

The Biosecurity Research Institute (BRI) is located at Kansas State University in Manhattan Kansas. K-State's BRI is a state-of-the-art biocontainment facility totaling 113,000 sf; and consists of both BSL-3 and BSL-3Ag space totaling 31,000 sf.



The BSL-3 space consists of approximately 21 labs along with the necessary preparation space and a small animal vivarium and ancillary support space. The BSL-3Ag consists of five animal rooms, a necropsy area, and ancillary support spaces. The BRI functional cores include animal rooms for research on infectious diseases of livestock and poultry.

The facility was designed to hold up to 32 eight-hundred pound cattle or smaller species, food processing space, plant science research laboratories for the development of plant-based vaccines, and insect vector and basic molecular biology laboratories. In addition to the biocontainment spaces, there is an education and training wing with meeting rooms, conference space, a classroom, and a BSL-3 simulated training laboratory.

The goals of the new Collaborative Biosecurity Research Initiative (CBRI) are to support inter-institutional research to:

1. Develop countermeasures for foreign animal diseases.
2. Provide advanced test and evaluation capability for threat detection, vulnerability, and countermeasure assessment for animal and zoonotic diseases.
3. Support licensure of vaccine countermeasures through essential animal-model testing and evaluation.
4. Strengthen biosecurity capabilities of institutions serving certain regions and populations, such as students underrepresented in biosecurity research.

#### **Merrick Scope of Work**

The facility was in its final phase to work out outstanding operational and performance issues. Merrick provided operational startup support and a focused commissioning effort that targeted guideline compliance which included:

- Site review and inspection, observe testing and review of the lab/vivaria ventilation systems, lab spaces, HVAC equipment, Control system, HEPA filtration system.
- Reviewed documents including, as-built drawings, specifications, punch lists and TAB reports for the project.
- Control system testing and analysis
- Assessment and recommendations for upgrades and modifications
- Develop test protocols and documentation
- On-site system and integrated system testing with KSU staff which included normal and failure testing scenarios
  - Building automation
  - HVAC
  - Lab modules
  - Power failure
- Develop Cx report and baseline documents