



United States
Department of
Agriculture

National Institute
of Food
and Agriculture



FY 2015

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE
FY 2015 PRESIDENT'S BUDGET PROPOSAL

NIFA FY 2015 PRESIDENT'S BUDGET PROPOSAL

THE NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (NIFA) integrates research, education, and extension to ensure that groundbreaking discoveries in the food, agricultural, natural resource, and human sciences go beyond the laboratory and make their way into the classroom and to people who can put the knowledge into practice and improve their lives. **RESEARCH** enables discovery of knowledge to provide answers to complex problems of national and global importance. **EDUCATION** strengthens schools and universities to educate and train the next generation of scientists, educators, producers, and citizens, and prepare the workforce for a thriving economy. **EXTENSION** translates the knowledge gained through research and education into innovations that can provide solutions to problems people face.

NIFA works with the best and brightest scientists in the United States and around the world to find innovative solutions to local and global problems. Collaboration with historically black colleges and universities, Hispanic-serving institutions, tribal colleges, and other institutions across the Nation ensures the benefits of NIFA's resources extend to all Americans. With an integrated approach that includes collaboration with other federal science agencies, NIFA also serves as a vital contributor to science policy decision-making.

In Fiscal Year 2015, NIFA seeks to lead the food and agricultural sciences to create a better future for the nation and the world. NIFA will focus resources on supporting programs that provide foundational knowledge, as well as on programs that will create substantial impacts by addressing critical issues facing the long-term viability of agriculture. We will achieve this through program leadership to identify, develop, and manage programs to sponsor university-based and other institutional research, education, and extension; and through fair, effective, and efficient administration of Federal assistance awards and agreements.

THE AGENCY'S PRIMARY BUDGET INITIATIVES WILL EMPHASIZE:

- Targeted efforts that focus on solutions to high priority challenges including sustainable and diverse food production systems; water resource management for agriculture; adaptation of crop and livestock agriculture to climate variability; development of sustainable regional feedstock systems for bioenergy production and bio-based products; improved food safety and nutrition; and the reduction of childhood obesity;
- Continued support of foundational science, cross-cutting interagency initiatives, and education and training investments towards developing a diverse agricultural workforce;
- A new investment creating public-private partnership of Innovation Institutes focused on emerging challenges to agriculture;
- A new program to engage Veterans in the agricultural sector;
- A new program to support training and outreach activities in food safety to assist small producers, processors, and vendors; and
- Support for capacity building, minority-serving, and other programs.

FY2015 BUDGET HIGHLIGHTS

AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI)

Funding will support the following high priority issues:

FOOD SECURITY

Programs in this priority area will address pressing issues in food production that contribute to national and global food security while helping America promote sustainable agricultural production and biotechnology exports. Funding will support efforts to develop more sustainable, productive and economically viable plant and animal production systems. This investment will strengthen food security, production capacity and capabilities at all levels and will encourage diversification of agricultural systems. In addition, program activities will contribute to global food security through collaborations with the Feed the Future initiative, to local and regional marketing through Know Your Farmer, Know Your Food initiative, and to the U.S. Food Waste Challenge through the USDA Sustainable Development Council.

WATER FOR AGRICULTURE

Projects will focus on solutions for water management in topic areas that: result in tools available to farmers, livestock producers, and natural resource managers to mitigate the impact of extreme weather, droughts, and climate change on crops, forest, and livestock production systems; lead to solutions for U.S. water challenges related to the production of food, fiber, fuel and other agricultural goods and services; develop management practices, technologies, and tools for farmers, ranchers, forest owners and managers, public decision-makers, public and private managers and citizens to improve water resource quantity and quality; and link social, economic, and behavioral sciences with traditional biophysi-

cal sciences and engineering to address regional scale issues with shared hydrological processes, and meteorological and basin characteristics. Water for Agriculture will focus on understanding: the effects of climatic variability on water resources by improving drought responsiveness and preparedness; the future of supply and demand for water across the agricultural value chain, including the effects of applying nontraditional irrigation water; and societal impacts on water resources that affect water availability.

CLIMATE VARIABILITY AND CHANGE

Efforts will help farmers, ranchers, forest owners, and rural communities adapt to climate variation, reduce greenhouse gas emission, and improve long term sustainability through crop, animal, forestry, range, urban, and rural management strategies. Specifically, the program will support research on the effects of climate on microbes, pathogens, arthropods, weeds, and other pests which will provide process-level knowledge of the

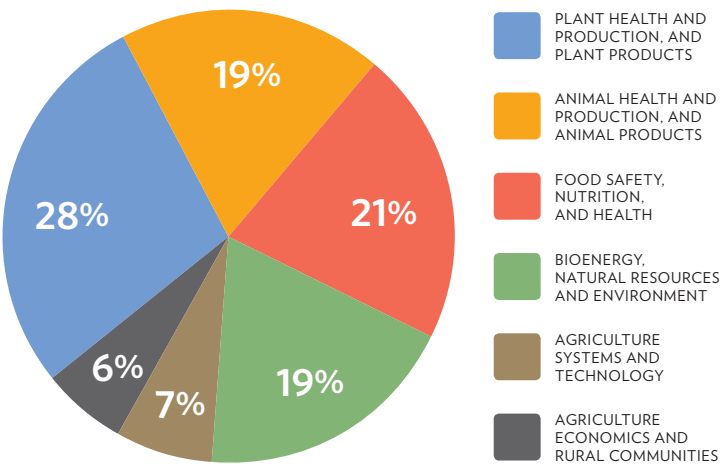
impact of climate on the environmental-microbial matrices and host-pest interactions in food, plants, animals, and aquatic and soil ecosystems. NIFA will continue to collaborate with the National Science Foundation and the Department of Energy on water sustainability and climate issues.

SUSTAINABLE BIOENERGY PRODUCTION

Funding will focus on the societal challenge to secure America's energy future with high relevance to the development of sustainable regional feedstock systems for the production of bioenergy and bio-based products. The program is designed to achieve the long-term outcome of reducing U.S. dependence on fossil fuels and meet the Energy Independence and Security Act. This will be accomplished through the production of sustainable bioenergy regional systems that materially deliver liquid transportation biofuels. In addition, NIFA will collaborate with the Department of Energy, Office of Science to explore feedstock genomics.

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FY 2015 AFRI INVESTMENTS BY FARM BILL PRIORITIES



FOOD SAFETY

Funds will be used to improve the safety of the U.S. food supply through minimizing antibiotic resistance transmission through the food chain, and microbial food safety hazards of fresh and fresh-cut fruits and vegetables. Funding will support work to advance investigator-driven integrated research to solve complex food safety challenges in plant and animal food systems; amplify applied research to advance education and outreach activities to food safety audiences; expand and improve mitigation strategies for reducing antimicrobial resistance, safety of fresh and fresh-cut fruits and vegetables, and processing technologies for enhancing food safety; and integrate nutrition and food safety efforts to create a healthier food supply. The program will continue to support ongoing projects focused on promoting safe handling and good agricultural practices.

CHILDHOOD OBESITY PREVENTION

Projects will focus on children and adolescents ages 2-19 in populations of greatest risk including populations eligible for USDA nutrition education and food assistance programs, Supplemental Nutrition Assistance Program and child nutrition programs. Base funding will continue to support

programs focused on access to healthy nutritious food, and food and physical activity environments in communities of greatest need. NIFA will collaborate with the National Institutes of Health in the area of childhood obesity prevention. Specifically, we will partner with the National Institute of Diabetes and Digestive and Kidney Diseases on food specific molecular profiles and dietary biomarkers of dietary consumption.

FOUNDATIONAL SCIENCE

Research investments will be made in Plant Health and Production and Plant Products; Animal Health and Production and Animal Products; Food Safety, Nutrition, and Health; Bioenergy, Natural Resources, and Environment; Agriculture Systems and Technology; Agriculture Economics and Rural Communities, and Critical Agricultural Research and Extension. Funding also will support Exploratory Research, a new program to fund projects that develop proof of concept of untested, “blue sky”, novel ideas, especially high risk-high reward work that lead to a significant change in U.S. agriculture. This research will support innovative ideas that lead to quantum leaps in the areas of food security, climate change, environmental quality and natural resources, nutrition, obesity, food safety, strong families and vibrant communities, and thriving youth.

The program priorities focus on new and emerging innovative ideas; application of new knowledge or approaches; tools required to have a paradigm shift in the field; and rapid response to critical issues and similar unanticipated events.

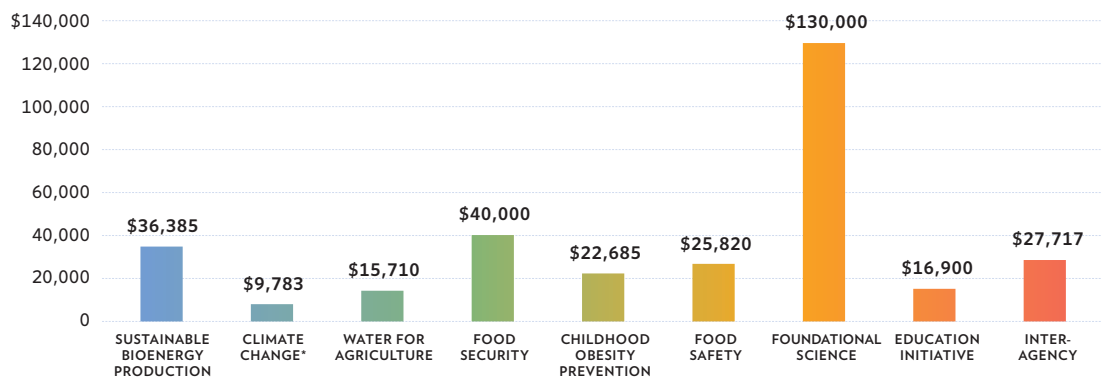
FOOD, AGRICULTURAL, NATURAL RESOURCES, AND HUMAN SCIENCES EDUCATION AND LITERACY INITIATIVE

Through this initiative, NIFA will continue its efforts to develop a diverse workforce that contributes to the national food and agricultural system. This will be accomplished through 1) promoting research and extension experiential learning for undergraduates such that upon graduation they may enter the agriculture workforce with exceptional skills; and 2) preparing the next generation of scientists through fellowships, including doctoral and post-doctoral fellowships.

PUBLIC-PRIVATE PARTNERSHIPS FOR INNOVATION INSTITUTES

In December 2012, the President’s Council of Advisors on Science and Technology (PCAST) reported that a new innovation ecosystem for agriculture is needed to leverage the best from the broad U.S. science and technology enterprise, and recommended the creation of six large, multidisciplinary innovation

FY 2015 AFRI FUNDING BY PROGRAM AREA (\$000)



* Work on climate resilience, adaptation, and mitigation also will be supported in other priority areas.

institutes focused on emerging challenges to agriculture. In line with this recommendation, NIFA proposes funding to establish in FY 2015 three new Institutes, with an investment of \$25 million for each Institute. Funds will support a competitive selection process that leverages public-private partnerships. The three Innovation Institutes will include: 1) Pollination and Pollinator Health for research on pollinator health, to combat pollinator decline and colony collapse disorder; 2) National Network for Manufacturing Innovation will focus on biomanufacturing and bioproduct development; and 3) Antimicrobial Resistance which will promote a systems approach from the farm and farm environment to the consumer, in order to address antimicrobial resistance.

FOOD AND AGRICULTURE RESILIENCY PROGRAM FOR MILITARY VETERANS (FARM VETS)

The program promotes competition for basic and applied research that explores career opportunities and pathways, therapeutic interventions, resource conservation, and related studies for the veteran population in the food and agriculture sector. Funds will be used for projects to inform the establishment and scalability of programming that helps veterans develop farming and ranching skills, business plans, and agriculture systems management.

FOOD SAFETY OUTREACH PROGRAM

NIFA in close collaboration with the Food and Drug Administration will establish a program to provide food safety training, education, extension, outreach and technical assistance to owners and operators of small farms, small food processors, and small fruit and vegetable vendors affected by the Food Safety Modernization Act (FSMA)

of 2011 (H.R. 2751). The outreach program will facilitate the integration of food safety standards and guidance in a variety of agricultural production systems, encompassing conventional, sustainable, organic, conservation and environmental practices. It will target small and medium-sized farms, beginning farmers, socially disadvantaged farmers, small processors, and/or small fresh fruit and vegetable merchant wholesalers.

HISPANIC SERVING AGRICULTURAL COLLEGES AND UNIVERSITIES (HSACU) ENDOWMENT FUND

The Hispanic/Latino community is the fastest growing sector of the American population. This investment will assist HSACUs compete effectively for NIFA competitive grants. Support for this endowment fund for HSACUs will help in the development of a skilled and marketable student population for employment in the food and agriculture sector.

OTHER PROGRAMS

NIFA will continue funding for most other programs, including formula funded and other minority-serving programs, in order to serve the nation's needs through exemplary research, education, and extension that address many challenges facing agriculture, the environment, and nutrition. From agricultural production, nutrition and food safety to energy independence and the sustainability of our natural resources, NIFA's investment in science helps to secure America's future. Proposed increases in Federal administration will support research activities for the information technology modernization of NIFA's grant applications systems and processes.

CONSOLIDATION OF STEM PROGRAMS

The budget includes a proposal to consolidate Science, Technology,

Engineering and Mathematics (STEM) programs as part of a government-wide initiative. Affected NIFA programs include the Research and Education Activities—Institution Challenge, Multicultural Scholars, and Graduate Fellowship Grants; and Secondary/2-year Post Secondary Education Program. Also consolidated is the Extension Activities—Women and Minorities in STEM Fields and Agriculture in the Classroom.

MANDATORY FUNDING

In FY 2015, funding for mandatory programs is included as authorized in the Agricultural Act of 2014 (2014 Farm Bill).

OPPORTUNITY, GROWTH, AND SECURITY INITIATIVE

Recognizing the importance of the two-year budget agreement Congress reached in December, the President's Budget adheres to the Bipartisan Budget Act of 2013 (BBA) discretionary funding levels for 2015, giving Congress a roadmap for how to write a budget at those levels that promotes growth and opportunity, enhances national security, and makes important reforms.

Within a separate Opportunity, Growth, and Security Initiative (OGSI), additional funds above the Budget level are allocated to support AFRI, Hatch Act, and Evans-Allen. Under the OGSI, AFRI will focus on climate resiliency related to agricultural production systems: climate change adaptation and mitigation, water resources and drought mitigation, and food security and sustainability. A new competitive portion of the Hatch Act capacity grant and the Evans-Allen capacity grant will fund nationally-awarded competitive research that are multi-state collaborations to support national and regional challenges pertaining to food security, water and climate change, nutrition, and obesity.

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (\$000)

PROGRAMS

FY 2014*
CONSOLIDATED
APPROPRIATIONS

FY 2015
PRESIDENT'S
BUDGET

DISCRETIONARY FUNDING

RESEARCH AND EDUCATION ACTIVITIES

Agriculture and Food Research Initiative	\$316,409	\$325,000
FORMULA PROGRAMS		
Hatch Act	243,701	243,701
McIntire-Stennis Cooperative Forestry	33,961	33,961
Evans-Allen Program	52,485	52,485
Animal Health and Disease, Section 1433	4,000	0
SPECIAL RESEARCH GRANTS		
Minor Crop Pest Management, IR-4	11,913	11,913
Global Change, UV-B Monitoring	1,405	1,405
Potato Research	1,350	0
Aquaculture Research	1,350	0
OTHER RESEARCH		
Critical Agricultural Materials	1,081	0
Aquaculture Centers	4,000	4,000
Sustainable Agriculture Research and Education Program	22,667	22,667
Supplemental and Alternative Crops	825	0
1994 Research Grants	1,801	1,801
Federal Administration (Direct Appropriation)	14,133	21,536
Farm Business Management and Benchmarking Program	1,450	0
Sun Grant Program	2,500	0
Capacity Building for Non-Land Grant Colleges of Agriculture	4,500	0
Alfalfa and Forage Research	1,350	0
Public-Private Partnerships for Innovation Institutes	0	75,000
Food and Agriculture Resiliency Program for Military Veterans	0	2,500
HIGHER EDUCATION		
Institution Challenge, Multicultural Scholars and Graduate Fellowship Grants a/	9,000	0
1890 Institution Capacity Building Grants	19,336	19,336
Hispanic Serving Institutions Education Grants Program	9,219	9,219
Tribal Colleges Education Equity Grants Program	3,439	3,439
Interest (Estimated) Earned on Tribal Colleges Endowment Fund	5,085	5,026
Secondary Education/2-Year Post Secondary a/	900	0
Alaska Native-serving and Native Hawaiian-Serving Institutions	3,194	3,194
Veterinary Medical Services Act	4,790	4,790
Grants for Insular Areas		1,800
TOTAL, RESEARCH AND EDUCATION ACTIVITIES b/	777,644	842,773

INTEGRATED ACTIVITIES

SECTION 406 LEGISLATIVE AUTHORITY

Water Quality	4,500	0
Methyl Bromide Transition Program	1,996	0
Organic Transition Program	4,000	4,000
Crop Protection/Pest Management	17,143	17,143

OTHER LEGISLATIVE AUTHORITIES

Regional Rural Development Centers	998	998
Food and Agriculture Defense Initiative	6,680	6,680
TOTAL, INTEGRATED ACTIVITIES	35,317	28,821

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (\$000)

PROGRAMS

FY 2014*
CONSOLIDATED
APPROPRIATIONS

FY 2015
PRESIDENT'S
BUDGET

EXTENSION ACTIVITIES

FORMULA PROGRAMS

Smith-Lever Formula 3(b)&(c)	\$300,000	\$300,000
1890 Institutions	43,920	43,920

SMITH-LEVER 3(d) PROGRAMS

Expanded Food and Nutrition Education Program	67,934	67,934
Farm Safety and Youth Farm Safety Education and Certification	4,610	4,610
New Technologies for Agricultural Extension	1,550	1,750
Children, Youth, and Families at Risk	8,395	8,395
Federally-Recognized Tribes Extension Program	3,039	3,039

OTHER EXTENSION PROGRAMS

Extension Services at 1994 Institutions	4,446	4,446
Renewable Resources Extension Act	4,060	4,060
Rural Health and Safety	1,500	0
1890 Facilities (Section 1447)	19,730	19,730
Food Animal Residue Avoidance Database Program (FARAD)	1,250	0
Women and Minorities in Science, Technology, Engineering and Mathematics (STEM) Fields a/	400	0
Food Safety Outreach Program	0	2,500
Federal Administration c/	8,357	8,584

TOTAL, EXTENSION ACTIVITIES

469,191 468,968

TOTAL, DISCRETIONARY FUNDING b/

1,282,152 1,340,562

MANDATORY FUNDING

MANDATORY AND ENDOWMENT FUNDING

Hispanic-Serving Agriculture Colleges and Universities Endowment Fund	\$0	\$10,000
Tribal Colleges Endowment Fund	11,880	11,880
Organic Agriculture Research and Extension Initiative	20,000	20,000
Beginning Farmers and Ranchers Program	20,000	20,000
Biomass Research and Development Initiative (BRDI)	3,000	3,000
Specialty Crop Research Initiative	80,000	80,000
Biodiesel Fuel Education Program d/	1,000	1,000
Agriculture Risk Management Education Program d/	5,000	5,000
Community Food Projects Competitive Grants Program d/	5,000	9,000

TOTAL, MANDATORY AND ENDOWMENT ACTIVITIES

145,880 159,880

TOTAL, DISCRETIONARY AND MANDATORY FUNDING

\$1,428,032 \$1,500,442

OPPORTUNITY, GROWTH, AND SECURITY INITIATIVE (OGSI)

Agriculture and Food Research Initiative	\$0	\$60,000
Competitive Hatch Act	0	15,000
Competitive Evans-Allen	0	5,000

TOTAL, NIFA OGSI

\$0 \$80,000

NOTES:

- * Based on the enacted amounts in the FY 2014 Consolidated Appropriations Act, 2014.
- a/ In FY 2015, program is part of a government-wide initiative to consolidate STEM programs.
- b/ Estimated interest on Tribal College Endowment Fund is included in the total.
- c/ In FY 2015, Agriculture in the Classroom is part of a government-wide initiative to consolidate STEM programs.
- d/ Mandatory program delegated to another USDA agency but administered by NIFA.

