



Purdue Agriculture Makes a Difference in Indiana

Purdue Agriculture research and Extension programs funded by the Smith-Lever Act, the Hatch Act, and the Agriculture and Food Research Initiative (AFRI) have direct and significant benefits for the people of Indiana and Indiana's agriculture industry. At a time when the agriculture industry is being called on to feed and fuel our hungry world, continued investment in research and Extension is vital to U.S. competitiveness.

Current Purdue (Fiscal Year 2018) funding from these three sources:

Smith-Lever (Extension).....	\$9.2M
Hatch (Research).....	\$5.1M
Agriculture and Food Research Initiative (Competitive Grants).....	\$8.3M

Smith-Lever

Established by Congress in the Smith-Lever Act of 1914, the Cooperative Extension System is an educational partnership between the USDA and America's land-grant universities such as Purdue. Purdue Extension professionals listen to local residents to identify important needs. Purdue Extension specialists conduct research on issues of importance to our state and nation. Purdue Extension works in every Indiana county to deliver research-based educational programs that address local needs and resolve critical issues across the state.

Examples of the impact of Purdue Extension:

- The U.S. Bureau of Labor Statistics projects that in three years, there will be 1.4 million jobs available related to computer science and only 400,000 qualified candidates.



Funded by a \$1.5 million grant from Google.org,, 4-H is partnering with Google to teach youth technical skills such as coding and the teamwork they'll need in the future. This computer science program reaches more than 100,000 people across 22 states, including Indiana. The program reaches communities where youth traditionally have limited access to computers, internet, or computer science training.

- Pollinator-dependent crops are integral to economies across Indiana and the world –creating jobs, representing 35% of global crop production value, and generating hundreds of billions of dollars. Pollinators are on the decline and we need to take action.



Purdue Extension Specialists developed the award-winning publication series Protecting Pollinators. It is free to download and offers practical tips to protect and attract pollinators for homeowners, farmers, and commercial applicators.

- The nation's opioid crisis affects all socioeconomic groups and geographic areas and is especially critical in rural areas. According to the Centers for Disease Control, the rate of opioid-related overdose deaths in non-metro counties is 45 percent higher than in metro counties. To address the impact of the crisis in Indiana's rural and farming communities, Purdue Extension recently received a National Institute of Food and Agriculture grant to expand the Strengthening Families program to prevent or reduce opioid abuse in rural communities in Indiana and to develop a series of regional webinars for professionals.

Hatch Act

America's national network of state and federally supported food and agricultural research laboratories is the envy of the world. These "State Agricultural Experiment Stations" were established under the Hatch Act of 1887 and receive appropriations through the USDA's National Institute of Food and Agriculture (NIFA). In Indiana, Hatch funds support research infrastructure focused on addressing key societal problems such as food safety, enhancing agricultural productivity, and developing sources of renewable energy. Our faculty leverage Hatch funds to help secure additional competitive funding.

Examples of Hatch-funded research:

- Heat stress has negative effects on sow production and reproductive performance, with reduced milk production, decreased litter weight gain, body weight loss during lactation, and lower subsequent reproductive performance. Researchers in Animal Sciences and Agricultural and Biological Engineering have collaborated to develop a cooling pad able to remove excess heat from lactating sows. Using these individual cooling pads instead of cooling entire floors is less expensive, more efficient, and allows adjustment for each individual sow's comfort.
- Purdue's Center for Commercial Agriculture collaborates with the CME Group to produce the Ag Economy Barometer, a nationwide measure of the health of the US agricultural economy. Each month, 400 agricultural producers are surveyed to calculate a monthly index that focuses on key drivers of the US farm economy, including farm profitability, farmland values and commodity prices, as well as seasonal drivers such as seed, fertilizer and feed ingredient prices. The web site has had more than 20,000 unique visits since it was launched in May 2016 and generated nearly 67,000 page views.



Agriculture and Food Research Initiative (AFRI)

AFRI is the National Institute of Food and Agriculture (NIFA) competitive grant program. AFRI is designed to keep American agriculture competitive while ending world hunger; improve nutrition and end child obesity; improve food safety; secure America's energy future; and mitigate and adapt to climate change. Purdue Agriculture researchers have a strong record of success in obtaining AFRI funds.

Examples of AFRI-funded research:

- A multi-university project titled "Useful to Usable", led by Purdue's Dr. Linda Prokopy, is a multi-year integrated research and extension project to improve farm resilience and profitability in Indiana and the Midwest. The team worked with farmers to develop usable climate-based decision support tools to help with planning, purchasing and marketing decisions on the farm. The online tools have assisted with decisions on over 15.5 million acres so far. The team won the 2017 Indiana Governor's Award for Environmental Excellence, which recognizes Indiana's leaders who have implemented outstanding environmental strategies to reduce waste, save money and contribute to Indiana's environmental protection efforts.
- Draining water from the landscape can improve growing conditions for crops. However, drainage infrastructure also creates a pathway for water and nutrients to leave the farm. Increasing water storage on the farm provides greater water availability for growing crops and reduces the amount of nutrients that leave the farm. The project "Managing Water for Increased Resiliency of Drained Agricultural Landscapes" assesses farm conditions and develops water storage practices and technologies. Led by Purdue's Dr. Jane Frankenberger, leading drainage researchers and extension specialists, modeling experts and social scientists strengthen the science and outreach related to water management in the Corn Belt.

