

Program Summary

In fiscal year 2020, the legislature appropriated \$5 million to Kansas State University to strengthen and leverage K-State's renowned programs and infrastructure in areas related to Global Food Systems. The intent of the funding was to support sustainable economic growth and prosperity in industries that are foundational to the Kansas economy.

K-State serves as the physical epicenter for Top 10 ranked programs in research, teaching and engagement related to food systems research and workforce development. The university has been investing state, federal and private-sector dollars to build our strengths in GFS-related disciplines for many years. The GFS funding greatly enhances the ability of the university to establish Kansas and the region as the premier destination for the food and animal health research and innovation. This research enables K-State to discover solutions that ensure global food security.

The Edge Collaboration District provides a gathering place for the university, as well as public and private sectors and will create jobs in Kansas.

"This [district] is an economic development road map that will guide the success and competitiveness of K-State, our community, and the region for decades to come," said Richard B. Myers, university president.

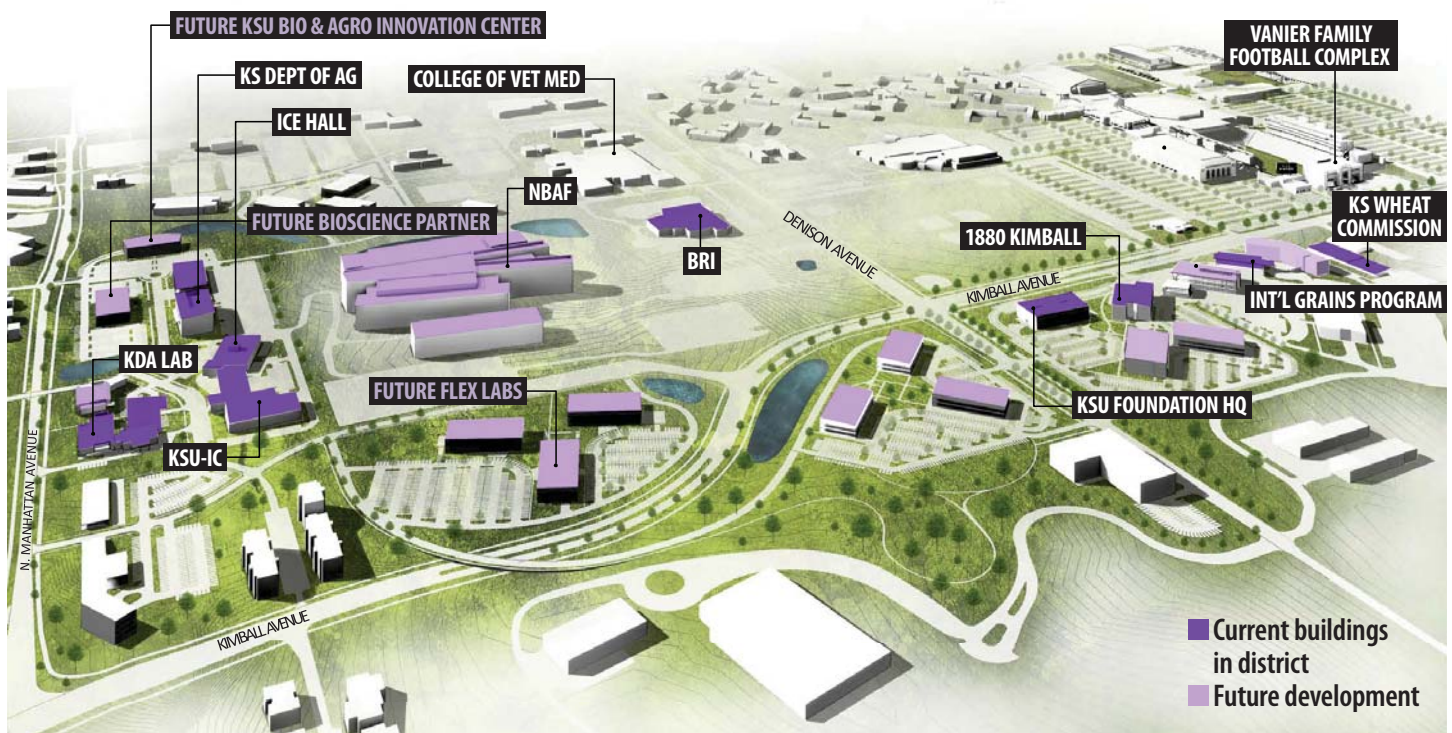
Vision

Global leadership in food will be achieved and maintained by building upon the recognized strengths in bio-agro defense, food safety and security, food design and nutrition, and food production and transportation at K-State. The university engages in a systems approach to:

- Create and deploy multidisciplinary, multi-institutional and multinational teams of subject matter experts.
- Leverage unique facilities.
- Educate the next generations for the global food systems workforce.
- Support economic prosperity in the region by creating 5,000 new jobs by 2035.

At more than \$40 billion per year, the food industry in Kansas supports more than 100,000 jobs, but it remains vulnerable. Increasing demand for food and the effects of changing production conditions, emerging diseases and food safety concerns will create a need for food innovation and a more highly educated workforce on a massive scale.

K-State is committed to job and wealth creation. Carefully crafted GFS research, targeted workforce development, and national/international private-sector engagement allow the university to deliver on that commitment.



Use of Funds

The university has invested the GFS appropriation in two broad areas:

1. Strategic capacity building

State appropriation for global food systems has provided support for the Biosecurity Research Institute. The BRI, a unique biosafety level-3 facility, supports multidisciplinary research and training. In FY20, K-State was awarded a University SARS-CoV-2/ COVID Research & Diagnostic Capacity Support Grant. These funds will be used to launch the Biotechnology Development Module at the BRI. This grant will enable K-State to continue to grow its vaccine development strategy.

2. Private sector partnerships and sponsored funding attraction

GFS funding provided resources for industry attraction and technology commercialization efforts in agriculture and animal health. The university onboarded 152 new industry-supported projects in FY20, reflecting increases of more than 70% in the last five years. Industry-funded collaborations in FY20 comprised more than 20% of the overall research funding portfolio. Targeted private-sector strategic partnerships continued to expand in FY20 through 26 new master research collaboration agreements, bringing the total to 79, with 7 more pending final negotiation. This includes new partnerships with FMC Corporation, Corbion Ingredients Inc., Boehringer Ingelheim, Genencor International, Black Hereford Holdings Inc, AGCO, and CNH Industrial International. Total extramural research funding increased from \$173.5 million to nearly \$200 million for FY20, a nearly 15% increase over the record year achieved in FY19, and has increased by 55% over the past five years, with industry funding remaining stable. Food-related research funding comprised more than \$59 million of the FY20 funding portfolio.

Funding Impacts

GFS funding has helped support:

- Research that has led to several licensing agreements signed in FY20 for COVID-19-related technologies, including one with Cocrystal Pharma for a potential treatment for COVID-19 and a research agreement for preclinical research and an option agreement with Tonix Pharmaceuticals to develop a vaccine candidate for the prevention of COVID-19.
- Research on African Swine Fever Virus, including ways that foreign animal diseases could be introduced through feed and feed ingredients. The BRI is the only university laboratory where researchers can study ASFV, a biosafety level-3 pathogen.
- The podcast series "Something to Chew On," which reaches listeners in more than 60 countries. The series explores the complexity and nuance of the global food system, celebrates the progress K-State has made and debates how best to proceed into the future.
- Pandemic shutdowns of research on campus began in March and extended through June 2020, and impacted the ability to spend GFS funds in FY20-Q4. Resources invested in research team attraction, corporate partnership development, and the spring 2020 seed grant program totaling \$1,075,044 were unspent; the governor has recommended sweeping these funds.

Financial Summary for FY 2020

Capacity Building

Biosecurity Research Institute: \$1,930,214

Research team attraction: \$510,603

Subtotal: \$2,440,817

Private Sector

Strategic corporate partnerships/company attraction: \$800,000

Economic prosperity accelerator: \$450,000

Management, communication, outreach: \$234,139

Subtotal: \$1,484,139

Total: \$3,924,956

Match

External Funding Highlights

- Researchers who received \$450,000 in FY15 GFS seed grants obtained \$8.5 million in external funding. The Fall 2019 cohort received \$454,083 of GFS funding and were successful in leveraging an additional \$5.5 million in external funding. The Spring 2020 cohort received \$518,649 and leveraged an additional \$2.6 million in external funding, thus far.

Private Sector Highlights

- K-State received more than \$3.2 million in licensing revenue for GFS technologies and deployed more than 30 GFS technologies through new license and option agreements in FY20.
- In FY20, K-State received 24 industry funded food-related projects exceeding \$100,000 each.