



SCIENTISTS ON THE FOREFRONT

The Department of Homeland Security (DHS) Science and Technology Directorate's (S&T) Office of National Laboratories (ONL) operates the Plum Island Animal Disease Center (PIADC). At PIADC, DHS S&T and the Department of Agriculture's (USDA) Agriculture Research Service and Animal Plant Inspection Service scientists study knowledge gaps and test, evaluate, and develop countermeasures and outbreak prevention and control measures for transboundary animal diseases, including African swine fever (ASF) and foot-and-mouth disease (FMD). PIADC is the only facility within the U.S. that is permitted to utilize live FMD virus as part of its scientific activities.

PIADC's goal is to prevent the introduction of ASF and FMD to North America, and provide tools to end users—first responders, veterinarians, the agriculture industry, and decision-makers—to detect, mitigate, and decontaminate threats posed by transboundary animal diseases. The Center's research builds on foundational science, supports current operational needs, and helps characterize future needs and emerging threats.

DHS PIADC SCIENCE PROGRAM IMPACT

Since 2005, the DHS PIADC Science Program—comprised of federal and contractor scientific staff—has executed a broad portfolio of Food, Agriculture, and Veterinary Defense (FAV-D) projects related to preventing, protecting against, mitigating, responding to, and recovering from the intentional, natural, or accidental introduction of trade-restricting transboundary animal diseases to the U.S. Scientists supporting the science program execute research, development, test, and evaluation efforts on



FAV-D projects, primarily involving ASF virus (ASFV) and FMD virus (FMDV).

High-consequence, trade-restricting transboundary animal diseases are a constant threat to the U.S. food and agriculture sector. A domestic ASF or FMD outbreak in farm raised or feral pigs would suspend or indefinitely terminate the ability of the U.S. to export pork. Depending on the severity of the outbreak, outbreak control efforts could cost billions.

TESTING AND DEVELOPING VETERINARY COUNTERMEASURES AND OUTBREAK CONTROL MEASURES

The DHS PIADC Science Program conducts pivotal scientific studies that support the transition of vaccines and diagnostic tests and platforms—initially developed by industry sponsors—through the USDA Center for Veterinary Biologics' regulatory approval process for product licensure. Achieving product licensure enables DHS to provide usable tools to end users and the USDA National Animal Vaccine and Veterinary Countermeasures Bank. Previously licensed products include cattle vaccines for FMD and Rift Valley fever and a domestically manufactured FMD diagnostic test.

Unique capabilities to test decontamination and disinfection procedures are also products of the PIADC Science Program. Recently, DHS and USDA scientists collaborated to identify commercial disinfectants that could be used during an emergency response to an ASF outbreak. Through this collaboration, they were able to obtain an exemption from the Environmental Protection Agency to authorize the unregistered use of pesticides to address emergency conditions for several commercial disinfectants that proved to be effective against FMDV and ASFV.

PARTNERSHIPS AND COOPERATIVE AGREEMENTS

The DHS PIADC Science Program actively scouts the market to identify new technologies and collaborative opportunities that can enhance our ability to prevent or respond to an outbreak. Cooperative Research and Development Agreements provide a fast, cost-effective mechanism to engage with veterinary and agricultural industry partners and stakeholders when new technologies and opportunities are identified.

