## Leading products

**AgCONNECT:** Coordinating the decision-making process is critical to successful outbreak management. AgConnect is a suite of customizable data integration and analysis products designed to enhance situational awareness. It integrates data from authoritative data sources into a single, easy-to-use, real-time common operating picture.

**Agricultural Screening Tools:** Animal agriculture in particular is built upon a "just in time" process that carefully coordinates the production and transportation of livestock, poultry, and their products. Tools that screen for high-consequence animal diseases while fitting into established business routines serve to support the business continuity of animal agriculture while also protecting the food supply, public health, and the economy.

**Identification and Development of African Swine Fever Virus Vaccine Candidates by Reverse Vaccinology:** The estimated net benefit of preventing African swine fever in the United States is approximately $4.5 billion. The objective of this project is to evaluate a novel approach — reverse vaccinology — for the identification and development of ASF virus vaccine candidates.

**Engage to Excel (E2E):** E2E offers an approach to mitigating the impact of commerce disruption for livestock, poultry, and associated products that is likely to occur during an outbreak of a high-consequence animal disease in the United States. The E2E project applies proven technology developed for the U.S. Department of Homeland Security and the U.S. Department of Agriculture, and it engages a rich network of stakeholder relationships in government, industry, and academia.

**Plant-Based Expression Vectors for Rapid, High-Throughput Development of Animal Vaccines:** Current methods of vaccine production can require 18 to 24 months to license a conventional vaccine as a countermeasure to an outbreak of a high-consequence animal disease. This study is expected to demonstrate the potential for surge capacity production in half that time.

**Veterinary Science Certificate Program:** This national program addresses a need in the veterinary paraprofessional workforce by providing training toward eventual professional certification. Adoption and expansion are ongoing in multiple states.

# FAZD CENTER

**National Center for Foreign Animal and Zoonotic Disease Defense**

## About the FAZD Center

The National Center for Foreign Animal and Zoonotic Disease Defense (FAZD Center) performs research and develops products to defend the nation from high-consequence foreign animal and zoonotic diseases. Founded in April 2004 as a Department of Homeland Security (DHS) Science and Technology (S&T) Center of Excellence (COE), the FAZD Center leverages the resources of multiple major universities, Minority Serving Institutions, national laboratories, and partners in state and federal government.

The FAZD Center focuses on research, education, and outreach to prevent, detect, mitigate, and recover from exotic animal, emerging, and/or zoonotic (transmissible between animals and humans) diseases, which may be introduced intentionally or through natural processes.

At least 60 percent of all human pathogens are zoonotic, according to the Centers for Disease Control and Prevention (CDC), and 75 percent of recently emerging infectious diseases that affect humans are of animal origin. The most dangerous of these animal diseases pose catastrophic risks to human health, livestock health, and the global agricultural economy, which employs one out of every three workers worldwide, according to the United Nations.

The FAZD Center champions the One Health concept with its research on the high-consequence diseases that are transmissible between animals and humans, and through its partnerships with the CDC and other government agencies.

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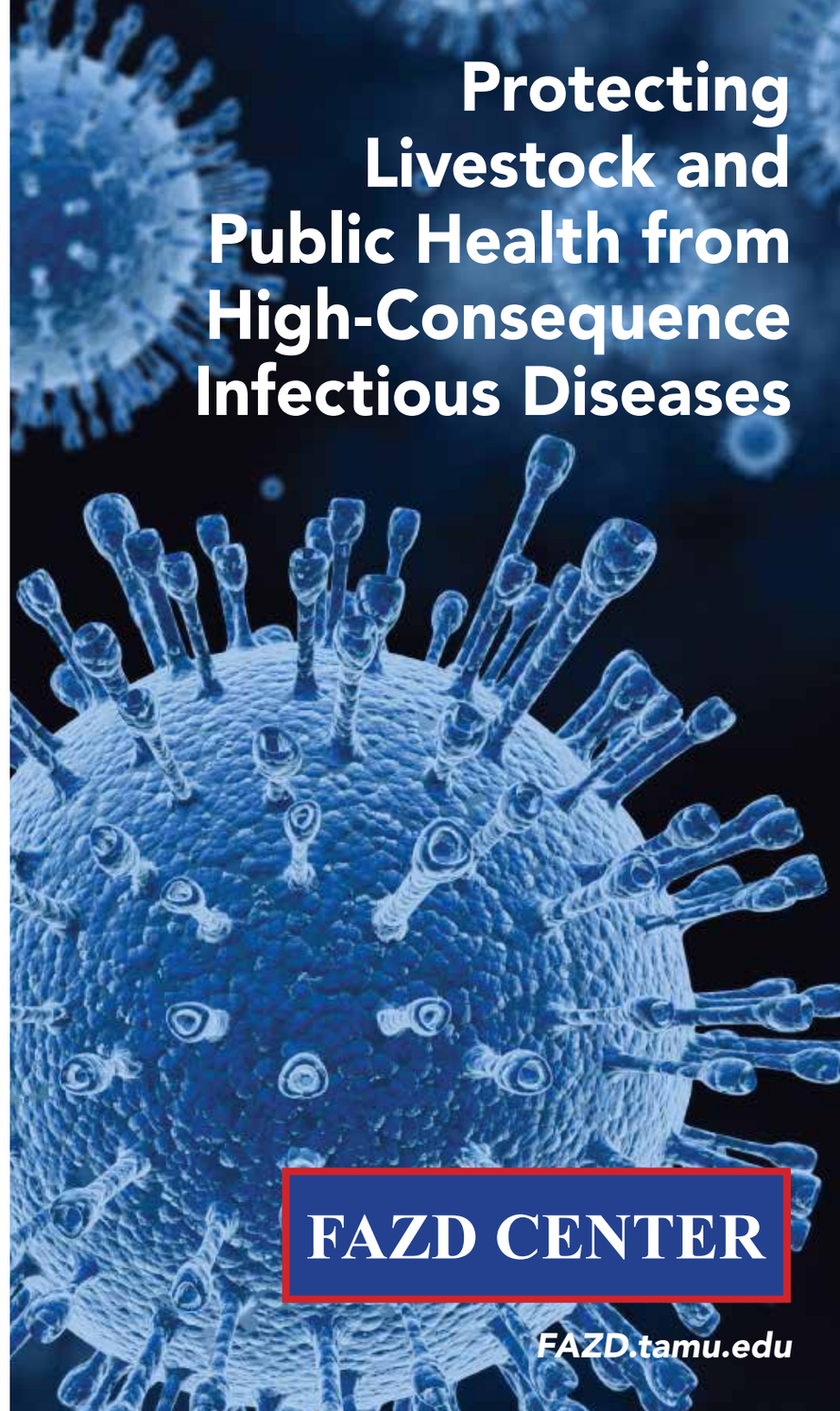
# Protecting Livestock and Public Health from High-Consequence Infectious Diseases

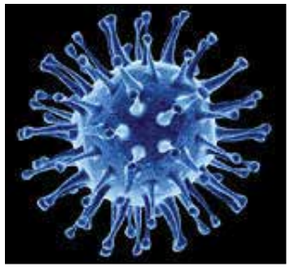


FAZD CENTER

FAZD.tamu.edu

# *Increasing resiliency for livestock and public health*

## Why high-consequence animal diseases pose significant threats to U.S. homeland security

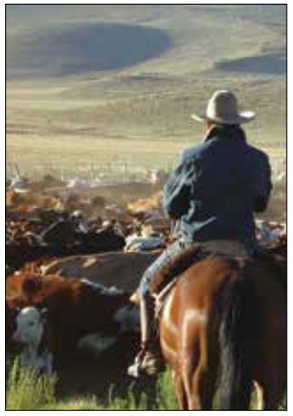


**60%**

of animal pathogens are zoonotic — that is, transmissible between animals and humans.

**75%**

of recently emerging infectious diseases affecting humans began as animal diseases. The most dangerous of these pose catastrophic risks to human health and livestock health.



**16%** of all U.S. jobs and **$1 trillion** in annual U.S. economic activity are at risk when the national agricultural economy is threatened by high-consequence animal diseases.

## How we find solutions

### Biological Research

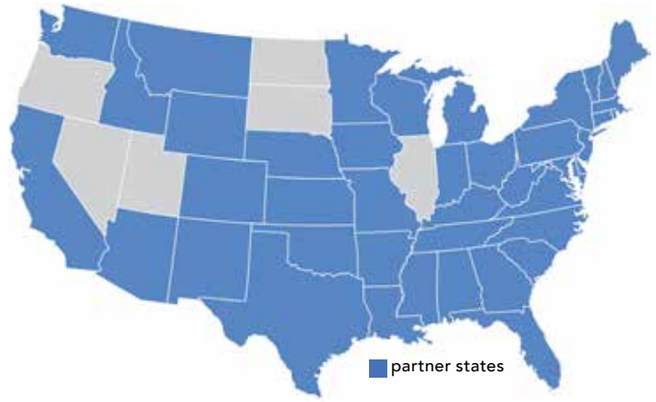
Vaccines, screening tools, diagnostic assays, and universal sample preparation/preservation platforms to help meet the goals of early detection, diagnosis, prevention, response, and recovery.

### AgCONNECT

A suite of customizable data integration and analysis products designed to enhance situational awareness.

### Outreach

Graduate education programs, early responder training, K-12 education, and stakeholder workshops to educate the next-generation workforce for agriculture, public health, and homeland security.




## More than 100 partners across the United States and around the world

The FAZD Center is a multi-institutional organization with partners in 42 U.S. states and the District of Columbia, the nations of Australia, Bangladesh, Belgium, Canada, Egypt, Kazakhstan, Kenya, Pakistan, South Africa, Tanzania, Thailand, Turkmenistan, Uganda, and the United Kingdom, plus laboratories in the National Animal Health Laboratory Network. The center's portfolio is also closely aligned with the U.S. Department of Homeland Security (DHS) Science and Technology Directorate, the U.S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service, the USDA Agricultural Research Service, agricultural and allied industries, the private sector, bio-pharmaceutical companies, additional federal agencies, national laboratories, and other DHS Centers of Excellence.