



ASSOCIATION OF  
PUBLIC &  
LAND-GRANT  
UNIVERSITIES

**KANSAS STATE**  
UNIVERSITY



CECE

INNOVATION AND ECONOMIC PROSPERITY AWARDS PROGRAM

2023  
CASE  
STUDY

IEP CATEGORY - PLACE

# **Kansas State University**

## **Hub for Biosecurity and Biodefense in the Animal Health Corridor**

## ABOUT THE ANIMAL HEALTH CORRIDOR

The Animal Health Corridor, centered in Kansas City but running between Manhattan, KS, on the west and Columbia, MO on the east, is the largest concentration of animal health companies globally. The Edge Collaboration District is in essence a microcosm of the Animal Health Corridor and will serve as an innovation hub for animal health and biosecurity research and collaboration.

### *Biosecurity Research Institute (BRI)*

The Biosecurity Research Institute (BRI) at Kansas State University is an example of an early investment in the ecosystem. Established in 2008, the BRI houses biosafety level-3 (BSL-3) and biosafety level-3 Agriculture (BSL-3Ag) laboratories. The BRI supports all aspects of work with high-consequence pathogens affecting plants, animals, and food products, including zoonotic pathogens that infect humans.

Organizations investigating infectious diseases, developing new therapeutics, or creating vaccines, can partner with the BRI to tackle agricultural and public health threats. The BRI has unique research, education, and training capabilities with highly talented staff and researchers who enable safe and secure work with a wide range of highly pathogenic organisms. They offer multidisciplinary research services, including detection of pathogens in food, vaccine development and validation, diagnostic technology development, and basic biology of pathogens of animals, humans, or plants. The BRI is one of the very few facilities in the U.S. to offer BSL-3Ag capacity to work with large animals such as cattle, swine, and sheep. This facility and K-State's broader biosecurity capabilities were paramount to the attraction of the USDA's National Bio and Agro-Defense Facility (NBAF).

The BRI greatly enhances training efforts for companies. The facility contains 10,000 square-foot education and training space includes a classroom connected to a training lab, a lecture hall, connectivity to research spaces, and conference/meeting rooms. The BRI is one of the few facilities in the nation with a training lab and equipment to simulate research practices and emergency drills.

While it has been a K-State research asset for more than 10 years, the BRI was created to help address events such as the COVID-19 global pandemic. Zoonotic diseases, which are caused by agents such as SARS-CoV-2 virus that spread between animals and humans, are one of the areas of focus at the BRI. Since the beginning of the COVID-19 pandemic, scientists and staff at the BRI ramped up research on SARS-CoV-2 to fight the virus. When the pandemic began, the BRI



quickly began new research programs related to SARS-CoV-2 and built on existing infectious disease research and training programs. BRI researchers answered the call and completed over 20 projects related to COVID-19 since March 2020, in addition to many ongoing coronavirus research projects. The BRI was instrumental in securing for K-State \$12 million in funded grants as well as several license agreements related to COVID-19. A Biologics Development Module pilot facility has recently been added to the BRI, enabling pilot-scale development of vaccines and therapeutics.

### *National Bio and Agro-Defense Facility*

The NBAF now anchors the Edge Collaboration District, physically connecting the federal lab, the University, and the community. Through a significant partnership between the state and local public and private sector partners, Manhattan, KS was selected in 2009 to be the site of the new lab, which is being relocated from Plum Island, NY. After a three-year site-selection process and 11 years of preparation and construction, the facility will officially open in May 2023s. Adjacent to BRI, NBAF is near important veterinary, agricultural, and biosecurity research and expertise. This \$1.25 billion facility will be a biosafety level-4 laboratory that will serve the U.S. Department of Agriculture (USDA) as an anchor for research into the most significant food-animal diseases. Upon completion, NBAF plans to employ 326 workers with an average wage of \$77,000.



*New Scorpis Biomanufacturing facility rendering*



NBAF will be the first laboratory facility in the U.S. to provide BSL-4 laboratories capable of housing cattle and other large livestock. NBAF will also have a Biologics Development Module (BDM) to augment laboratory research and accelerate technology transfer to industry partners. USDA's Agricultural Research Service (ARS) and Animal and Plant Health Inspection Service (APHIS) will conduct foreign animal disease research, training, and diagnostics development in the facility. The research performed at NBAF will be instrumental in preventing potential future pandemics and securing the U.S. food supply.

NBAF has contracted with BRI to train its current and future workforce in biocontainment research. It works with Manhattan Area Technical College to train its support and operations staff. This critical training is poised to open the door to connect the community's workforce to NBAF as they create hundreds of jobs directly and indirectly in the area.

### *Building place through partnerships*

K-State Innovation Partners, the university's technology commercialization, economic development and corporate engagement office, is charged with facilitating university and industry engagements. Highly knowledgeable about the challenges and opportunities of the private sector, Innovation Partners works with staff and faculty at the KState to create productive, profitable agreements for both sides. An excellent example of this is a treatment for COVID-19 discovered by two virologists in the College of Veterinary Medicine. Innovation Partners facilitated the signing of two licensing agreements with Cocrystal Pharma Inc., which is a clinical-stage biotechnology company, and another licensing agreement with Anivive Lifesciences, which develops companion animal and human medicines.

Building a robust sense of place around strengths in biosecurity and biodefense with NBAF and BRI is what helps K-State attract companies that benefit from collocation but also invest in the community. In fall of 2022, Scorpius BioManufacturing announced a planned partnership to build a new \$650 million, 500,000 square-foot commercial-scale facility in Manhattan. Attracted to Manhattan by K-State, Manhattan Area Chamber of Commerce, Pottawatomie County Economic Development Corp., and Kansas Department of Commerce and chosen as its location because of the relationships between Kansas State University, NBAF, and BRI, Scorpius plans to employ more than 500 people with average salaries of more than \$75,000 per year.



## LINKS TO FURTHER INFORMATION

### Supporting Information:

- [National Bio and Agro-Defense Facility](#)
- [Biosecurity Research Institute](#)
- [KC Animal Health Corridor](#)
- [K-State Innovation Partners](#)

### Articles:

- [New Company on the Block - Scorpion Biological Services brings research opportunities to state and university community](#)



## ABOUT APLU

The Association of Public and Land-grant Universities (APLU) is North America's oldest higher education association. APLU is a research, policy, and advocacy organization dedicated to strengthening and advancing the work of public universities in the U.S., Canada, and Mexico. The association's membership consists of public research universities, land-grant institutions, state university systems, and affiliated organizations.

APLU's mission is to expand access and improve student success to deliver the innovative workforce of tomorrow; advance and promote research and discovery to improve society, foster economic growth, and address global challenges; and build healthy, prosperous, equitable, and vibrant communities locally and globally.

Based in Washington, DC, the association's work is furthered by an active and effective advocacy arm that works with Congress and the administration as well as the media to advance federal policies that strengthen public universities and benefit the students they serve.

## ABOUT THE IEP PROGRAM

APLU and its [Commission on Economic and Community Engagement \(CECE\)](#) established the Innovation and Economic Prosperity (IEP) Program to help higher education institutions codify, elevate, and advance their campus enterprise supporting economic and community development.

The **IEP Designation Program** recognizes institutions that have demonstrated a meaningful, ongoing and substantial commitment to economic and community development, growth, and economic opportunity.

The **IEP Awards Program** recognize exemplary and innovative projects in university-based economic and community engagement:

- Talent and workforce development
- Innovation, entrepreneurship, and tech-based economic development
- Place development through public service, outreach, and community engagement

Learn more at: [www.APLU.org/IEP](http://www.APLU.org/IEP)

