

September 2015

Introduction and Table of Contents

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Recommended Citation

Schulz, Kirk and Burg, Karen (2015) "Introduction and Table of Contents," *Seek*: Vol. 5: Iss. 2.

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Fall 2015

Message from President Kirk Schulz and Vice President for Research Karen Burg

In academia, we're always cautious about definitively claiming something, but after more than 150 years of experience working on the topic, we at Kansas State University can reasonably state that we are one of the world's leaders in food research.

We have a proud heritage in food research and education. Kansas State University was the first operational land-grant institution under the Morrill Act in 1863. As a land-grant, our focus has been on teaching practical agriculture, science and engineering to improve lives since our inception. This entire issue is devoted to food research and a sampling of the food-related projects and ideas at Kansas State University that are focused on addressing some major food-related challenges in the world's future.

The current world population is more than 7.3 billion people. By 2050, that population is projected to be at least 9.6 billion, with most of the growth in developing regions such as China, India and Africa. By 2030, the global middle class will grow from 2 billion people to at least 4.9 billion. Most of this growth also will be in China, India and Africa. This population segment will demand a safe, higher-quality diet focused on animal protein and cereal grains.

Projections indicate humans will need to produce between 70 to 100 percent more food to meet demand. That means in the next 35 years, the world will need to produce more food than ever before in human history. Because agriculture in developed nations is already largely efficient, and we can't add to the agricultural lands that make up 40 to 50 percent of the Earth's surface, the challenge is huge. Innovation must happen in growth areas such as China and Africa.

In 2014, we introduced the Global Food Systems Initiative, the university's first presidential initiative. Initiative activities use our skills, expertise and world-class research facilities in the food system to accelerate research and solutions for our private and public food

industry partners, as well as the producers who are responsible for the largest percentage of the world's food supply: farmers in developing nations with small acreages, also known as smallholder farmers. Faculty and staff in all of the university's colleges are contributing to this initiative with projects that focus on food sustainability, food bio- and agro-defense, and food accessibility and nutrition.

In addition to our heritage, what other evidence supports Kansas State University's status as a global food leader?

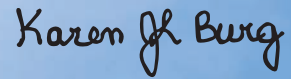
For starters, the U.S. Agency for International Development has invested more than \$100 million in our capabilities to establish four new Feed the Future Innovation Labs at Kansas State University. These federal labs focus on reducing global hunger by helping smallholder farmers grow better crops, use improved methods for defending food crops against disease and insect pests, and establish more efficient methods of distributing the harvests — all while helping them turn a profit.

We also encourage you to read stories about our work in improving wheat genetics (Page 13), using fewer natural resources (Page 26) and reintroducing grocery stores into rural communities to feed those at home (Page 14).

The Global Food Systems Initiative will help us continue to serve as a food research leader by eliminating some food production hurdles, and it will help us maintain our trajectory toward becoming a Top 50 public research university by 2025.



President Kirk Schulz



Vice President for Research Karen Burg





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