



United States  
Department of  
Agriculture

National Institute  
of Food  
and Agriculture



# FY 2016

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE  
FY 2016 PRESIDENT'S BUDGET PROPOSAL

# NIFA FY 2016 PRESIDENT'S BUDGET PROPOSAL

**T**HE NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (NIFA) invests in and advances agricultural research, education, and extension to solve societal challenges. Our vision is to catalyze transformative discoveries, education, and engagement to address agricultural challenges. We accomplish this by integrating 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 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 to 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 supports the best and brightest scientists and extension personnel to find innovative solutions to local and global problems. Through its work with 1862 and 1890 land-grant universities, Hispanic-serving institutions, 1994 land-grant colleges, and other institutions across the nation, NIFA ensures diverse audiences are supported. 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 (FY) 2016, NIFA seeks resources to develop a comprehensive approach to addressing the agriculture-health nexus, ensuring the health and well-being of our nation by supporting cutting-edge research, education, and extension initiatives that advance sustainable agricultural production systems and provide for an abundant and quality food supply. Agriculture affects all facets of health—human, animal, plant, environmental, and economic—either directly or indirectly. Significant impacts related to agricultural production, climate variability, nutrition and childhood obesity, plant and animal health,

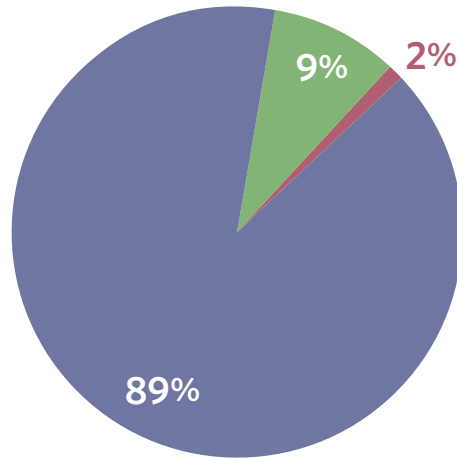
food safety, and natural resources and the environment are in need of new, multidisciplinary approaches and innovative solutions made possible through targeted and sound investments. Our expectation is that the proposed initiatives in the request also will enhance the renewable agricultural and forestry enterprises that underpin the bioeconomy and support resiliency of rural communities, create jobs, and promote economic well-being.

## **NIFA'S 2016 BUDGET INITIATIVES INCLUDE:**

- Significant increases in investments for the Agriculture and Food Research Initiative (AFRI) science priorities that focus on solutions to high-priority challenges in agriculture and health, including new approaches for ensuring food security; solutions for water management, tactics for adapting to and mitigating impacts of climate variability and change, strategies for improving nutrition and health, promoting foundational science, and strengthening education and literacy;
- Significant increase in Foundational programs;

- A new competitive Capacity awards program for 1862 and 1890 institutions to address critical food and agricultural challenges at regional and national scales;
- A new investment to create public-private partnerships through Innovation Institutes that focus on the bioeconomy;
- A new program to engage and support veterans in the agricultural sector;
- Increased support for training and outreach activities in food safety to assist small producers, processors, and vendors; and
- Increased support to enhance minority-serving institutions and youth-serving organizations.

### TOTAL FY 2016 DISCRETIONARY, MANDATORY, AND ENDOWMENT FUNDING



**DISCRETIONARY FUNDING: \$1,507,663,000**

**MANDATORY FUNDING: \$158,000,000**

**ENDOWMENT FUNDING: \$21,880,000**

## FY2016 BUDGET HIGHLIGHTS

### AGRICULTURE AND FOOD RESEARCH INITIATIVE (AFRI)

Funding in the amount of \$450 million will support high-priority issues:

#### AGRICULTURE AND HEALTH INITIATIVES

Funding will support new agriculture and health initiatives in the areas of pollinator health, antimicrobial resistance, and feedstocks for biobased products. As part of the President's government-wide pollinator health initiative and in response to a number of studies and calls for action, NIFA will establish a **Pollinator Health Initiative** under the **Food Security Challenge Area and Foundational Program**. The initiative will support projects to address biological, environmental, and management factors that contribute to the wide-scale decline of honey bees and other pollinators. NIFA will promote problem-solving partnerships between commodity groups

that depend on bees and other pollinators to pollinate their crops, pollination service providers, honey producers, and public and private sector researchers. The **Antimicrobial Resistance Initiative** under the **Food Safety Challenge Area and Foundational Program** will support the development, refinement, and dissemination of science-based knowledge about animal health management and production practices that can eliminate the threat and risk of antimicrobial resistance, as articulated in the President's Executive Order on combating antibiotic resistant bacteria. This initiative will promote the development of sustainable and integrated food safety systems and result in the reduction of public health risks along the entire food chain, from primary producer to consumer. In the **Bioenergy Challenge Area**, the **Feedstocks for Biobased Products Initiative** is designed to support the production of sustainable

bioenergy and to advance a sustainable bioeconomy through agricultural systems that provide high-quality feedstocks for biobased products. Funding will support the development and sustainable production of regionally appropriate biomass feedstocks for the production of non-food biobased products, chemical intermediates, or alternative jet fuel. In addition, funds will support analysis of related federal and state economic, environmental, and other policies, and evaluate their impacts on the feedstock supply chain. The initiative also will include focused educational and extension activities to provide the emerging bioeconomy with a workforce that is skilled and experienced in a multidisciplinary and problem-solving framework, knowledgeable of the bioeconomy value chain, and trained in a wide range of technical, educational, socio-economic, and scientific competencies.

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## NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (\$'000)

**PROGRAMS**

**FY 2015  
CONSOLIDATED  
APPROPRIATIONS**      **FY 2016  
PRESIDENT'S  
BUDGET**

**DISCRETIONARY FUNDING**

Agriculture and Food Research Initiative	\$325,000	\$450,000
<b>CAPACITY PROGRAMS:</b>		
Hatch Act	243,701	256,201
Formula Grants	(243,701)	(243,701)
Competitive Capacity Awards Program	(0)	(12,500)
McIntire-Stennis Cooperative Forestry	33,961	33,961
Evans-Allen Program	52,485	60,500
Formula Grants	(52,485)	(58,000)
Competitive Capacity Awards Program	(0)	(2,500)
Animal Health and Disease, Section 1433	4,000	0
<b>SPECIAL RESEARCH GRANTS:</b>		
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
<b>OTHER RESEARCH:</b>		
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	1,914
Federal Administration (Direct Appropriation) a/	20,528	30,255
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	80,000
Food and Agriculture Resiliency Program for Military Veterans	0	2,500
<b>HIGHER EDUCATION:</b>		
Institution Challenge, Multicultural Scholars and Graduate Fellowship Grants b/	9,000	0
1890 Institution Capacity Building Grants	19,336	20,410
Hispanic-Serving Institutions Education Grants Program	9,219	9,219
Tribal Colleges Education Equity Grants Program	3,439	3,654
Interest (Estimated) Earned on Tribal Colleges Endowment Fund	5,079	4,605
Secondary Education/2-Year Post Secondary b/	900	0
Alaska Native-Serving and Native Hawaiian-Serving Institutions	3,194	3,194
Veterinary Medical Services Act	5,000	5,000
Grants for Insular Areas	2,000	1,800
<b>Subtotal c/</b>	<b>791,953</b>	<b>1,003,198</b>
<b>SECTION 406 LEGISLATIVE AUTHORITY:</b>		
Methyl Bromide Transition Program	2,000	0
Organic Transition Program	4,000	4,000
Crop Protection/Pest Management	17,200	17,200
<b>OTHER LEGISLATIVE AUTHORITIES:</b>		
Regional Rural Development Centers	1,000	1,000
Food and Agriculture Defense Initiative	6,700	6,700
<b>Subtotal</b>	<b>30,900</b>	<b>28,900</b>

## NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (\$'000)

### PROGRAMS

**FY 2015  
CONSOLIDATED  
APPROPRIATIONS**
                 
 **FY 2016  
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#### CAPACITY PROGRAMS:

Smith-Lever Formula 3(b)&(c)	\$300,000	\$304,000
Formula Grants	(300,000)	(300,000)
Competitive Capacity Awards Program	(0)	(4,000)
1890 Institutions Extension	43,920	49,350
Formula Grants	(43,920)	(48,350)
Competitive Capacity Awards Program	(0)	(1,000)

#### 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:

Grants for Youth-Serving Institutions	0	1,000
Extension Services at 1994 Institutions	4,446	4,724
Renewable Resources Extension Act	4,060	4,060
Rural Health and Safety	1,500	0
1890 Facilities (Section 1447)	19,730	21,703
Food Animal Residue Avoidance Database Program (FARAD)	1,250	0
Women and Minorities in Science, Technology, Engineering and Mathematics (STEM) Fields b/	400	0
Food Safety Outreach Program	2,500	5,000
Federal Administration d/	8,357	a/
<b>Subtotal</b>	<b>471,691</b>	<b>475,565</b>

### TOTAL, DISCRETIONARY FUNDING c/

**1,294,544    1,507,663**

### 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	18,540	20,000
Beginning Farmers and Ranchers Development Program	18,540	20,000
Biomass Research and Development Initiative (BRDI)	2,781	3,000
Specialty Crop Research Initiative	50,985	55,000
Emergency Citrus Research and Extension Program	23,175	25,000
Food Insecurity Nutrition Incentive Program	0	20,000
Biodiesel Fuel Education Program e/	927	1,000
Agriculture Risk Management Education Program e/	4,635	5,000
Community Food Projects Competitive Grants Program e/	9,000	9,000
<b>TOTAL, MANDATORY AND ENDOWMENT FUNDING f/</b>	<b>140,463</b>	<b>179,880</b>

### TOTAL, DISCRETIONARY AND MANDATORY FUNDING c/ f/

**1,435,007    1,687,543**

**NOTES:**

- a/ In FY 2016, Federal Administration costs are consolidated on one funding line.
- b/ In FY 2016, program is part of a government-wide initiative to consolidate STEM programs.
- c/ Estimated interest on Tribal College Endowment Fund is included in the total.
- d/ In FY 2015 appropriations, \$552,000 is provided within the total for Agriculture in the Classroom (AIRC).  
In FY 2016 President's Budget, AIRC is part of a government-wide initiative to consolidate STEM programs.
- e/ Mandatory program delegated to another USDA agency but administered by NIFA.
- f/ Farm Bill funding amounts are based on H.R. 2642, the Agricultural Act of 2014 and include impact of sequestration of mandatory funds in FY 2015.

### IMPACTS OF CLIMATE VARIABILITY AND CHANGE

To implement the President's Climate Action Plan, NIFA will support research, extension, and education projects to enhance food security, economic viability, and ecosystem goods and services and create resilient and sustained agroecosystems that may be impacted by climate disruptions. These projects will optimize on-farm adaptive capacities and carbon sequestration to ensure public, plant, animal, environmental, and economic health. NIFA's climate priority will focus on **Climate and Land Use** to understand the patterns, processes, and consequences of changes in land use, land condition, and land cover at multiple spatial and temporal scales. Additional focus will be on interactions between climate variability, human activities, and the landscape mosaic comprising natural and production systems. NIFA's **Water for Agriculture** program will focus on supporting the development of solutions for water management that could potentially impact public health, food, climate, energy, and the environment. This program will address critical water resources issues such as drought, excess soil moisture, flooding, availability, and quality in an agricultural context.

### IMPROVING NUTRITION AND HEALTH

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. The program will investigate the relationship between food consumption behaviors and various health outcomes, including those related to obesity and the development of chronic diseases. Base funding will continue to support programs that focus on access to healthy nutritious food, and food and physical activity environments in communities of greatest need.

### FOUNDATIONAL SCIENCE

Research investments will support the discovery of foundational knowledge 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; and agriculture economics and rural communities. Additional funds will support the Critical Agricultural Research and Extension program, which aims to help develop tools and

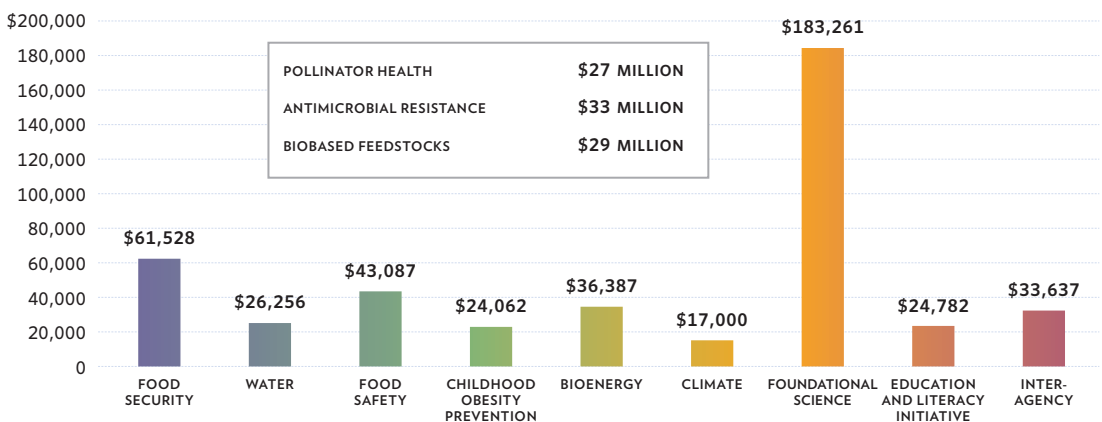
technologies that producers can deploy in their production systems. Funding also will support the Exploratory Research Grants program to fund projects that develop proof of concept for untested, innovative ideas, especially high risk-high reward work that will lead to significant improvements in U.S. agriculture.

### STRENGTHENING 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 within the food, agricultural, natural resources, and human sciences by:

- Developing pathways to identify and replicate best practices that engage youth in science, technology, engineering, and mathematics fields;
- Enhancing the capacity of institutions to produce graduates with the skills to address challenges in the food and agricultural systems; and
- Advancing science by supporting graduate and post-graduate education.

## FY 2016 AFRI FUNDING OF \$450 MILLION BY PROGRAM AREA (\$000)



## COMPETITIVE CAPACITY AWARDS PROGRAM

In 2016, the budget proposes a new program that will complement existing Capacity and Competitive programs by addressing national and regional problems in food, agriculture, natural resources, nutrition, human sciences, and animal health through investments in areas such as plant and animal breeding, improved management of crop and livestock production, water, improved nutrition—particularly in underrepresented populations—and food safety. This competitive program, which requires a 100 percent match through non-federal sources, will enhance workforce development needs; advance organizational learning through networks of people, communities, and institutions that generate, share, and maintain knowledge; and improve tactical science research capacity for addressing critical food and agricultural challenges at regional and national scales. As a part of the Presidential initiative and consistent with USDA’s action plan on pollinator health, NIFA will dedicate \$1.5 million of available funds to infrastructure needs related to pollinator health. A total

of \$20 million will support this competitive program. Funds will be allocated through Hatch Act (\$12.5 million), Smith-Lever 3(b)&(c) (\$4 million), Evans-Allen Act (\$2.5 million), and 1890 Extension (\$1 million).

## PUBLIC-PRIVATE PARTNERSHIPS FOR INNOVATION INSTITUTES

The President’s Council of Advisors on Science and Technology (PCAST) reported in 2012 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 institutes that focus on emerging challenges to agriculture. In line with this recommendation, NIFA proposes funding to establish two new institutes that focus on the bioeconomy. One institute will address innovations in biomanufacturing and the second institute will address innovations in products and processes using nanocellulosics. The requested funds will be deployed using a competitive selection process that leverages public-private partnerships.

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

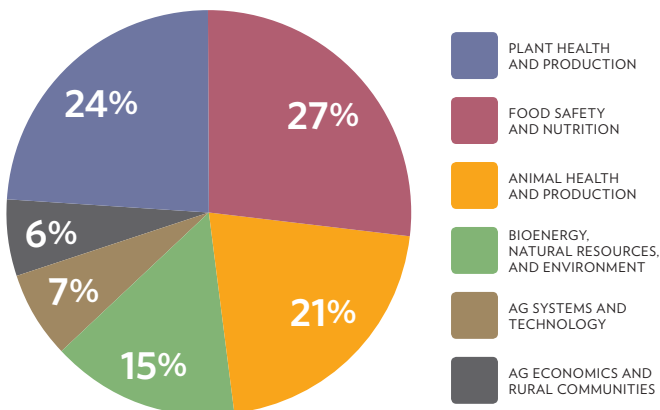
The FARM-Vets program will deploy competitive funding for basic and applied research to explore career opportunities and pathways, therapeutic interventions, resource conservation, and related studies to support attracting veterans into the food and agriculture sector. Projects will use funds to inform the establishment and scalability of programming that helps veterans develop farming and ranching skills, business plans, and agriculture systems management.

## FOOD SAFETY OUTREACH PROGRAM

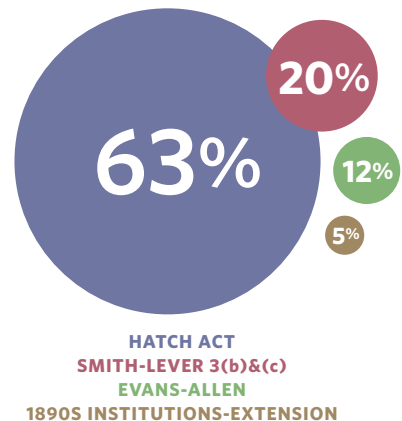
This program will help owners and operators of small to mid-sized farms, producers, and processors learn about and implement food safety guidelines, particularly those resulting from the Food Safety Modernization Act (FSMA). This program was initiated in FY 2014 with \$2.5 million in funding from the Food and Drug Administration (FDA) to support projects for education and outreach with a goal of

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## FY 2016 AFRI INVESTMENTS BY FARM BILL PRIORITIES



## COMPETITIVE CAPACITY AWARDS PROGRAM



including a more robust technical assistance component in future years. In FY 2015, NIFA received \$2.5 million for food safety outreach activities to complement the FDA FSMA initiative. In FY 2016, NIFA will be the sole agency supporting the education needs required as part of the FSMA regulation. The proposed \$5 million will emphasize outreach to all farmers and will focus on sustainability, conservation, and environmental practices. Grants will be awarded on a competitive basis to support improvements in the understanding and adoption of established food safety standards, guidance, and protocols.

### MINORITY SERVING INSTITUTIONS

The 2016 budget proposes increases in Evans-Allen, 1890 Capacity Building Grants, 1890 Extension, and 1890 Facilities programs to accommodate the inclusion of Central State University in Ohio as the 19th 1890 land-grant university.

NIFA also requests increases in the 1994 Research, Tribal Colleges Education Equity, and Extension Services at 1994 Institutions programs to accommodate the addition of two new 1994 land-grant colleges: College of the Muscogee Nation in Oklahoma and Keweenaw Bay Ojibwa Community College in Wisconsin. Funds will assist these institutions in developing new partnerships, building research and extension capacity, and serving a larger American Indian student population.

### GRANTS FOR YOUTH SERVING INSTITUTIONS

The budget includes a request to provide funding for Grants for Youth-Serving Institutions, which will support pilot-demonstration

projects for youth-serving organizations in rural communities. This program is deemed a priority at the local and/or state levels for social capital and community development efforts.

### 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 help HSACUs develop capacity to compete effectively for NIFA competitive grants. Support for this endowment fund for HSACUs will help in the critical development of a skilled and marketable student population for employment in the food and agriculture sector.

### OTHER PROGRAMS

NIFA will continue funding other programs at the same level as in FY 2015 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 secure America's future. The FY 2016 budget proposes consolidation of federal administration lines along with an increase in requested funds to support 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 Institution Challenge, Multicultural Scholars, and Graduate Fellowship Grants; Secondary/2-year Post-Secondary Education Program; Women and Minorities in STEM Fields; and Agriculture in the Classroom.

### MANDATORY FUNDING

In FY 2016, funding for mandatory programs is included as authorized in the Agricultural Act of 2014 (2014 Farm Bill).

### MANAGEMENT INITIATIVE

NIFA's Strategic Plan highlights the importance of business processes and communication goals in supporting its goals and management initiatives. The budget also includes a proposal to eliminate the old account structure from NIFA's predecessor agencies and create a single, unified account to house all NIFA programs. Since NIFA's establishment in 2010, the agency has worked to integrate research, education, and extension activities across its programs and organizational structures. In recent years, NIFA has been consolidating the funding lines for some programs (Sustainable Agriculture Research and Education, Crop Protection/Pest Management, Grants for Insular Areas) and has received support for simplification in appropriations. Merging all funding lines within a single account structure will mirror the reorganization of the agency as a national institute with a unified mission and provide opportunities to streamline the administration of funds. The merger will not impact the function or funding level of any program, but will help simplify the management of funds within the financial systems. ■