The National Bio and Agrodefense Facility is Coming: How did it happen and why Manhattan?

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In January of 2009 the Department of Homeland Security (DHS) announced that Manhattan Kansas would be the site for the new National Bio and Agrodefense Facility (NBAF). The NBAF is a major federal procurement initiative to replace the aging Plum Island Animal Disease Center (PIADC) located at the tip of Long Island Yew York. With project costs estimated to exceed $500 million, the NBAF site competition has been at the center of a fierce three year-long competition between almost thirty groups vying for award of this major infectious disease laboratory. The winning strategy for the Heartland BioAgro Consortium, is a study in planning, cooperation, and regional collaboration.

Why do we need NBAF: In the sixties, seventies and eighties, national planners believed that infectious disease had been largely defeated: smallpox had been eradicated; efficacious vaccines and antibiotics had been developed and deployed; public health and nutritional programs improving well-being and quality of life were successful; and serious agricultural diseases like foot and mouth disease and brucellosis had been controlled. This resulted in the shift of research priorities away from infectious disease to other competing health concerns like cancer and heart disease. In the wake of the 9-11 terrorist and the subsequent anthrax attacks, the federal government recognized that there was a looming and plausible threat from infectious diseases. This included dozens of pathogens, most of which were zoonotic – affecting both humans and animals. Additionally, it became clear that many biological agents have properties that make them ideal for potential use as weapons by both state and non-state actors, with compelling evidence of massive offensive bioweapons programs in the old Soviet Union. Additionally, concerns arose about proliferation of biological agents and / or bioweapons technology to rogue nations for possible terrorist use. Most importantly, it became clear that infectious disease and biodefense research infrastructure in the U.S. was inadequate to meet current and future potential threats.

Consequently, major federal programs were imitated to strengthen biocontainment research capabilities and infrastructure. On the agricultural front, the 60 year old Plum Island Animal Disease Center (PIADC) lacked
important operational capabilities to work safely with biosafety-level 4 (BSL-4) agents like Nipah and Hendra virus, and had deteriorated beyond a condition reasonable to repair. Accordingly, national planners made the decision to build a modern research and development facility to address pathogens of consequence to agricultural entities. In 2005, the National Bio and Agrodefense Facility initiative was launched. One of the most important considerations of the DHS and their partner the United States Department of Agriculture (USDA) was where to locate the new laboratory. As a footnote to planning for the NBAF, in 2008 Graham - Talent headed a bipartisan commission studying weapons of mass destruction. In their report (World at Risk), they concluded that there was high probability of a biological or radiological attack in the U.S. by 2013, reinforcing the significant nature of the threat and the need for modern research facilities.

What is NBAF: The National Bio and Agrodefense Facility (NBAF) is the proposed federal infectious disease research, development, test and evaluation (RDTE) laboratory intended to replace the PIADC. Its mission: To protect U.S. agriculture from foreign animal diseases and zoonotic diseases, the latter being transmitted from animals to people. The principal means for accomplishing this mission: threat detection, vulnerability assessment, formulation of mitigation strategies, development of disease countermeasures, and vaccine licensing support. The NBAF is projected to be a 500,000 square foot facility and cost over five hundred million dollars. Permanent professional, technical and support staff will be greater than three hundred, with many hundreds of construction jobs created during construction. The anticipated long-term economic boost to the region and surrounding community is believed to ultimately be in the billions. Diseases currently projected for study in the NBAF: FMD Virus, Classical Swine Fever, African Swine Fever, Rift Valley Fever, Contagious Bovine Pleuropneumonia, Japanese Encephalitis Virus, Nipah Virus and Hendra Virus. Significantly, the NBAF will be built with state-of-the-art capabilities to work with any emerging or remerging pathogens determined to be a threat to U.S. agricultural infrastructure.

How did we win? The anatomy of a successful consortium: There are many factors that contributed to the successful bid of the Heartland BioAgro Consortium for the NBAF site. These would include:

Pre-existing Working Relationships: When the NBAF solicitation appeared in 2005, key state and regional leaders already had established good working relationships and communications on other initiatives. Examples include:

1. the successful effort to build the Biosecurity Research Institute (BRI), a fifty-five million dollar state-funded, state-of-the-art, agricultural biocontainment facility on campus at K-State; and
2. regional efforts to establish the Kansas City Animal Health Corridor (a result of recommendations in the
Consequently, the backbone of a nascent working consortium was in place to provide early planning and coordination.

Establishment of a Dedicated Task Force: One of the key early strategic decisions was to create the “NBAF in Kansas Task Force,” a strong coalition committed to promoting the importance of research to protect the American food supply and agriculture economy.

The task force worked to facilitate the NBAF proposal preparation, and to secure the site award for the consortium.

The task force worked on the premise that the state is uniquely prepared and qualified to advance the NBAF research mission. Appointed by executive order, the NBAF in Kansas Task Force included a team of citizens, scientists, civic leaders, elected officials, industry leaders, farmers, and agricultural specialists working closely with the Kansas Bioscience Authority (KBA) to provide seamless support to the federal government throughout the NBAF process.

During the site selection portion of the process, the task force assisted in the development of the site location packages; coordinated with the Kansas congressional delegation; fostered collaboration among state research institutions and industry; provided information to the public; and responded to requests for information from the U.S. Department of Homeland Security (DHS).

Involvement of the Kansas Bioscience Authority (KBA): The KBA was created by the Kansas Economic Growth Act of 2004 with the sole purpose of advancing Kansas' leadership in bioscience. The KBA vision and strategies for the authority: "Kansas is the preeminent bioscience center in the Midwest, serving healthcare, energy, agricultural, animal health, biomaterial, and national-security needs throughout the nation and around the world by virtue of its excellent research, education, and vibrant industry clusters." The KBA recognizes that "its public, private, and academic partners are often at the forefront of efforts to expand bioscience R&D, foster the formation and growth of startups, and lead corporate expansion and attraction efforts." The KBA has been a driving force in the planning and execution of the successful bid to land the NBAF in the State.

The Animal Health Corridor: In 2002, the consulting firm, Braake, Inc., identified animal health as a notable and unrecognized regional strength, ideal for economic development and leverage within the area. This recognition led to the designation of the Kansas City Animal Health Corridor, a region roughly bounded by an area stretching west to east from Manhattan KS to Columbia MO, and north to south from St Joseph MO to southern Johnson County KS. Remarkably, this relatively compact area contains corporate headquarters for the largest concentration of animal health industries in the world, responsible for one third of the global market for animal health products and services. This conglomeration of animal health industries greatly strengthened the case that Manhattan was ideally located for collaboration and exploitation of
research products developed by the new federal laboratory.

**Kansas City Life Sciences Institute (KCLSI):** The KCLSI provided an essential element in regional and bi-state cooperation and collaboration during the entire proposal process. Their involvement provided leadership and a coordinating presence in putting together the impressive and diverse regional consortium responsible for the winning proposal.

**Pre-existing Agricultural Biocontainment Research Commitment:** In the late 1990, K-State identified food safety and security as major programmatic thrust areas for the university. In March 1999, K-State created the “Homeland Defense Food Safety, Security, and Emergency Preparedness Program,” and proposed the need for a BSL-3Ag facility to confront emerging threats to the food supply. In October 1999, K-State President Wefald testified before the U.S. Senate’s Emerging Threats Subcommittee on the “Agricultural Biological Weapons Threat” facing America. This forward-thinking decision by university leaders to focus on threats to the nation’s agricultural infrastructure eventually resulted in the construction of the Biosecurity Research Institute (BRI) at K-State, a world-class biomedical research facility with capabilities to perform large-scale infectious disease research activities with food animals. The commitment of the university to build a major agricultural biocontainment facility, and the overwhelming community acceptance of the BRI was perhaps the biggest discriminator for DHS in their deliberation about a site for the NBAF.
Contributions in kind: A major factor in the selection process were the “contributions in kind” pledged in support of the winning bid. These included: donation of nearly 40 acres of K-State campus real estate for the NBAF; millions of dollars for programs to jump-start mission-critical research in the interim period before the NBAF facilities are completed; and favorable agreements for Manhattan city services for the NBAF.

The Heartland BioAgro Consortium: The formation of the Heartland BioAgro Consortium was a key strategic move in the formulation of the winning bid. The depth and breadth of regional collaboration and support is evident in the diverse makeup of the consortium.

Organized and Strong State and Local Political Support: From the initial stages of planning and preparation for the NBAF bid, there was strong bipartisan political and community support for the project. Active participants included: the Kansas Congressional Delegation; Kansas Governor and Legislature; Kansas Governor’s NBAF Task Force; Kansas Board of Regents; Riley County Commission; Manhattan City Commission; Manhattan Area Chamber of Commerce; K-State Faculty Senate Leadership; K-State Classified Senate Leadership; K-State Student Governing Association; and Kansas Agricultural Producer Groups.

Co-location with Kansas State University: The Heartland BioAgro Consortium believed that co-location with a major land grant university with; a college of veterinary medicine; and strong programs in agriculture would have strong appeal to planners for the new NBAF. This was in fact borne out in DHS decision matrix documents.

In concert with the theme of the Merrill Research Retreat: “Regional Research Collaborations,” the selection
of Manhattan Kansas as the site for the National Bio and Agrodefense Facility (NBAF) underscores the importance of vision, strategic planning and perhaps most importantly, collaboration and regional team-building. Without the collective power of a regional collaborative approach involving a broad stratum of partners, collaborators, and stakeholders, the Department of Homeland Security would probably have picked another site for the NBAF. So for the Heartland BioAgro Consortium, the key element of the winning formula was the quality, breadth and depth of its many active partners.