



Protecting Agriculture.
Preserving Public Health.



ONE HEALTH KANSAS
at Kansas State University

*Connecting animals, people,
and their environment
through education*

Infectious Disease Research and One Health Education Programs

2010 K-State Sustainability Conference

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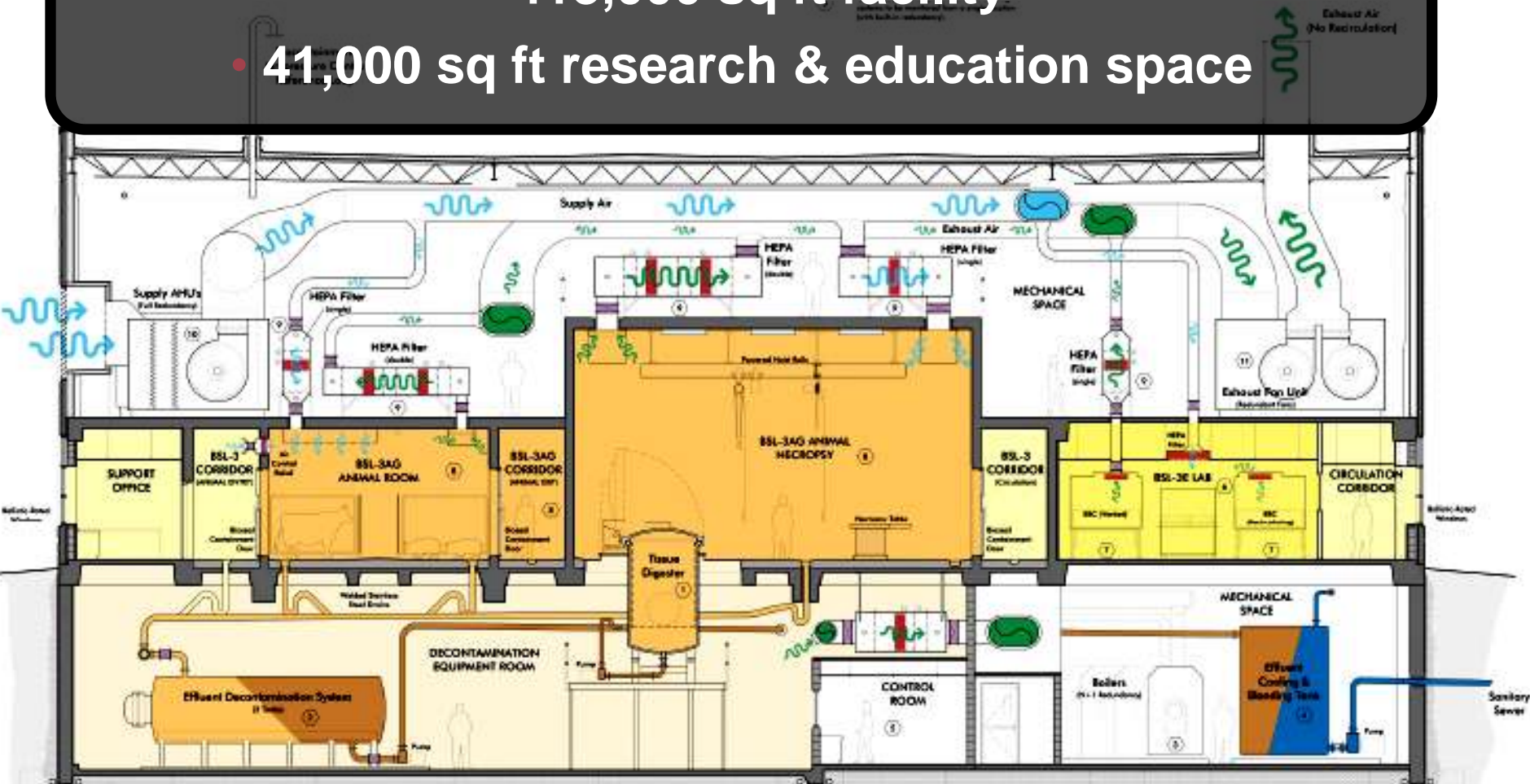
BRI at Pat Roberts Hall

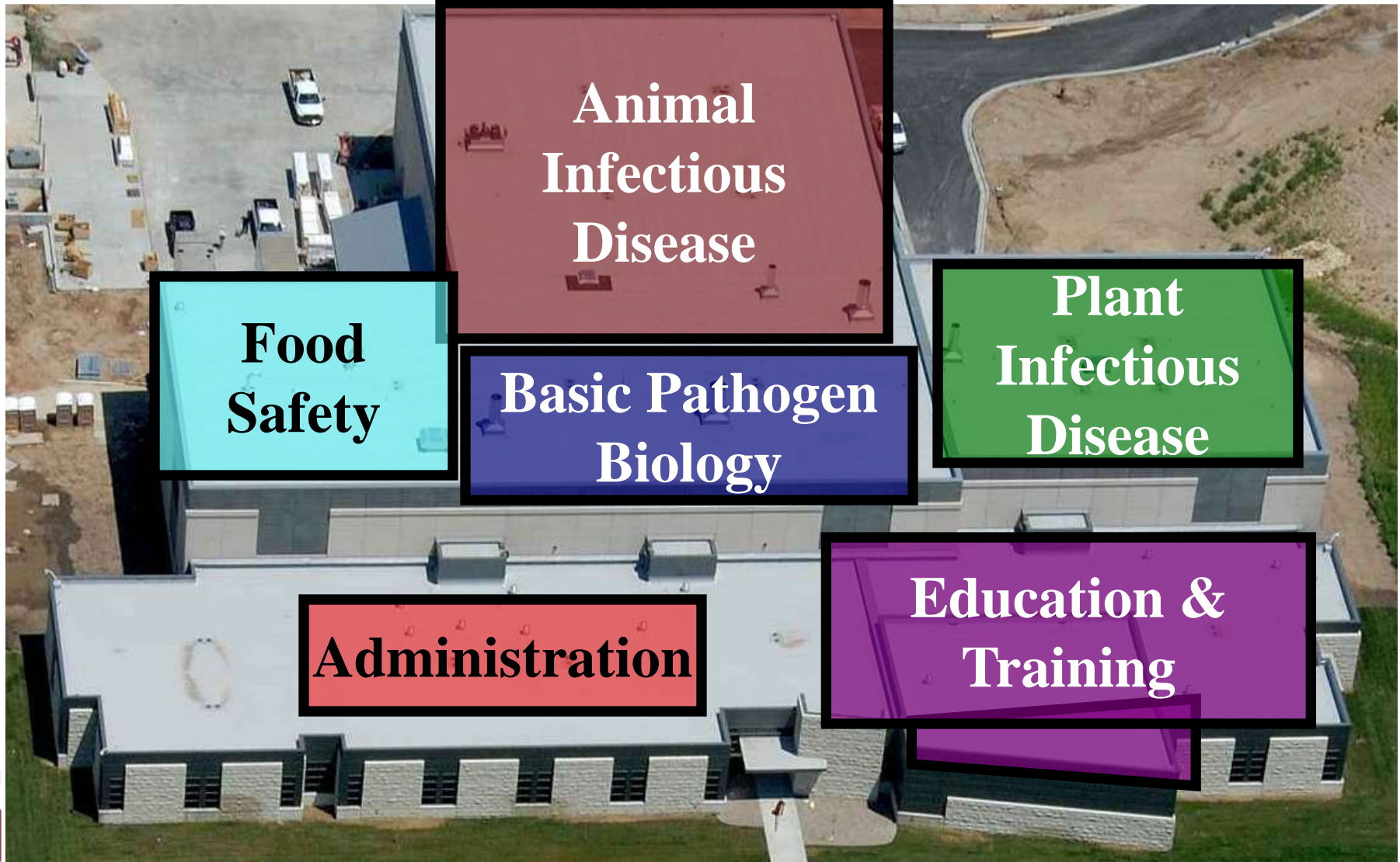
BSL-3 and BSL-3Ag research on animal, plant, and zoonotic diseases



- 113,000 sq ft facility

- 41,000 sq ft research & education space





BSL-3 Laboratories

Organisms are handled safely in biosafety cabinets



14 Research labs
7 Support labs

Small Animal Vivarium

- Ventilated cages for mice, rats, and other small animals in a racking system
- Animals can be handled in a biosafety cabinet



Large Animal Research Space

- BSL-3Ag
 - » Capacity for horses, cattle, swine, goats, etc.
 - » 21 compression seal gas tight doors
 - » 9 air gasket seal gas tight doors
 - » Animal room is the containment vessel



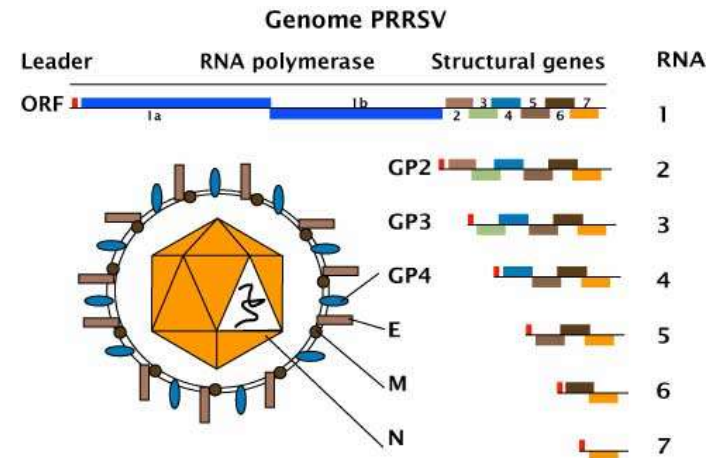
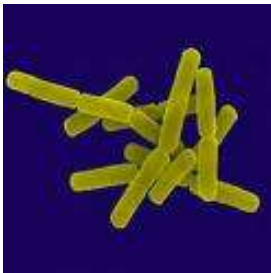
Food Safety Research

- USDA-style animal slaughter and processing floor and associated research space under BSL-3
- Allows deliberate contamination of a carcass for studies
 - » Detection
 - » Decontamination



BRI Infectious Disease Research Projects

- Food safety research with *Bacillus anthracis* (anthrax vaccine strain) study—underway—Dr. Oberst
- 1st animal study—porcine reproductive and respiratory syndrome virus & porcine circovirus—completed—Drs. Hesse and Rowland



Current and Pending Research

- Wheat blast (Drs. Valent, Bockus, Stack, and Tang)—
in progress
- H1N1 and swine influenza in pigs and mice (Dr. Richt)
- Exotic bluetongue, West Nile Virus (ABADRU
researchers)
- *Brucella* vaccine trial (Dr. Ficht)
- Rift Valley Fever Virus vaccine trial and diagnostic
studies (Dr. Richt and ABADRU)
- Avian influenza (Dr. Richt)

BRI Research and Sustainability

- Research is expensive but dealing with disease outbreaks has a higher \$\$ and environmental cost
- BRI research outcomes include development of
 - » Diagnostic tests for animal, zoonotic, and plant diseases
 - » Vaccines and therapies for animal and zoonotic diseases
 - » Disease-resistant plant strains
 - » Safer food-processing methodologies
 - » Educational materials for the biotech workforce

Integration of Research and Education

- K-State's land-grant mission means bringing basic and applied research to the public through educational programs
- BRI Integrated Training Suite
 - » Training for scientists and staff
 - » Distance and continuing ed
- One Health Kansas educational programs



One Health Kansas

- Promotes awareness and understanding of the **interconnections among human, animal and environmental health**
- Will help the citizens of Kansas understand related challenges affecting the health of Kansas children and adults
- Developed by K-State in 2008 with funding from the Kansas Health Foundation



ONE HEALTH KANSAS: SPECIFIC AIMS

- Build the pipeline of future public health professionals by **extending public health education into K-12 schools**, community colleges and undergraduate institutions across Kansas
- Provide broader and **more in-depth education for current and future public health professionals to develop workforce capable of addressing emerging and re-emerging zoonotic diseases**



ONE HEALTH KANSAS

- The goals of ONE HEALTH KANSAS are aligned with the national One Health Commission and the global One Health Initiative
- Thus, **ONE HEALTH KANSAS promotes collaboration among veterinary, medical, and public health professionals based at institutions of higher education and within communities.**



ONE HEALTH KANSAS Partnerships—at K-State

- Make a new program sustainable by partnering with established programs having similar or parallel goals
- One Health Kansas was designed to work with existing research/education partners at K-State including
 - » Center for Science Education
 - » CORES: Collaborative for Outreach, Recruitment and Engagement in STEM
 - » Division of Continuing Education
 - » International Food Safety Network
 - » K-State MPH program
 - » K-State Olathe Innovation Campus
 - » K-State Rabies Lab



ONE HEALTH KANSAS Partnerships—at K-State

- K-State faculty expert partners:
 - » Communication of health issues
 - Dr. Doug Powell
 - Dr. Kate Stenske
 - » Basic research on zoonotic diseases/transmission
 - Dr. Cathy Hanlon
 - Dr. Deon van der Merwe
 - Dr. Brad White
 - Dr. Samantha Wisely



ONE HEALTH KANSAS Partnerships—elsewhere

- KU Institute for Community and Public Health
- Kansas Health Foundation
- Makerere University
- Morris Animal Foundation
- North Dakota State University
- University of Pennsylvania
- USAID



ONE HEALTH KANSAS Partnerships

