U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA)
Agriculture and Food Research Initiative (AFRI)
Plant Breeding, Genetics and Genomics Portfolio

NIFA-AFRI places a high priority on conventional and classical plant breeding, through AFRI's foundational program priority area **-** Plant Breeding for Agricultural Production – which has been offered since fiscal year (FY) 2013. Other AFRI programs such as the Food Security, Bioenergy and Climate challenge areas also offer programs that address breeding. Since 2013, AFRI has supported 55 projects totaling $24,426,481 for breeding research, training and conferences.
https://nifa.usda.gov/program/plant-breeding-genetics-genomics-programs

Primary Contact: Ed Kaleikau

Year	Projects	Funding
2013	20	$8,810,584
2014	14	$6,499,400
2015	21	$9,116,497
Total	55	$24,426,481

FY 2016: AFRI Plant Breeding funding opportunities focus on:

- Plant Breeding for Agricultural Production: Proposals due - July 28, 2016. Pre-breeding and germplasm enhancement, cultivar development, selection theory, applied quantitative genetics, and participatory breeding. *Includes **new opportunities** for two commodity board topics: (i) Kansas Wheat Commission - Breeding for genetic resistance to wheat viruses and; (ii) Iowa Corn Promotion Board - Environmental influence on phenomics in crop improvement and production.* https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-foundational-program
- Food Security: Proposals due – July 7, 2016. Breeding and phenomics of food crops to produce varieties with improved resilience to extreme weather and increased protection from disease and pests, enhanced nutritional composition for improved human health, and also training the next generation of plant breeders. *Includes **new opportunities** for (i) Research Coordination Networks and (ii) Kansas Wheat Commission commodity board topic on novel pre-breeding applications for quality enhancement in hard red winter wheat*. https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-food-security-challenge-area
- Food Security**: New activity** between NSF and NIFA for Early Concept Grants for Exploratory Research (EAGERs) to develop and enable breakthrough technologies for animal and plant phenomics and microbiomes. CLOSED. https://nifa.usda.gov/funding-opportunity/develop-and-enable-breakthrough-technologies-animal-and-plant-phenomics-and
- International Wheat Yield Partnership: CLOSED. **New activity** on breakthroughs for wheat breeding using new technologies and also discoveries that lead to significantly greater yield. https://nifa.usda.gov/funding-opportunity/nifa-international-wheat-yield-partnership-program-nifa-iwyp
- Sustainable bioenergy and bioeconomy: CLOSED. NIFA/DOE joint plant feedstock genomics for bioenergy program on breeding and development of feedstocks for bioenergy. http://genomicsgtl.energy.gov/research/DOEUSDA/
- Fellowships: CLOSED. Undergraduate, pre-doctoral, and post-doctoral programs to train the next generation of researchers, educators, and extension professionals in plant science. https://nifa.usda.gov/program/afri-education-and-literacy-initiative

Specialty Crop Research Initiative (SCRI)

SCRI was first authorized in the 2008 farm bill. Since inception, there have been five legislatively mandated focus areas. Focus area 1 deals with plant breeding, genetics and genomics.

''(1) research in plant breeding, genetics, and genomics to improve crop characteristics, such as—

''(A) product, taste, quality, and appearance;

''(B) environmental responses and tolerances;

''(C) nutrient management, including plant nutrient uptake efficiency;

''(D) pest and disease management, including resistance to pests and diseases resulting in reduced application management strategies; and

''(E) enhanced phytonutrient content;

The legislative focus areas were carried forward in the 2014 farm bill. The table below summarizes SCRI investment in focus area 1.

Year	Number	amount
2014	12	$9,799,800
2015	14	$15,508,868
2016	10	$14,915,743
Total	36	$40,224,411

Funded projects cover a wide variety of crops and crop families. All techniques for crop improvement are considered equally, including transgenic and cisgenic approaches.

Primary Contact: Thomas (Tom) Bewick

Organic Agriculture Research and Extension initiative (OREI)

The National Institute of Food and Agriculture's (NIFA) Agriculture Organic Agriculture Research and Extension initiative (OREI) puts a major priority on plant breeding. The goal of this priority is to "*strengthen organic crop seed systems, including seed and transplant production and protection, and plant breeding for organic production, with an emphasis on publically available releases*". Since 2009, OREI has supported 21 projects with a significant plant breeding component totaling $28,507,662.

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