

SNAPSHOT: FEED THE FUTURE INNOVATION LABS

Feed the Future, the U.S. Government's global hunger and food security initiative, is pairing American ingenuity and expertise with some of the best and brightest minds across the globe through its 22 Feed the Future Innovation Labs. A unique network supported by over 70 top U.S. colleges and universities along with many partner country research and educational institutions, the Innovation Labs are on the cutting edge of efforts to research, develop and take to scale effective technologies that address current and future challenges posed by a changing climate and the need to feed a growing global population with safe and nutritious food. The Feed the Future Innovation Labs also provide short- and long-term training to support the sustainability of these efforts while training the next generation of scientists.

Below is a brief description of the 22 Feed the Future Innovation Labs, with lead university and individual contact information highlighted. For more information about the Feed the Future Innovation Labs, please contact clewin@usaid.gov.

Feed the Future Innovation Lab for Applied Wheat Genomics

Lead University: **Kansas State University**

This Innovation Lab develops heat-tolerant, high yielding, farmer accepted wheat varieties through local characterization and breeding networks, using the most advanced genomic tools.

Research Focus: Bangladesh, India, Pakistan

Director: Jesse Poland, jpoland@ksu.edu · *Website:* www.k-state.edu/wheat-innovation-lab/

Feed the Future Innovation Lab for Climate-Resilient Beans

Lead University: **The Pennsylvania State University**

This Innovation Lab integrates new scientific technologies with traditional breeding approaches to develop heat- and drought-tolerant, high-yielding, farmer accepted bean varieties.

Research Focus: Colombia, Honduras, Malawi, Mozambique, Tanzania, Zambia

Director: Jonathan Lynch, jpl4@psu.edu · *Website:* <http://plantscience.psu.edu/research/labs/roots/projects/usaid-crb>

Feed the Future Innovation Lab for Climate-Resilient Chickpea

Lead University: **University of California, Davis**

This Innovation Lab emphasizes the crop-based traits of climate resilience, nutrition, disease resistance, nitrogen fixation and yield, focusing genetic improvement on the needs of smallholder farmers.

Research Focus: Ethiopia, India

Director: Doug Cook, drcook@ucdavis.edu · *Website:* <http://chickpealab.ucdavis.edu/>

Feed the Future Innovation Lab for Climate-Resilient Cowpea

Lead University: **University of California, Riverside**

This Innovation Lab develops and applies advanced genomic tools to cowpea breeding to increase yield, drought tolerance and fungal resistance in cowpea (or black-eyed peas), a common nutritious staple in African countries.

Research Focus: Burkina Faso, Ghana, Nigeria, Senegal

Director: Timothy Close, timothy.close@ucr.edu · *Website:* <https://agrilinks.org/activities/climate-resilient-cowpea-innovation-lab>

Feed the Future Innovation Lab for Climate-Resilient Sorghum

Lead University: **University of Georgia**

This Innovation Lab is using new scientific tools to develop drought- and heat-tolerant varieties of sorghum, which builds climate resilience into sorghum production systems, while also exploring new approaches to production through the development of perennial sorghum.

Research Focus: Ethiopia, India, Kenya, Mali, South Africa

Director: Andrew Paterson, paterson@uga.edu · *Website:* <http://www.caes.uga.edu/global/feed-the-future-innovation-labs/climate-resilient-sorghum-innovation-lab.html>

Feed the Future Innovation Lab for Climate-Resilient Wheat

Lead University: **Washington State University**

This Innovation Lab is using conventional breeding approaches, improved breeding tools, and leveraging genomic resources to develop new wheat varieties that withstand heat stress in the Indo-Gangetic plains.

Research Focus: Bangladesh, India

Director: Kulvinder Gill, ksgill@wsu.edu · *Website:* <https://agrilinks.org/activities/climate-resilient-wheat-innovation-lab>

Feed the Future Innovation Lab for Food Processing and Post-Harvest Handling

Lead University: **Purdue University**

This Innovation Lab is working to increase access to safe and nutritious foods along the value chain by improving the drying and storage capacity of smallholder farmers and expanding market opportunities through diversified processed products that address quality in the market and nutritional needs.

Research Focus: Kenya, Senegal

Director: Betty Bugusu, bbugusu@purdue.edu · *Website:* <https://ag.purdue.edu/ipia/fpl>

Feed the Future Innovation Lab for Fish

Lead University: **Mississippi State University**

This Innovation Lab will research technologies and practices that lead to sustainable increases in fish production, reduction and mitigation of risks to fish production systems while increasing household nutrition and economic opportunities.

Research Focus: Bangladesh, Ghana, Nigeria, Uganda

Director: Mark Lawrence, lawrence@cvm.msstate.edu

Feed the Future Innovation Lab for Food Security Policy

Lead University: **Michigan State University**

This Innovation Lab is helping to establish policies conducive to market-led, smallholder-focused, inclusive agricultural growth, and a sustainable and inclusive agrifood system, by focusing on country, regional and global research, capacity building and support to donor food security policy work.

Research Focus: Burma, Malawi, Mali, Nigeria, Senegal, Tanzania, Zambia, Venezuela, Africa Great Lakes and West Africa regions

Director: Mywish Maredia, maredia@msu.edu · *Website:* <http://fsg.afre.msu.edu/fsp/index.htm>

Feed the Future Innovation Lab for Genomics to Improve Poultry

Lead University: **University of California, Davis**

This Innovation Lab is working to reduce limitations to chicken production by applying advanced genetics and genomic approaches to enhance innate resistance to Newcastle disease and tolerance to heat stress in chickens in places where Newcastle disease and hot climates are prevalent.

Research Focus: Ghana, Tanzania

Director: Huaijun Zhou, hzhou@ucdavis.edu · *Website:* <http://gip.ucdavis.edu/>

Feed the Future Innovation Lab for Horticulture

Lead University: **University of California, Davis**

This Innovation Lab is improving smallholder farmers' abilities to grow, sell and consume nutritious, high-value fruit and vegetable crops by targeting innovative technologies including safe production practices, postharvest handling, increasing research capacity, improving access to information and markets, and ensuring gender equity.

Research Focus: Bangladesh, Burkina Faso, Cambodia, Guatemala, Guinea, Honduras, Kenya, Nepal, Rwanda, Tajikistan, Tanzania, Uganda, Zambia

Director: Elizabeth Mitcham, ejmitcham@ucdavis.edu · *Website:* <http://horticulture.ucdavis.edu/>

Feed the Future Innovation Lab for Integrated Pest Management

Lead University: **Virginia Polytechnic Institute and State University**

This Innovation Lab is supporting improved, environmentally sustainable yields for smallholder farmers through the implementation of participatory, integrated pest management (IPM) programs in horticultural, grain and legume crops using centers of excellence for dissemination of best IPM practices and scalable solutions.

Research Focus: Bangladesh, Cambodia, Ethiopia, Kenya, Nepal, Tanzania, Vietnam

Director: Rangaswamy "Muni" Muniappan, rmuni@vt.edu · *Website:* <http://www.oired.vt.edu/ipmil/>

Feed the Future Innovation Lab for Legume Systems Research

Lead University: **Michigan State University**

This Innovation Lab will foster dynamic, profitable and environmentally sustainable systems for edible legumes such as common bean, cowpeas (including black-eyed peas), and pigeon peas while investigating crop production systems that utilize legume tree species for soil fertility.

Research Focus: Ghana, Guatemala, Honduras, Mali, Niger, Nigeria, Senegal

Director: Barry Pittendrigh, pittendr@msu.edu

Feed the Future Innovation Lab for Livestock Systems

Lead University: **University of Florida**

This Innovation Lab is working to improve livestock systems by addressing key issues of livestock value chains, including quality feed supply, disease management, food safety, market access and enabling policies that drive sustainable increases in animal source food consumption to combat undernutrition and poverty.

Research Focus: Burkina Faso, Cambodia, Ethiopia, Kenya, Nepal, Niger, Rwanda, Uganda

Director: Adegbola Adesogan, adesogan@ufl.edu · Website: <http://livestocklab.ifas.ufl.edu/>

Feed the Future Innovation Lab for Nutrition

Lead University: **Tufts University**

This Innovation Lab is identifying ways that policy and program interventions, particularly those that involve agriculture, can most effectively achieve large-scale improvements for maternal and child nutrition.

Research Focus: Bangladesh, Ethiopia, Malawi, Mozambique, Nepal, Sierra Leone, Tanzania, Uganda

Director: Patrick Webb, patrick.webb@tufts.edu · Website: <http://www.nutritioninnovationlab.org/>

Feed the Future Innovation Lab for Peanut

Lead University: **University of Georgia**

This Innovation Lab works to alleviate hunger by helping smallholder farmers grow and profit from healthy peanut crops which includes developing new varieties, pre-and post-harvest management and processing, and research areas focused on peanut-based nutrition, gender and youth.

Research Focus: Burkina Faso, Ethiopia, Ghana, Haiti, Malawi, Mali, Niger, Nigeria, Mozambique, Senegal, Uganda, Zambia

Director: Dave Hoisington, davehois@uga.edu · Website: <http://ftfpeanutlab.caes.uga.edu/>

Feed the Future Innovation Lab for the Reduction of Post-Harvest Loss

Lead University: **Kansas State University**

This Innovation Lab is working to reduce post-harvest loss of stored product crops (grains, oilseeds, legumes, root crops, nuts, spices, seeds) and related processed products by enabling smallholder farmers, cooperatives, agribusinesses, NGOs and other stakeholder partners to improve moisture measurement, drying and storage techniques, insect and mycotoxin prevention, and market-based value chain access.

Research Focus: Bangladesh, Ethiopia, Ghana, Guatemala, Honduras, Nepal

Director: Jagger Harvey jjharvey@ksu.edu · Website: <http://www.k-state.edu/phl/>

Feed the Future Innovation Lab for Rift Valley Fever Control in Agriculture

Lead University: **University of Texas, El Paso**

This Innovation Lab is developing a vaccine against Rift Valley Fever, a highly infectious and deadly cattle disease, and fine-tuning a novel, needle-free injection device to deliver the vaccine. The program is also

designing a diagnostic test to help people differentiate between infected and vaccinated animals—information that is critical for exports and trade.

Research Focus: Tanzania

Director: George Bettinger, gebettinger@utep.edu · *Website:*

<http://research.utep.edu/Default.aspx?alias=research.utep.edu/riftvalleyfeverinnovationlab>

Feed the Future Innovation Lab for Small-Scale Irrigation

Lead University: **Texas A&M University**

This Innovation Lab is identifying promising small-scale irrigation technologies, practices and strategies at the farm level that can improve agricultural productivity and reduce farmer risk during the dry season.

Research Focus: Ethiopia, Ghana, Tanzania

Director: Neville Clarke, n-clarke@tamu.edu · *Website:* <http://ilssi.tamu.edu/>

Feed the Future Innovation Lab for Sorghum and Millet

Lead University: **Kansas State University**

This Innovation Lab is advancing biophysical and social sciences that contribute technologies and knowledge toward the enhancement of adaptation, resilience and profitability of sorghum- and millet-based production systems and value chains.

Research Focus: Burkina Faso, Ethiopia, Haiti, Mali, Niger, Senegal

Director: Timothy Dalton, tdalton@ksu.edu · *Website:* <http://www.k-state.edu/smil/>

Feed the Future Innovation Lab for Soybean Value Chain Research

Lead University: **University of Illinois**

This Innovation Lab is contributing to increased productivity of smallholder soybean farmers by advancing improved varieties, supporting local best production practices, enhancing processing technologies, and promoting development of the soy value chain.

Research Focus: Ethiopia, Ghana, Malawi, Mozambique, Zambia

Director: Peter Goldsmith, pgoldsmi@illinois.edu · *Website:* <http://soybeaninnovationlab.illinois.edu/>

Feed the Future Innovation Lab for Sustainable Intensification

Lead University: **Kansas State University**

This Innovation Lab focuses on integrated farming systems research and technologies to sustainably increase agricultural productivity and income that provide food security and nutrition to smallholder farmers.

Research Focus: Bangladesh, Burkina Faso, Cambodia, Ethiopia, Malawi, Senegal, Tanzania

Director: Vara Prasad, vara@ksu.edu · *Website:* www.k-state.edu/siil