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## Private Sector Opportunities Abound with the Arrival of NBAF

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# Private Sector Opportunities Abound with the Arrival of NBAF

As preparatory work and preliminary construction progresses on the National Bio and Agro-defense Facility site north of Kansas State University, the opportunities for the private sector continue to grow.

The arrival of the \$650 million Department of Homeland Security facility will foster local and regional development, university leaders say, and may create new partnerships for K-State, the Manhattan community and animal health companies both inside and outside the Kansas City Animal Health Corridor.

“Only time will tell how many and what kind of private sector opportunities will arise because of NBAF,” said Ron Trewyn, K-State’s vice president for research. “But I think it’s pretty clear with all the Animal Health Corridor companies that are in the area that there is great potential.”

When the Department of Homeland Security named Manhattan as the official site for NBAF in early 2009, Trewyn was amazed at the number of pharmaceutical companies that started contacting K-State, the Manhattan Chamber of Commerce and the Kansas Department of Commerce. While some of the larger companies were interested in expanding to the Manhattan area, other smaller animal health companies talked about completely relocating to the area.

Companies of all sizes were interested in opportunities both at K-State and in the Animal Health Corridor region, which stretches from Manhattan, Kan., to Columbia, Mo. This region is already a hotspot for animal health — containing one-third of the world’s marketplace for animal health companies and including more than 13,000 employees — but the addition of NBAF makes it even more appealing.

*The Pre-Decisional Draft of NBAF*



“Some of the companies in this region are expressing interest in what might be available near the NBAF site in Manhattan,” Trewyn said. “But we’re also being contacted by animal health companies that aren’t currently located in the Animal Health Corridor.”

With construction of the lab itself slated to begin in early 2012, it’s likely that more companies will be attracted to the area. While there is limited land close to campus for companies to build, Trewyn noted that space is available throughout the Manhattan area. He pointed to the 25-acre K-State Research Park on Manhattan Avenue east of the NBAF site as a potential place for companies to locate.

While negotiations with companies are still in the early stages, the arrival of NBAF will also give K-State the ability to compete for science or policy-related programs, particularly related to zoonotic and animal diseases. NBAF’s emphasis on animal vaccinations, as well as new antibiotic and antiviral treatments, will help attract animal health companies that focus on infectious diseases or diagnoses.

“When it comes right down to it, Manhattan is going to become the epicenter for the world’s animal health,” said Daniel Thomson, who is the Jones professor of production medicine and epidemiology for the K-State College of Veterinary Medicine. His research group has used K-State facilities

to develop the E. coli O157:H7 vaccine for cattle.

Thomson sees huge potential for animal health private industry because NBAF and K-State’s Biosecurity Research Institute will provide new biosafety level 3 and level 4 laboratories, where scientists can research pathogens such as foot-and-mouth disease, swine fever

and anthrax.

“I think it will attract some of the best and brightest minds to work in these facilities,” Thomson said. “The collaboration that K-State will be able to do with those facilities will help K-State recruit the best and brightest students as well.”

The development of animal vaccines will be particularly important, Thomson said. When researchers are able to develop vaccines, they’ll need industry partners to produce the vaccines. In many cases, it makes sense for animal health and pharmaceutical companies to be geographically close to the researchers.

“When I look at NBAF and K-State as a whole, the way I describe Manhattan is the front gate to the west,” Thomson said. “Our function at Kansas State University is to be the gate — that ability to scientifically and independently review the things that are coming from the industry to improve the health and performance of animals.

“We’re at the point in time where industry and agriculture shake hands,” Thomson said.

*By Jennifer Torline, Communications and Marketing*

## About the Biosecurity Research Institute



**B**iocontainment facilities are classified by the Centers for Disease and Prevention Control and the National Institutes of Health into four distinct levels, depending on the nature of the research and the biological agents that will be used in the laboratory. These levels are Biosafety Level 1, 2, 3 or 4, and are normally designated as BSL-1, BSL-2, BSL-3 and BSL-4.

Biosafety level 1 basically covers organisms that are not normally hazardous to healthy adults. Biosafety level 2 covers organisms and biological materials that pose moderate hazards to adults and personnel. These laboratories also have limited access and documented procedures for handling biological materials. Biosafety level 3 designates work with biological materials that could cause serious illness — including death — to humans if not handled properly. Biological materials falling into this category include pathogens like the West Nile virus. The

highest level of biosafety is BSL-4, which involves work with biological materials where vaccines are not currently available and which require workers to wear full hazmat-like positive pressure suits with self-contained air supplies.

The Biosecurity Research Institute will not be working with any BSL-4 biological materials. The BRI is a BSL-3 and BSL-3Ag facility, the latter an enhanced and specialized form of BSL-3 for working with livestock. BSL-3Ag incorporates almost all the same construction features of a BSL-4 facility and must meet specific construction standards set by USDA for the rooms to be primary containment barriers. However, the self-contained “space suits” are not required.

At K-State all laboratories are inspected by the Environmental Health and Safety office. Those using biological materials must have their activities approved by the Institutional Biosafety Committee. These approvals follow a prescribed process and include

site inspections by the Institutional Biosafety Committee and University Research Compliance Office for facility compliance, as well as for appropriate documentation for laboratory policies and procedures.

In order to work with more hazardous biological materials, additional external inspections must be made by organizations such as the CDC or the U.S. Department of Agriculture. This is the case with the most rigorously regulated biological materials, which are termed “select agents.” Facility inspections are done for each specific project involving a select agent to ensure that the facility is configured appropriately, that the support staff are trained to safely handle the specific select agent, that the experimental plans and security measures for the select agents are appropriate and documented, and that the select agent can be used in a safe and secure manner for the facility personnel and surrounding community.

## Biosecurity Research Institute Advisory Board



Guy Palmer, DVM, Ph.D.



Jan Sargeant, DVM, M.S., Ph.D.



Alfonso Torres, DVM, M.S., Ph.D.

**Dr. Guy Palmer** is the Creighton chair and director of the Washington State University School for Global Animal Health and the Regents professor of pathology and infectious diseases. Dr. Palmer's goal is to improve the control of animal diseases with direct impact on human health and well-being. Within this

focus, he has led collaborative infectious diseases research programs in southern and eastern Africa, the Middle East, and Latin America, where he currently directs a multi-institutional research effort studying genetic change in microbial pathogens and the risk for shifts in disease pattern and emergence.

“The Biosecurity Research Institute provides a unique resource needed to discover and fully develop innovative approaches to control infectious diseases. While clearly providing new opportunities for K-State faculty and affiliated scientists, the BRI is also a regional and national resource that can catalyze research to improve both livestock productivity and public health.”

**Dr. Jan Sargeant** is the director of the Centre for Public Health and Zoonoses at the University of Guelph in Ontario, Canada. Dr. Sargeant has performed research in areas of agri-food public health, policy research in microbial food safety, perception of risk of gastrointestinal illnesses, food and water safety, and the role of veterinary medicine in public health. She is currently developing a research agenda focused on policy and outcome evaluation issues in the prevention of zoonotic disease.

“The Biosecurity Research Institute at Kansas State University is unique in its ability to support high containment infectious disease research activities from basic discovery research through live animal and plant experiments. The diversity of approaches also leads to scientists from multiple disciplines working together and networking. This dynamic research environment and innovative research facility will produce research results that will lead to improved human and animal health in the U.S. and internationally.”

**Dr. Alfonso Torres** is the associate dean for public policy in the College of Veterinary Medicine at Cornell University. Prior to his current position, Dr. Torres served as the deputy administrator for Veterinary Services of USDA APHIS and U.S. chief veterinary officer and delegate to the World Organization for Animal Health. Dr. Torres was the director of the USDA's Plum Island Animal Disease Center on Plum Island, N.Y., from 1996 to 1999, following three years as chief of the Foreign Animal Disease Diagnostic Laboratory there. Prior to his service at USDA, Dr. Torres held academic positions at the National University of Colombia, the University of Nebraska-Lincoln, and Cornell University. Between academic experiences, Dr. Torres also worked in research and development and marketing of veterinary biologics and diagnostics with two large multinational corporations.

“The Biosecurity Research Institute's current capability provides a significant jumpstart for Kansas State University to work in this important field ahead of the construction and activation of the National Bio and Agro-defense Facility, placing K-State as the leading U.S. academic institution in the field of research on the most important pathogens that affect the health of plants, animals and people.”