Homeland Security
Science and Technology

Center for Zoonotic and Animal Disease Defense (ZADD)

A DHS **Emeritus Center of Excellence***

ZADD develops innovative solutions and fosters collaborations to protect the Nation's agriculture and public health sectors against high-consequence foreign animal, emerging, and zoonotic disease threats.

LAUNCH ▶	2004
PARTNERS ▶	More than 29 university, government, and private industry partners
EXPERTISE ▶	Veterinary science education, international veterinary services programs, agriculture industry solutions, food security, disaster preparedness and response, animal health security
DHS ALIGNMENT ▶	U.S. Customs and Border Protection, U.S. Coast Guard, Transportation Security Administration, Federal Emergency Management Agency, U.S. Immigration and Customs Enforcement, Cybersecurity and Infrastructure Security Agency, DHS Office of Intelligence and Analysis, DHS Office of Policy, U.S. Secret Service, DHS Countering Weapons of Mass Destruction Office

Feedback from Our Partners

*"The impact of a safe, efficacious, and DIVA-compatible vaccine in the U.S. can be measured by one word - confidence. **The health of our country's food animal productions system should never be in doubt.** The Rift Valley Fever Virus [RVFV] vaccine that our partnership has developed, which has been demonstrated as safe and protective in animals, and able to differentiate vaccinated and affected animals to continue animal movement and trade, is confidence-building."*

Dr. Alan Young, Chief Technology Officer
Medgene, 2019

*"This new FMD [Foot and Mouth Disease] diagnostic test **will decrease the amount of time required in diagnosing the disease in the event of an outbreak**...Having rapid diagnostics as a tool would be very important for continuity of our livestock industry, so it's good to see this new test licensed and ready for use."*

Dustin Oedekoven, State Veterinarian and Executive Secretary
South Dakota Animal Industry Board, 2017

*DHS Emeritus Centers of Excellence no longer receive base grant funding. DHS and its operational components can access Emeritus Centers through DHS Basic Ordering Agreements (BOAs).

Research and Education Capabilities

- Next-generation vaccine candidate development
- Decision support systems and emergency management tools for animal disease threats
- Animal agriculture systems analyses
- Education and training for the current and future homeland security workforce

INSTITUTE FOR INFECTIOUS ANIMAL DISEASES
A Department of Homeland Security Science & Technology Center of Excellence

Institute for Infectious Animal Diseases (IIAD)

A nationwide consortium co-led by:
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C·E·E·Z·A·D
Center of Excellence for Emerging and Zoonotic Animal Diseases
A Department of Homeland Security Center of Excellence

Center of Excellence for Emerging and Zoonotic Animal Diseases (CEEZAD)

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University Partners

Colorado State University, CO
Columbia University, NY
Cornell University, NY
Drexel University, PA
George Mason University, VA
Iowa State University, IA
Jackson State University, MS*
Lincoln University, MO*
Mount Sinai School of Medicine, NY
Pirbright Insititute, U.K.
Texas A&M AgriLife Extension
    Service, TX
Texas A&M AgriLife Research, TX
Texas A&M Engineering Experiment
    Station, TX
Texas A&M Veterinary Medical
    Diagnostic Laboratory, TX
Tuskegee University, AL*
University of California – Davis, CA
University of California – Los Angeles,
    CA
University of Florida, FL
University of Georgia, GA
University of Nebraska – Lincoln, NE
University of Pennsylvania, PA
University of Pretoria, South Africa
University of Southern California, CA
University of Texas Medical Branch –
    Galveston, TX
University of Wyoming, WY
West Texas A&M University, TX

Minority Serving Institution (MSI)

Enterprise Partners

iBIO, Inc.
Careside
Ceres Nanosciences
Farmak
Harris Vaccines/Merck
IntegenX
Medgene
National Pork Board
Orion Integrated Biosciences
Sirius Computer Solutions
Veterinary Medical Research &
    Development (VMRD)

For a complete list of partners and
more information, please visit
iiad.tamu.edu or **ceezad.org**

Impacts

Modernizing high-containment laboratories

The Multi-Laboratory International Collaboration Environment (MICE) and Laboratory Animals Records Application (LARA) – two systems developed by ZADD co-lead Texas A&M University – support communication between geographically disparate laboratories and across a containment barrier (MICE) and in-containment recording of animal health and research compliance data (LARA). Through the exchange of live, high-quality audio, video, and streaming laboratory data, the MICE system allows for real-time interaction between distributed animal health communities. The LARA system enhances existing laboratory processes by providing an electronic tool for collecting, managing, monitoring, and reporting research data.

Rapid field detection of dangerous and exotic animal and human pathogens

Rapid, reliable detection and response are critical to mitigate the economic and public health impacts of infectious agents, including transboundary animal diseases (TADs) that pose a significant potential threat to livestock. ZADD co-lead Kansas State University, in collaboration with industry partner GeneReach USA, is developing a suite of TAD pathogen detection tests to expand the capabilities of the GeneReach POCKIT Xpress Mobile Laboratory, a commercial-off-the-shelf product used to test for endemic diseases in pets and livestock.

Rift Valley Fever Virus (RVFV) vaccine development

Vaccines against Rift Valley fever are currently not available in the United States. Therefore, ZADD co-lead Kansas State University developed a candidate vaccine against RVFV in collaboration with industry partner Medgene Labs. Testing in sheep and cattle found the vaccine candidate to be safe and efficacious and responsive to several Federal requirements for vaccine platforms, including the capability to differentiate infected from vaccinated animals (DIVA).

Developing a diagnostic kit for animal health

In partnership with the U.S. Department of Agriculture Center for Veterinary Biologics, ZADD co-lead Texas A&M developed and validated a Foot and Mouth Disease (FMD) diagnostic kit that provides animal health first responders with a tool to mitigate the potentially catastrophic economic and animal welfare impacts of an FMD outbreak. This breakthrough tool, used to detect FMD in cattle, swine, and sheep, is the first licensed FMD diagnostic kit in the U.S.

For more information on DHS centers of excellence, please visit
www.dhs.gov/science-and-technology/centers-excellence