

Innovation Lab for Collaborative Research on Peanut Productivity and Mycotoxin Control



In Ghana

Feed the Future supports 24 innovation labs at universities across the country. Those labs foster research in crops like wheat, poultry and legumes, as well as techniques such as irrigation and safe storage of crops to alleviate hunger.

At the core of Feed the Future is the belief that hunger and poverty can be alleviated through innovation and collaboration.

Why peanuts?

Peanuts, or groundnuts as they are called in much of the world, are an important food source. Nearly 40 million tons of peanuts are produced each year, 95 percent of them in developing countries.

Nutrition

- Peanuts are a great source of protein. An ounce of peanuts has nearly as much protein as a cup of milk.
- Peanuts have become the standard base for Ready to Use Therapeutic Food (RUTF), which is used to treat severe malnutrition.

Income

- Peanuts are an important cash crop in many countries.
- Women often grow and process the peanuts, making the crop an important source of income to families in the developing world.
- Due to problems with contaminants and low yields, farmers' income is limited.

Environment

- Peanuts improve the soil by fixing nitrogen.
- Peanuts use water efficiently, making them drought tolerant.

What are mycotoxins?

Molds that can grow on peanuts and crops such as corn create poisonous aflatoxin, a type of mycotoxin, that stunts growth and causes cancer. The toxins not only make people sick, they also prevent farmers from marketing the crop.

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In Malawi

What is Feed the Future?

Feed the Future is the U.S. government's global hunger and food security initiative. Working together with partners developing countries, Feed the Future forges long-term solutions by:

- Building capacity in partner countries
- Promoting collaboration between partners
- Empowering women, who are vital to agriculture
- Embracing innovative partnerships with the private sector, civil society and the research community
- Fostering policies that enable private investment
- Advancing big ideas and climate-smart agriculture through research and innovation
- Integrating agriculture and nutrition, with a particular focus on mothers and children
- Maximizing cost-effective results that create the conditions where our assistance is no longer needed



In Malawi



In Uganda

Peanut & Mycotoxin Innovation Lab (PMIL)

What we do

The Feed the Future Innovation Lab for Collaborative Research on Peanut Productivity and Mycotoxin Control is headquartered at the University of Georgia in Athens, but brings together researchers from a dozen top universities and other agencies in the U.S. Working with colleagues in partner countries, these researchers are solving problems in production, storage, processing and marketing that lead to food insecurity.

Along the way, graduate students in the U.S. and overseas partner countries work on components of those solutions, gaining valuable experience as they become the next generation of innovators.

PMIL's work happens around the world. Here are just a few of the projects:

Mark Manary (top left) has spent his career as a pediatrician addressing childhood malnutrition in countries like Malawi. With PMIL, the Washington University in St. Louis professor has treated more than 1,000 pregnant women for malnutrition and tracked how the peanut supplement provided to them improved their outcomes and the health of their newborn children.

David Jordan and Rick Brandenburg at North Carolina State study the entire value chain of peanuts – from field to market – in target countries in Africa to find where to intervene to



In Haiti

keep aflatoxin out of the crop. Greg MacDonald, an agronomist at the University of Florida, leads similar work in Haiti.

Boris Bravo-Ureta examines the complicated value chain to see how new varieties, agronomic and post-harvest activities or market conditions impact the bottom line of farmers. He is a member of the faculty at the University of Connecticut.

Renee Arias is working to take the toxicity of molds. By silencing the gene that allows certain molds to make toxins, the U.S. Department of Agriculture researcher hopes to stop poisonous aflatoxin from forming without the risk of developing fungicide-resistant mold. Abdi Hassen (right) is working with Arias while completing his doctorate and will return to his home country of Ethiopia with new tools to combat aflatoxin.



Who we are

Current lead researchers:	Greg MacDonald (U. of Fla.)
Haibo Yao (Miss. State)	Nicholas Magnan (U. of Ga.)
Kumar Mallikarjunan (Va. Tech)	Mark Manary (Washington U.)
Jia-Sheng Wang (U. of Ga.)	Boris Bravo-Ureta (U. of Conn.)
Peggy Ozias-Akins (U. of Ga.)	Rick Brandenburg (NCSU)
C. Michael Deom (U. of Ga.)	*****
Renee Arias (USDA-ARS)	Director: Dave Hoisington
David Jordan (NCSU)	Asst. Director: James Rhoads

Where we work

Most peanut farmers in these countries:

- Farm less than 2 acres
- Use manual labor and hand tools
- Produce 300 to 800 pounds per acre
- Are women growing peanuts to feed their families
- Will sell the remainder of what they grow at local markets for cash

