historical isolates, determine genetic predictors of influenza host range and virulence, to use sequence data to understand the genetic and antigenic variability of endemic viruses, and to investigate epidemiologic patterns as swine IAV is transmitted among hosts and across complex landscapes. An additional goal is the development of bioinformatic tools or analytical pipelines that quantify the diversity of RNA viruses infecting swine that may be deployed in online databases or interactive websites.

The participant will collaborate with the scientists and other laboratory staff in all









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phases of the research process (conception, study design, analysis, interpretation, and scientific writing). The participant will advance his or her knowledge in genomic epidemiology, bioinformatic and sequence analysis techniques, and collaborate in a team-oriented, multi-disciplinary influenza A virus research environment. The participant will have the opportunity to attend and present at local and/or national meetings upon acceptance of research abstract.

Additional information on the IAV research group at NADC:

Dr. Amy Vincent (Lead Scientist, Research Veterinary Medical Officer):

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1nG-bl8xm6NQa/bibliography/53227134/public/>

Dr. Tavis Anderson (Research Biologist):

<https://www.ncbi.nlm.nih.gov/myncbi/1xKMwru7sdfQ9/bibliography/public/>

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 one year, but may be renewed upon recommendation of ARS and is contingent on the availability of funds. **The participant will receive an annual stipend starting at \$64,009 (commensurate with experience) and a travel allowance of \$2,000. A health insurance allowance of up to \$6,000 will also be provided.** Proof of health insurance is required for participation in this program. The appointment is full-time at ARS in the Ames, Iowa, 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, 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.

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

Qualifications

The qualified candidate should have received a doctoral degree in Bioinformatics, Computational Biology, Computer Sciences, Evolutionary Biology, or Microbiology, or be currently pursuing the degree and will reach completion by August 2020.



Preferred skills:

- Good writing skills
- Substantive experience in bioinformatics/computational biology
- Strong interpersonal skills with the ability to perform collaboratively
- Experience in virology, population genetics, molecular biology, or using Bayesian approaches to study the evolutionary dynamics of infectious diseases (for example, using the BEAST package)
- Experience in the use of scripting languages (e.g. python, R, bash, perl) and biologic databases and other bioinformatic tools
- Experience in multivariate statistical analyses, including generalized linear mixed models, generalized additive mixed models, and variants of these methods

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**Eligibility
Requirements**

- **Degree:** Doctoral Degree.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (3 )
 - **Life Health and Medical Sciences** (10 )