Agriculture and Food Research Initiative (AFRI)

The **Agriculture and Food Research Initiative (AFRI),** established in the Food, Conservation, and Energy Act of 2008, is **a competitive grants program authorized at $700 million annually, for research, extension, and education in support of our nation's food and agricultural systems.** This unique program takes research and innovation beyond the development phase, into implementation through contemporary education and extension programs.

About the Agriculture and Food Research Initiative

AFRI is the largest of several interrelated competitive grants programs administered by USDA's National Institute of Food and Agriculture (NIFA). AFRI supports research under its **foundational program** that builds knowledge critical for solving current and future challenges associated with:

- health and production and animal products
- safety, nutrition, and health
- energy, natural resources, and environment
- systems and technology
- economics and rural communities

In addition to work in the foundational areas, AFRI supports research, education, and extension in several **societal challenge areas**: food security; food safety; childhood obesity prevention; climate adaptation and mitigation; and bioenergy production. The program also provides opportunities via the **NIFA Fellows program** to outstanding pre- and post-doctoral students in the agricultural, food, and natural resource sciences.

The AFRI Coalition urges you to support AFRI funding at $350 million in FY 2012, half of the authorized level.

The return on investment of agricultural, food, nutrition, and natural resource research and development is $20 or more to the U.S. economy for every dollar spent.[1]

[1]Fuglie, Keith O., and Paul W. Heisey. Economic Returns to Public Agricultural Research. EB-10, U.S. Dept. of Agriculture, Economic Research Service. September 2007.

AFRI's Activities

1. **Fundamental Research:** discovers the underlying processes and functions that make systems work.
2. **Applied Research:** expands on basic research findings showing how they can be advanced to benefit individuals and society.
3. **Integrated Programs:** brings together three components of the agricultural knowledge system—research, education, and extension—around a problem area or activity.
4. **Extension:** communicates scientific research and related nutrition, health, and business knowledge to rural communities through adult education and other events.
5. **Education:** includes instruction about the science, business, and technology of agricultural production and the environment and natural resources it relies upon.

Competitive Research Accomplishments from the USDA
Renewing US Agriculture, Food Systems and Natural Resources

Past investments in USDA competitive research, education and extension have led to many advances in several critical issue areas, including:

Meeting global demand for food production: A team of scientists identified the genes that regulate temperature tolerance in wheat in order to identify frost-susceptible varieties. The identification of these optimum gene combinations has enabled breeders to develop hardier winter wheat, which is vital in light of growing pressure to increase global food production.

Revitalizing family farms and communities: Researchers from an 1890's Land Grant Institution explored the linkages between small farms and rural communities, reviewing the opportunities and constraints to rural development. Their study developed tools that will enable policy makers to assign reliable and realistic values to the non-market contribution of agriculture and small farms to a region's economy and rural community development.

Food security and nutrition: Social scientists found that a 2000-calorie diet consisting primarily of calorie-dense foods costs about $33 a day less than a diet consisting of low-calorie foods. Nutrition education programs that develop healthy meal plans for low income families can incorporate this information into their educational programs, helping to reduce exorbitant food costs.

Food safety and quality: *Campylobacter* bacteria are a major cause of diarrhea in humans and the most common bacterial cause of the stomach flu worldwide. Even in the absence of antibiotics, researchers have found that antibiotic-resistant strains of *Campylobacter* grow more successfully in the intestinal track of poultry than the non-resistant strain. Now researchers can determine how to prevent the transference of resistant strains of *Campylobacter* throughout the food supply.

Sustainable fuel production: Agricultural and biological engineers and other researchers have developed fast pyrolysis reactors for producing bio-oils from energy crops. With the use of this innovative technology, the cost of manufacturing biofuel is less and the product readily integrates into existing fuel systems. Furthermore, there is reduced waste with more complete conversion of biomass to fuel.