



CERES

Coalition for Epi Response,
Engagement and Science

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Our Changing Landscape

Bipartisan Commission on Biodefense

Report on Ag Biodefense in Oct 2017

- Echoed previous reports
- Penside Dx and surveillance
- Coordination and integration of assets across agencies
- Veterinary Vaccine Bank Stockpile

National Bio and Agro-defense Facility

Preparation for USDA large animal containment facility opening in KS to replace Plum Island

Dedicated vaccine manufacturing, stockpile
Needed in the United States

US National Biodefense Strategy

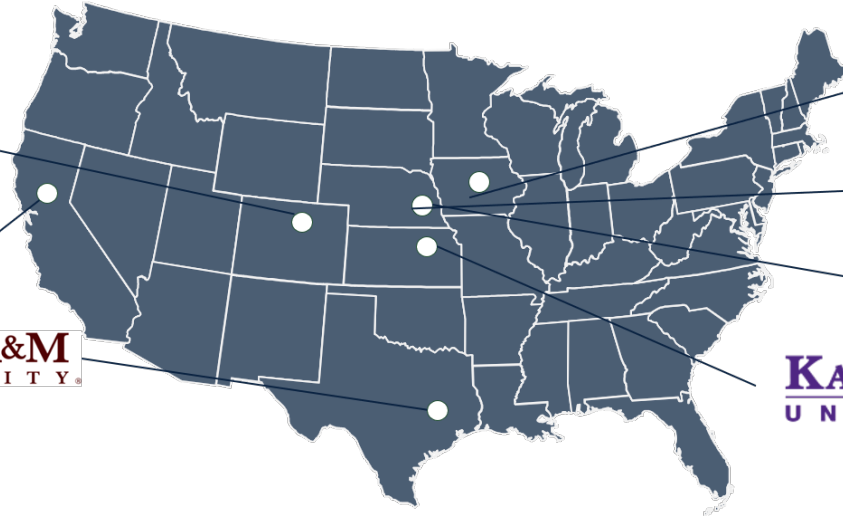
Signed September 2018

Joins agencies in coordinated research linked to enhanced resiliency in response

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Mobilizing Land Grant Discoveries and Innovations



- ▶ Land grant consortia formed to provide solutions that link infectious disease and ecosystem related research and development to agile and resilient response and recovery
- ▶ Integrates federally funded biocontainment resources for countermeasure production, Dx and Surveillance
- ▶ Actively engage communities through extension and outreach

CERES Priorities



Engagement with urban and rural communities to effect adoption of better infection control practices and innovation



Rapid detection of high-consequence threats



Agile stockpiling and production to thwart regional and national outbreaks

CERES Assets



Land Grant extension, helping communities adopt innovation



Breadth/depth of expertise, including human, animal, & plant infectious diseases



Nodes in state and national surveillance systems



Dx/Tx platform channels of new pathogen diagnostics



cGMP FDA approved select agent countermeasures manufacturing



0.5 million sq. ft. of bio containment space



International partnerships and engagement



Global Challenges, Global Partnerships

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Engagement with urban and rural communities to effect adoption of better infection control practices and innovation



Rapid detection of high-consequence threats



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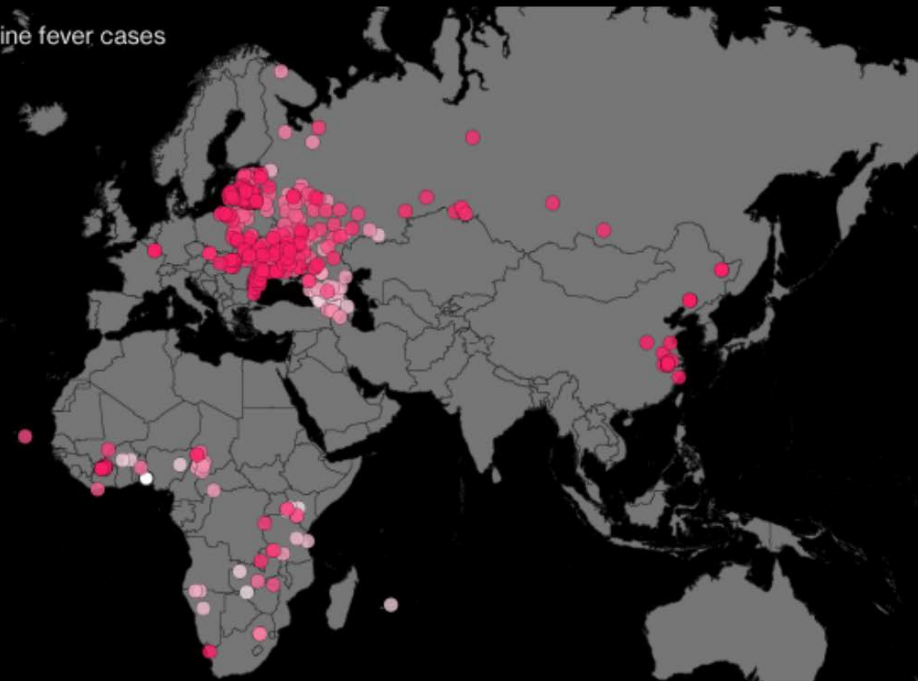
African Swine Fever

Out of Control

Lethal pig disease from Africa spread to Europe in 2007 and is now in China

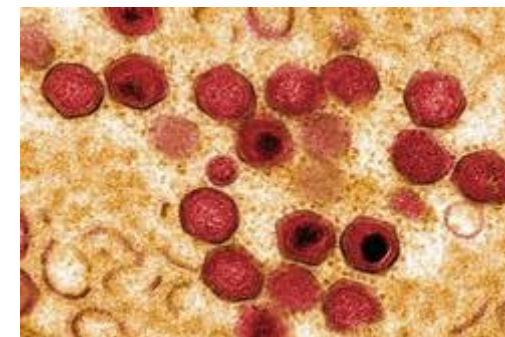
African swine fever cases

- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018



Source: World Organization for Animal Health (OIE)
Note: Last updated Sept. 14

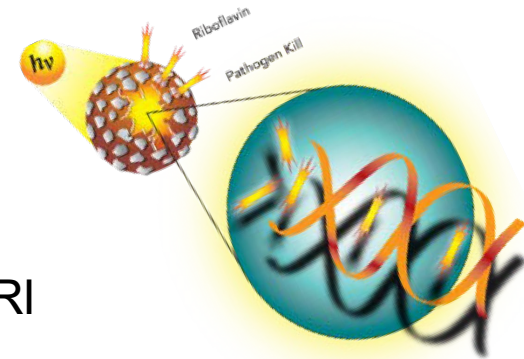
Bloomberg



Development of a Field-Based Vaccine Process Using a Commercially Available Platform and its Efficacy for ASFV

Collaboration between Colorado State University and the International Livestock Research Institute

- Propagate, isolate and inactivate ASFV particles
- Formulate the inactivated ASFV into low, medium and high dose preparations using specific diluents and or adjuvants
- Assess immune responses associated with in vivo challenge using various inactivated virus preparations
- Assess immune responses associated with in vivo lethal challenge using a virulent Kenya virus isolate following immunization with various inactivated virus preparations and regimens.



Pls: Dr. Ray Goodrich, CSU; Dr. Edward Okoth, ILRI



CERES Activities

- ▶ Shared Communication & Engagement
 - Rudolph, A., et.al. "Lincoln's Biodefense Strategy: Protecting the Agricultural Base." Health Security 17:1 (2019) 80-81
 - CERES in DC: February 2020
 - Host to Bipartisan Commission on Biodefense, Nov 5 2019 at CSU
- ▶ Shared Meetings and Workshops
 - October 17-18, 2019 at Texas A&M University, College Station TX
 - July 11th, 2019 at Colorado State University, Fort Collins CO
 - February 4th, 2019 , Washington DC
 - October 22-24, 2018, Nebraska City NE
 - September 20, 2018 at Colorado State University, Fort Collins CO
- ▶ Shared Research Proposal Making
 - USDAAFRI
 - USDANADPRP
 - NSF ERC and STC
- ▶ Shared Investment: CERES Seed Fund
 - Supports collaborative, cross-consortium proposals addressing stakeholder-derived challenges in agricultural biosecurity

AgARDA

Established in the Agriculture Improvement Act of 2018 (2018 Farm Act)
Pilot authority to develop technologies, research tools, and products through advanced research on long-term and high-risk challenges for food & agriculture

Focuses on R&D that private industry is unlikely to undertake

Example project: Veterinary countermeasures to intentional or unintentional biological threats including vaccines or therapeutic products and diagnostic or surveillance technologies



Ag ADM

Model after HHS BARDA Advanced Development & Manufacturing (ADM) centers

- Established three centers to develop and manufacture medical countermeasures, such as vaccines and medicines used to protect health in emergencies, and can transition quickly and cost effectively between products.

Public-private partnerships

Policies & Programs



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Thank you