The Global Food Systems Initiative at Kansas State University has a mission of “Solving global food challenges through innovation outreach and talent development.” A lofty mission, with an equally lofty vision taking us to the details of creating and deploying multidisciplinary, multi-institutional, and multinational teams of subject matter experts to tackle grand challenges in sustainably feeding the growing world population in the next 50 years.

Worldwide, current approaches to food production and resource management are not sustainable. With the projected increase in world population to hit 10 billion by 2050, continuous changes in climate and its impact on food production conditions, water availability and usage, and reduced plant diversity are just a few of the grand challenges facing food systems worldwide.

These grand challenges cannot be addressed with single focus methodologies, rather the complex food system requires multifaceted approaches to tackling, solving and changing the way in which food is made available in a sustainable and healthful manner.

The complexity of our food system is not a global challenge only. The issue of sustainability and healthful availability of food is most certainly regional and even local to the State of Kansas. Food deserts result due to the closing of grocery stores in rural areas, the loss of diversity in planting crops locally, expansion of single crop farming practices and lack of knowledge in small farming techniques. Water availability, drought, plant diversity and the changing demographic in rural Kansas has led to regions of healthy food scarcity.

Barriers to the availability of healthy food vary broadly and many areas of research carried out at K-State speak to these obstacles. Some examples include:

- Logistics and the ability to manage supply chains to and from farms, rural grocery stores and customers in a cost effective and timely manner are studied in the Department of Industrial Engineering, Agricultural Engineering, and Economics.

- Barriers raised by the cost and availability of food is studied from an Economic and Sociological perspective.

- Water use and availability for crop production is studied in multiple areas of the university including Departments of Geology, Geography, Agronomy, Civil Engineering, and more.

- Small and Urban farming practices are increasing and needed to support food security in food poor areas of the state – this work is studied in the Department of Horticulture both at the Manhattan and Olathe campuses.

- Social pressures are often a driving force in the availability of food and studied in the Department of Sociology, Anthropology and Social Work.

More importantly than one-off areas of research, as these grand challenges are identified at a high level or are parsed into specific areas of need, the ability to form multidisciplinary teams is key to providing solutions. The
complexity of any given challenge, large or small, is such that multiple perspectives are needed to understand and define possible solutions.

The focus of K-State’s Global Food Systems Initiative is to help to align those disparate interests in the identification of methods required to solve complex sustainable food challenges.