

Opportunity Title: Research Opportunity to Support for Vesicular Stomatitis Virus Ecology Research
Opportunity Reference Code: PIADC-ARS-2018-716

Organization U.S. Department of Agriculture (USDA)

Reference Code PIADC-ARS-2018-716

How to Apply 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 references

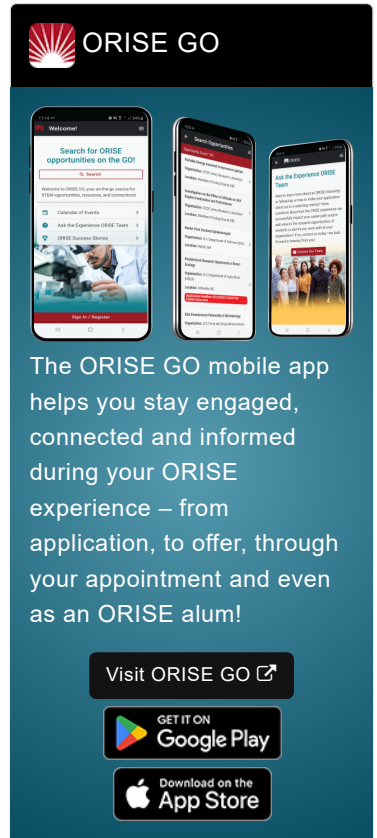
All documents must be in English or include an official English translation.

If you have questions, send an email to PIADC@orau.org. Please include the reference code for this opportunity in your email.

Description The current opportunity is to participate in an ongoing research project entitled "Ecology of Vesicular Stomatitis Virus (VSV) in North America". Vesicular Stomatitis Virus (VSV) is an arthropod-borne virus that causes serious vesicular disease resulting in economic losses to the cattle, swine, and horse industries due to decreased animal production and quarantines. In cattle and swine, the disease is clinically indistinguishable from Foot-and-Mouth Disease (FMD), one of the most devastating exotic diseases in livestock. For decades, outbreak cycles of VSV lasting 1-3 years have occurred sporadically in the southwestern United States. Different VSV strains causing each of these outbreak cycles are closely related to those circulating in enzootic areas of Mexico, but their means of transmission, determinants of viral virulence and mechanisms of introduction to the United States remain unclear. The environmental, host, and viral factors influencing the emergence, spread, and transmission of VSV are poorly understood. This research project is aimed at understanding the viral, host and ecological factors influencing emergence of VSV in North America. This understanding will provide scientific evidence to generate models that predict future outbreaks and to develop intervention strategies to minimize the impact of future disease outbreaks.


The project will involve research activities at the Foreign Animal Disease Research Unit (FADRU) at Plum Island Animal Disease Center in Orient (PIADC), NY in close collaboration with the Arthropod Borne Disease Research Unit in Manhattan, Kansas and the Jornada Basin Long Term Ecological Research Program, New Mexico State University, Las Cruces, New Mexico. The successful candidate will be actively involved both in laboratory aspects including virus genetic characterization by next generation sequencing and phylogenetic analysis of outbreak strains. In addition viral genetic determinants of virulence will be studied using an existing infectious clone through reverse genetics. Pathogenesis will be studied both in-vitro and in-vivo in insect and mammalian cells as well as in animal hosts. Travel to Kansas and New Mexico might be necessary during


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different phases of this research. This position will involve training in biosafety and various aspects of research in high containment (BSL3Ag).

PIADC is the only U.S. laboratory facility performing research, development and diagnosis of foreign animal diseases of highest threat to the U.S. This critical national asset is located off the northeast coast of Long Island, NY, and accessible by government-provided ferry from Orient Point, NY, and Old Saybrook, CT. Access to the facility requires eligibility requisites including medical and security clearances that are requisites for final selection.

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 a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time. Participants do not become employees of PIADC, USDA, ARS, DOE or the program administrator, and there are no employment-related benefits.

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

This opportunity is available to U.S. citizens only.

For more information about the PIADC Research Participation Program, please visit <https://www.ornl.gov/piadc/default.htm>.

Qualifications Applicants must have a BS, MS, PhD, DVM or equivalent graduate degree in biological sciences.

Preferred Experience:

- Experience in biological laboratory collections and computer-based inventory management, database creation (e.g. Excel).
- Experience in Animal Health, animal diseases, infectious diseases, epidemiology, disease ecology.
- Experience in biological agent characterization, virus propagation, cell culture, sterile working techniques.
- Experience in biosafety regulations and biocontainment.
- Experience in animal experimentation, large animal (pig, cattle) handling.
- Experience analyzing biological material including: conducting serological tests (e.g. ELISA, western blot, neutralization).
- Experience in nucleic acid sequencing and sequence analysis; both Sanger and Next Generation sequencing techniques, sequence




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extraction and analysis using appropriate software (e.g. Sequencher, CLC, MEGA, etc).

Applicants should possess skill sets to study animal diseases, disease epidemiology and ecology, pathogenesis, experience in research with biological materials using different methods including whole genome sequencing, data analyses, genome comparisons, carrying out literature searches, carrying out virus isolation, virus neutralization, and in-vivo characterization using large animal (cattle, pigs) models.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.
 - **Discipline(s):**
 - **Environmental and Marine Sciences** ([13](#) )
 - **Life Health and Medical Sciences** ([16](#) )
 - **Mathematics and Statistics** ([1](#) )