

DEPARTMENT OF HEALTH AND HUMAN SERVICES

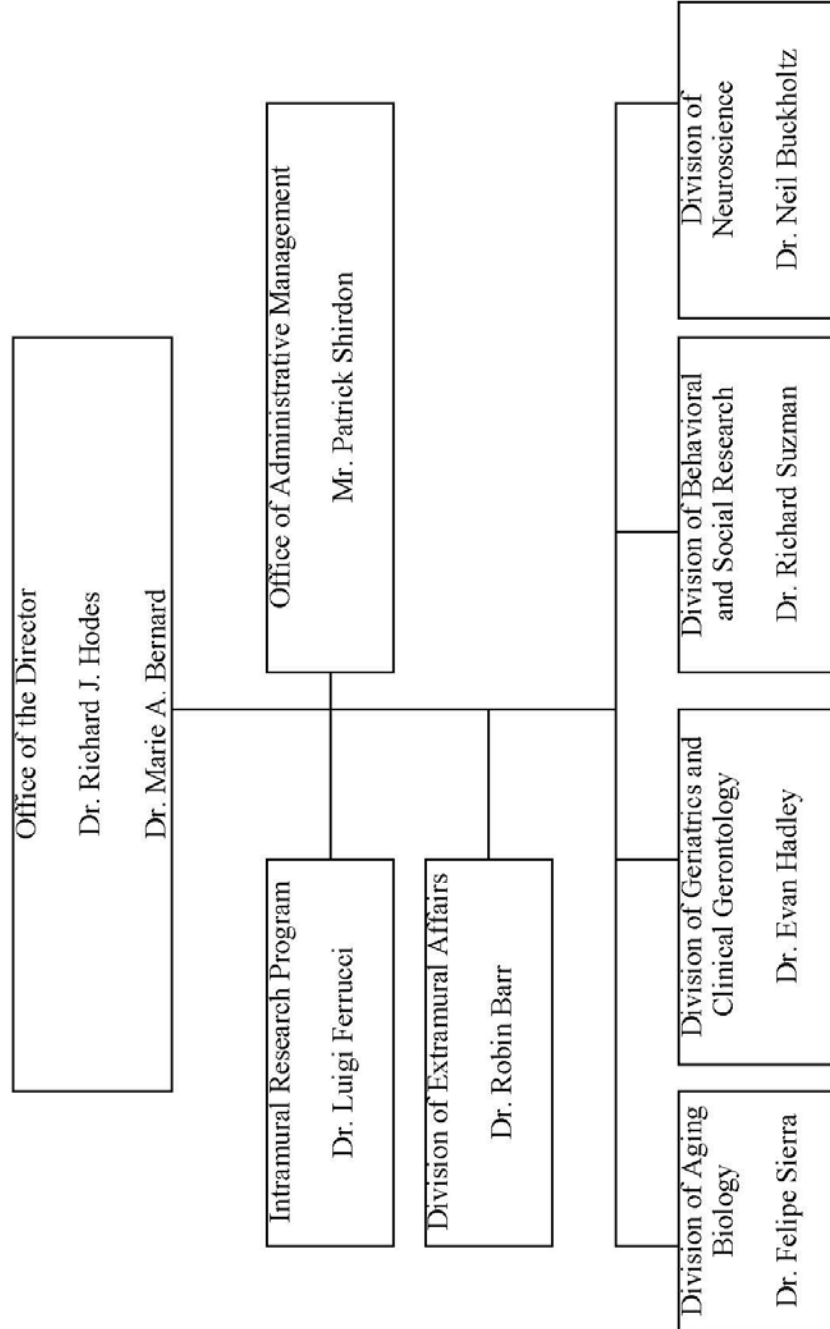
NATIONAL INSTITUTES OF HEALTH

National Institute on Aging (NIA)

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NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Organizational Structure



NATIONAL INSTITUTES OF HEALTH

National Institute on Aging

For carrying out section 301 and title IV of the PHS Act with respect to aging,
[~~\$1,199,468,000~~] *\$1,267,078,000*.

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Amounts Available for Obligation¹

(Dollars in Thousands)

Source of Funding	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Appropriation	\$1,171,038	\$1,199,468	\$1,267,078
Type 1 Diabetes	0	0	0
Rescission	0	0	0
Sequestration	0	0	0
FY 2014 First Secretary's Transfer	-2,940	0	0
FY 2014 Second Secretary's Transfer	-230	0	0
Subtotal, adjusted appropriation	\$1,167,868	\$1,199,468	\$1,267,078
OAR HIV/AIDS Transfers	0	-1,945	0
National Children's Study Transfers	3,849	0	0
Subtotal, adjusted budget authority	\$1,171,717	\$1,197,523	\$1,267,078
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	\$1,171,717	\$1,197,523	\$1,267,078
Unobligated balance lapsing	-61	0	0
Total obligations	\$1,171,656	\$1,197,523	\$1,267,078

¹ Excludes the following amounts for reimbursable activities carried out by this account:

FY 2014 - \$7,279 FY 2015 - \$7,279 FY 2016 - \$7,279

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging
Budget Mechanism - Total¹

(Dollars in Thousands)

MECHANISM	FY 2014 Actual		FY 2015 Enacted		FY 2016 President's Budget		FY 2016 +/- FY 2015	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
<u>Research Projects:</u>								
Noncompeting	958	\$492,292	958	\$496,721	1,040	\$539,411	82	\$42,690
Administrative Supplements	(106)	10,438	(107)	10,500	(107)	10,500	(0)	0
Competing:								
Renewal	67	103,361	74	114,816	72	111,401	-2	-3,415
New	313	155,581	302	150,324	327	162,442	25	12,118
Supplements	5	1,932	4	1,724	4	1,724	0	0
Subtotal, Competing	385	\$260,875	380	\$266,864	403	\$275,567	23	\$8,703
Subtotal, RPGs	1,343	\$763,605	1,338	\$774,085	1,443	\$825,478	105	\$51,393
SBIR/STTR	80	32,084	86	34,650	95	38,071	9	3,421
Research Project Grants	1,423	\$795,689	1,424	\$808,735	1,538	\$863,549	114	\$54,814
<u>Research Centers:</u>								
Specialized/Comprehensive	78	\$90,653	84	\$97,098	88	\$102,050	4	\$4,952
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative Medicine	0	1,146	0	1,146	0	1,146	0	0
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	78	\$91,799	84	\$98,244	88	\$103,196	4	\$4,952
<u>Other Research:</u>								
Research Careers	199	\$27,355	203	\$27,960	203	\$27,960	0	\$0
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	0	0	0	0	0	0	0	0
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	0	0	0	0	0	0	0
Other	52	12,157	53	12,418	53	12,418	0	0
Other Research	251	\$39,512	256	\$40,378	256	\$40,378	0	\$0
Total Research Grants	1,752	\$927,001	1,764	\$947,357	1,882	\$1,007,123	118	\$59,766
<u>Awards:</u>	<u>FTIPs</u>		<u>FTIPs</u>		<u>FTIPs</u>		<u>FTIPs</u>	
Individual Awards	150	\$6,430	150	\$6,924	148	\$6,924	-2	\$0
Institutional Awards	388	17,176	388	18,226	384	18,226	-4	0
Total Research Training	538	\$23,606	538	\$25,150	532	\$25,150	-6	\$0
Research & Develop. Contracts (SBIR/STTR) (non-add)	81 (4)	\$59,113 (349)	78 (4)	\$57,200 (360)	78 (4)	\$65,311 (360)	0 (0)	\$8,111 (0)
Intramural Research	235	118,794	235	123,316	235	124,549	0	1,233
Res. Management & Support	157	43,203	159	44,500	159	44,945	0	445
Res. Management & Support (SBIR Admin) (non-add)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, NIA	392	\$1,171,717	394	\$1,197,523	394	\$1,267,078	0	\$69,555

¹ All items in italics and brackets are non-add entries.

Major Changes in the Fiscal Year 2016 President's Budget Request

Major changes by budget mechanism and/or budget activity detail are briefly described below. Note that there may be overlap between budget mechanisms and activity detail and these highlights will not sum to the total change for the FY 2016 President's Budget for NIA, which is \$69.555 million more than the FY 2015 Enacted Level, for a total of \$1,267.078 million.

Research Project Grants (+\$54.814 million; total \$863.549 million):

NIA will award a total of 1,538 RPGs, an increase of 114 from the FY 2015 Enacted Level. This includes a \$50.0 million increase for Alzheimer's disease (AD) research. The increase also includes \$12.118 million for new and competing RPGs.

Research Centers (+\$4.952 million; total \$103.196 million):

Precision Medicine. NIH proposes to launch a national research cohort of one million or more Americans – to propel our understanding of health and disease and set the foundation for a new way of doing research through engaged participants and open, responsible data sharing. Participants who voluntarily choose to join this effort will be able to share their genomic data, biological specimens, and behavioral data, and, if they choose, link it to their electronic health records (EHRs), taking advantage of the latest in social media and mobile applications, and with appropriate privacy protections in place. Bona fide researchers from across the country will have access to data voluntarily provided, thereby crowdsourcing rich data to the brightest minds in biomedical research. The cohort will be built largely by linking existing cohorts together taking advantage of infrastructure, data security and expertise already in place. NIH will help to connect these existing cohorts, but the current sponsors of the cohorts will maintain their ownership and management. Research on this scale promises to lead to new prevention strategies, novel therapeutics and medical devices, and improvements in how we prescribe drugs – on an *individual* and *personalized* basis. NIA estimates \$4.2 million for precision medicine in FY 2016.

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Summary of Changes

(Dollars in Thousands)

FY 2015 Enacted				\$1,197,523
FY 2016 President's Budget				\$1,267,078
Net change				\$69,555
CHANGES	FY 2016 President's Budget		Change from FY 2015	
	FTEs	Budget Authority	FTEs	Budget Authority
<u>A. Built-in:</u>				
<u>1. Intramural Research:</u>				
a. Annualization of January 2015 pay increase & benefits		\$44,000		\$57
b. January FY 2016 pay increase & benefits		44,000		588
c. One more day of pay (n/a for 2015)		44,000		138
d. Differences attributable to change in FTE		44,000		0
e. Payment for centrally furnished services		10,767		12
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		69,782		0
Subtotal				\$795
<u>2. Research Management and Support:</u>				
a. Annualization of January 2015 pay increase & benefits		\$24,569		\$15
b. January FY 2016 pay increase & benefits		24,569		327
c. One more day of pay (n/a for 2015)		24,569		94
d. Differences attributable to change in FTE		24,569		0
e. Payment for centrally furnished services		4,044		0
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		16,332		0
Subtotal				\$436
Subtotal, Built-in				\$1,231

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

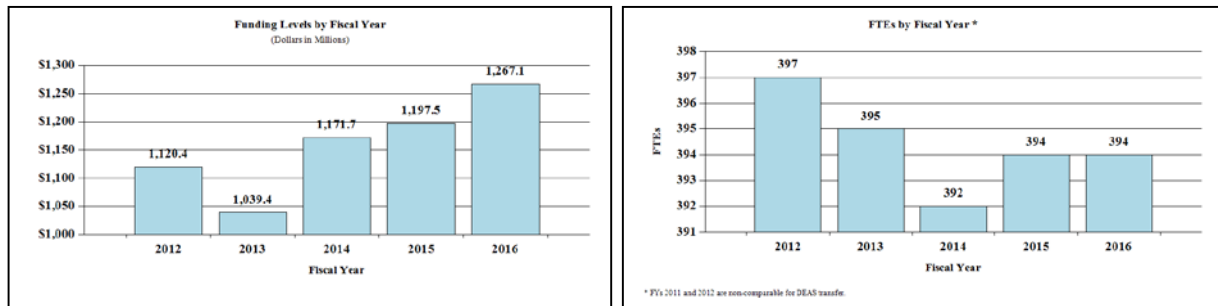
Summary of Changes - Continued

(Dollars in Thousands)

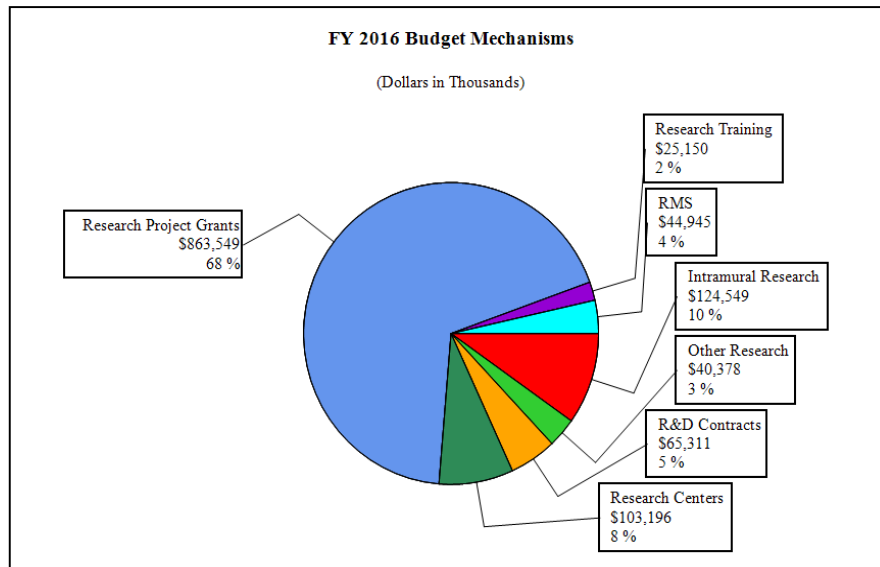
CHANGES	FY 2016 President's Budget		Change from FY 2015	
	No.	Amount	No.	Amount
<u>B. Program:</u>				
<u>1. Research Project Grants:</u>				
a. Noncompeting	1,040	\$549,911	82	\$42,690
b. Competing	403	275,567	23	8,703
c. SBIR/STTR	95	38,071	9	3,421
Subtotal, RPGs	1,538	\$863,549	114	\$54,814
2. Research Centers	88	\$103,196	4	\$4,952
3. Other Research	256	40,378	0	0
4. Research Training	532	25,150	-6	0
5. Research and development contracts	78	65,311	0	8,111
Subtotal, Extramural		\$1,097,584		\$67,877
	<u>FTEs</u>		<u>FTEs</u>	
6. Intramural Research	235	\$124,549	0	\$438
7. Research Management and Support	159	44,945	0	9
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	394	\$1,267,078	0	\$68,324
Total changes				\$69,555

Fiscal Year 2016 Budget Graphs

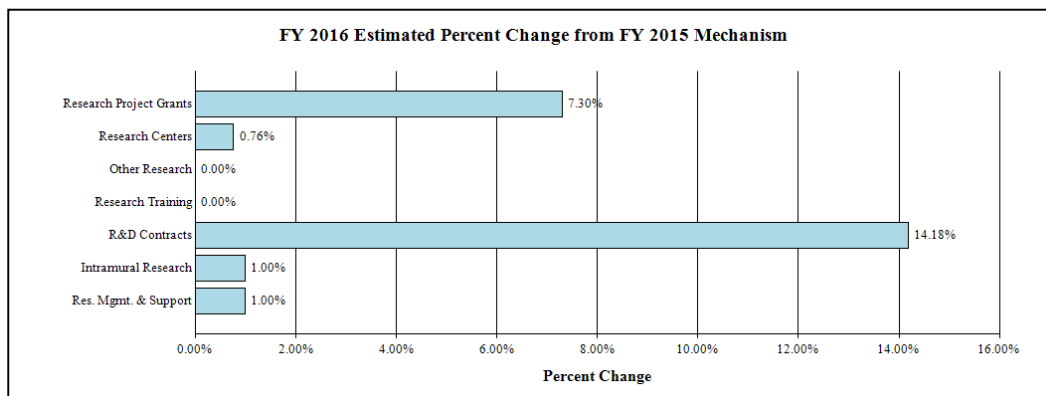
History of Budget Authority and FTEs:



Distribution by Mechanism:



Change by Selected Mechanism



NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Budget Authority by Activity¹

(Dollars in Thousands)

	FY 2014 Actual		FY 2015 Enacted		FY 2016 President's Budget		FY 2016 +/- FY2015	
<u>Extramural Research</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>
<u>Detail</u>								
Aging Biology		\$171,173		\$170,334		\$173,291		\$2,957
Behavioral & Social Research		197,223		196,255		199,662		3,407
Neuroscience		516,943		539,348		598,712		59,364
Geriatrics & Clinical Gerontology		124,380		123,770		125,919		2,149
Subtotal, Extramural		\$1,009,720		\$1,029,707		\$1,097,584		\$67,877
Intramural Research	235	\$118,794	235	\$123,316	235	\$124,549	0	\$1,233
Research Management & Support	157	\$43,203	159	\$44,500	159	\$44,945	0	\$445
TOTAL	392	\$1,171,717	394	\$1,197,523	394	\$1,267,078	0	\$69,555

¹ Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

**NATIONAL INSTITUTES OF HEALTH
National Institute on Aging**

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2015 Amount Authorized	FY 2015 Enacted	2016 Amount Authorized	FY 2016 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	\$1,197,523,000	Indefinite	\$1,267,078,000
National Institute on Aging	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				\$1,197,523,000		\$1,267,078,000

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2006	\$1,057,203,000	\$1,057,203,000	\$1,090,600,000	\$1,057,203,000
Rescission				(\$10,572,000)
2007	\$1,039,828,000	\$1,039,828,000	\$1,039,828,000	\$1,039,828,000
Rescission				\$0
2008	\$1,047,148,000	\$1,062,833,000	\$1,073,048,000	\$1,047,260,000
Rescission				(\$18,621,000)
2009	\$1,048,278,000	\$1,084,321,000	\$1,077,448,000	\$1,080,796,000
Rescission				\$0
2010	\$1,093,413,000	\$1,119,404,000	\$1,099,409,000	\$1,110,229,000
Rescission				\$0
2011	\$1,142,337,000		\$1,140,547,000	\$1,110,229,000
Rescission				(\$9,748,472)
2012	\$1,129,987,000	\$1,129,987,000	\$1,088,091,000	\$1,105,530,000
Rescission				(\$2,089,452)
2013	\$1,102,650,000		\$1,124,265,000	\$1,103,440,548
Rescission				(\$2,206,881)
Sequestration				(\$55,385,128)
2014	\$1,193,370,000		\$1,185,439,000	\$1,171,038,000
Rescission				\$0
2015	\$1,170,880,000			\$1,199,468,000
Rescission				\$0
2016	\$1,267,078,000			

Justification of Budget Request

National Institute on Aging

Authorizing Legislation: Section 301 and title IV of the Public Health Service Act, as amended.
Budget Authority (BA):

	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
BA	\$1,171,716,695	\$1,197,523,000	\$1,267,078,000	+\$69,555,000
FTE	392	394	394	0

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Director's Overview

In 2014, the National Institute on Aging (NIA) celebrated 40 years of excellence in leading the national scientific effort to understand the nature of aging in order to promote the health and well-being of older adults. NIA's mission is to: 1) support and conduct genetic, biological, clinical, behavioral, social, and economic research related to the aging process, diseases and conditions associated with aging, and other special problems and needs of older Americans; 2) foster the development of research and clinician-scientists for research on aging; and 3) communicate information about aging and advances in research with the scientific community, health care providers, and the public. NIA carries out the mission by supporting research at universities, research centers, and medical centers across the United States and around the world as well as a vibrant intramural research program at laboratories in Baltimore and Bethesda, Maryland.

NIA is the lead federal agency for research into Alzheimer's disease (AD), and NIA's comprehensive AD research program spans the spectrum of discovery, from basic neuroscience through translational research and clinical application. The National Alzheimer's Plan, [Alzheimer's Disease Research Summit in 2012](#), and allocation of additional funds from the NIH Director in 2012 and 2013 have accelerated momentum in this field. In 2016, several exciting trials incorporating biomarkers of disease – an approach that would have been impossible even a decade ago – will be active (see Program Portrait). NIA will also continue to support treatment trials to slow the disease or alleviate its symptoms, such as the recent study in which NIA-supported researchers found that the anti-depressant citalopram may be a safer and more effective treatment for disruptive agitation in AD than the treatments currently in use.

Our efforts in AD research have been bolstered by the advent of new technologies to generate and analyze enormous data sets. These new technologies have been particularly effective in identifying risk and protective genes for AD. Researchers can now access the first batch of genome sequence data from the Alzheimer's Disease Sequencing Project (ADSP), a

collaboration between the NIA and the National Human Genome Research Institute to facilitate identification of risk and protective genes. NIH recently awarded grants to eight academic medical centers around the nation for using innovative new technologies and computational methods to analyze the genome sequencing data generated during the ADSP's first phase. The investigators will use ADSP data to identify rare genetic variants that protect against or contribute to Alzheimer's; explore differences in data from different racial/ethnic groups; and examine how brain images and other biomarkers are associated with genome sequences.

Better understanding of the basic biology of aging may open up new avenues for prevention and cures, and investment in research on the aging process at its most fundamental levels is a major priority for NIA. The establishment of the trans-NIH GeroScience Interest Group (GSIG) to facilitate discovery on the common risks and mechanisms behind age-related diseases and conditions has invigorated the field of basic geroscience, and recommendations from the 2013 GSIG Summit entitled "Advances in Geroscience: Impact on Healthspan and Chronic Disease" continue to energize researchers in this field.

Recognizing that up to half of premature deaths in the United States are due to behavioral and social factors,¹ NIA maintains an ongoing commitment to supporting basic behavioral and social research in aging. The NIA-supported Health and Retirement Study remains the world's premier multidisciplinary source of data on the health and well-being of older Americans, linking objective and subjective measures of health with information about retirement, economic status, family structure, personality, as well as health behaviors and service utilization. Funds from the American Recovery and Reinvestment Act facilitated expansion of the study, including genotyping DNA samples from participants. In FY 2016, research will be ongoing to take advantage of the newly available genetic data to advance our understanding of how genetic, behavioral, and psychosocial factors affect health and well-being. NIA remains an active participant in the trans-NIH Science of Behavior Change initiative and the Basic Behavioral and Social Science Opportunity Network. NIA has also established an initiative to elucidate why the United States lags behind most other industrialized countries in health at older ages and longevity.

The Institute continues to place a strong emphasis on translating scientific discovery into health. For example, researchers with the Lifestyle Interventions and Independence for Elders study found that a carefully structured, moderate physical activity program can reduce the risk of losing the ability to walk without assistance, perhaps the single most important factor in whether vulnerable older people can maintain their independence. This is the first specific intervention proven in a randomized trial to prevent mobility disability. Other NIA-supported investigators have recently proposed the first diagnostic criteria for age-related sarcopenia, a loss of muscle mass that is often associated with weakness and is a frequent contributor to frailty in older age. NIA is also partnering with the Patient-Centered Outcomes Research Institute on a major intervention study to prevent injurious falls, a key cause of disability in older people.

¹ Schroeder SA. Shattuck Lecture: We Can Do Better – Improving the Health of the American People. *New Engl J Med* 357: 1221-1228, 2007.

Finally, NIA supports several innovative programs dedicated to training the next generation of aging researchers. The Advancing Diversity in Aging Research through Undergraduate Education Program, which supports creative and innovative undergraduate-level research education programs to diversify the workforce in aging; the Grants for Early Medical/Surgical Specialists Transition to Aging Research program to encourage specialists to consider geriatrics research careers; a new initiative combining medical school with a Ph.D. in behavioral or social science; and the Paul Beeson Career Development Awards in Aging Research for outstanding clinician-scientists, all exemplify NIA's commitment to excellence and diversity in aging research.

NIA's mission is urgent. The number of Americans aged 65 and older is growing at an unprecedented rate. By 2030, there will be 72 million Americans in this age group; more than double the number from 2000. The number of "oldest old" – people age 85 or older – is expected to more than triple between 2010 and 2050.² Age is a primary risk factor for many disabling diseases and conditions, and it is imperative to discover new and effective ways to make added years healthy and productive. The Institute recently updated its Strategic Directions to reflect the continuing evolution of our plans and priorities brought about by advances in biomedical science. See <http://www.nia.nih.gov/about/living-long-well-21st-century-strategic-directions-research-aging>.

Overall Budget Policy:

The FY 2016 President's Budget request is \$1,267.078 million, an increase of \$69.555 million, or 5.8 percent above the FY 2015 Enacted Level.

Program Descriptions and Accomplishments

Neuroscience Program: Understanding, Treating, and Preventing, Cognitive Decline and Alzheimer's Disease (AD): NIA's Neuroscience Program supports a broad spectrum of research and training aimed at better understanding age-related normal and pathological changes in the structure and function of the aging nervous system and how such changes affect behavior. The program's basic mission is to expand knowledge on the aging nervous system to allow improvement in the quality of life of older people. Ongoing activities include basic and clinical studies of normal brain aging as well as AD and other neurodegenerative diseases of aging. These include molecular and cellular studies, animal models, genetics, drug discovery and development, diagnosis, clinical course, clinical trials for treatment and prevention of AD and other neurodegenerative diseases as well as for maintaining or improving cognitive health, sensory and motor function, and epidemiological studies to identify risk factors and establish prevalence and incidence estimates. NIA also supports a national network of Alzheimer's Disease Centers to translate research advances into improved diagnosis and care of AD patients, as well as implementing a broad array of studies aimed at improving our understanding of this disease. The Institute coordinated the first NIH Alzheimer's Disease Research Summit in 2012. The second NIH-hosted Summit is planned for February 2015 to evaluate and build on these

² Federal Interagency Forum on Aging-Related Statistics. Older Americans 2012: Key Indicators of Well-Being. Federal Interagency Forum on Aging-Related Statistics. Washington, DC: U.S. Government Printing Office. 2012. <http://www.agingstats.gov>.

priorities, milestones, and timelines. Recommendations from this Summit will inform activities in FY 2016.

As the lead federal agency for research on AD, NIA leads implementation of research goals of the National Plan to Address Alzheimer's Disease. Recent initiatives have boosted support for AD research, including an additional \$100 million in FY 2014 and \$25 million in FY 2015 for the disease. The International Alzheimer's Disease Research Portfolio (IADRP), a publicly available database to capture the full spectrum of current AD research investments and resources throughout the world, will facilitate coordination of these efforts. The estimated total NIH-wide support for Alzheimer's disease will be \$638 million in FY 2016.

Recently, NIA awarded several major new grants supporting translational and clinical research aimed at the disease. These are among the first projects to be developed with direction from the 2012 AD Research Summit, and focus on identifying, characterizing and validating novel therapeutic targets and identifying possible ways to stop disease progression. All the clinical studies will be in very early stages of the disease, when intervention may be most effective. Researchers will:

- Apply innovative analytical methods to large-scale molecular, cellular and clinical data to construct biological network models and gain new insights into the complex mechanisms of the disease
- Discover, characterize and validate complex molecular networks and candidate genes that influence susceptibility to cognitive decline and Alzheimer's disease
- Elucidate the contributions of an abnormal form of the protein *tau* to brain shrinkage, cognitive impairment, and Alzheimer's dementia
- Test anti-amyloid drugs in cognitively normal, at-risk volunteers
- Assess the safety, tolerability, and biomarker efficacy of two experimental drugs, gantenerumab and solanezumab, in people who are genetically at high risk for the disease
- Determine whether recombinant sargramostim, a drug that stimulates the innate immune system, clears abnormal deposits of amyloid before they cause damage, preventing cognitive decline or improving cognition
- Test new anti-amyloid-beta drugs in volunteers who have an inherited form of AD

All of these projects will be active during FY 2016.

Budget Policy:

The FY 2016 President's Budget request is \$598.712 million, an increase of \$59.364 million, or 11.0 percent above the FY 2015 Enacted Level.

Program Portrait: Theragnostic Trials for Alzheimer’s Disease

FY 2015 Enacted Level: \$16.1 million³

FY 2016 Level: \$15.2 million

Change: -\$0.9 million

Through NIA-supported research over the past decade, investigators have gained the ability to identify and monitor unique biomarkers for Alzheimer’s disease in the living brain using neuroimaging and fluid biomarkers including cerebrospinal fluid. Together with the ground-breaking insight that the disease’s characteristic pathology may be present in the brain for years or even decades before clinical symptoms are evident, these advances have not only opened the door to preclinical detection of the disease, but have also facilitated the strategic use of biomarkers in clinical trials. Theragnostic trials – that is, studies in which investigators observe the effects of an intervention on biomarkers of the disease and link biomarker activity with the intervention’s effects on clinical symptoms – may be more rapid and less expensive than traditional clinical trials in Alzheimer’s disease using clinical and neuropsychological measures.

NIA, with an array of federal and private partners, will support three major theragnostic trials in 2016. The Dominantly Inherited Alzheimer’s Network Trials Unit (DIAN-TU) trial will assess the safety, tolerability, and biomarker efficacy of two experimental drugs, gantenerumab and solanezumab, in people who are genetically at high risk for the disease. The Alzheimer’s Prevention Initiative APOE4 trial will test two anti-amyloid drugs, an active vaccine and a beta-secretase inhibitor, in cognitively normal older volunteers who are at increased risk of developing late-onset Alzheimer’s. The Alzheimer’s Disease Cooperative Study Anti-Amyloid Treatment in Asymptomatic AD (A4) trial will assess the efficacy of solanezumab in clinically normal older people with neuroimaging biomarker evidence of brain amyloid. The NIH-supported Accelerating Medicines Partnership, a collaborative effort between NIH and several non-profit organizations and biopharmaceutical companies, will work to identify additional biomarkers for these trials. We anticipate that these trials will be complete between 2017 and 2020.

Biology of Aging Program: Understanding Aging Processes, Health, and Longevity:

Investigators supported by NIA’s Biology of Aging Program seek to improve our understanding of the basic biological mechanisms underlying the process of aging and age-related diseases. Basic biochemical, genetic, and physiological studies are carried out primarily in animal models, including both mammals and non-mammalian organisms (e.g., flies, worms, yeast). The program’s goal is to identify the biological basis for interventions in the process of aging, which is the major risk factor for many chronic diseases affecting Americans. The program also coordinates the NIH Geroscience Interest Group (GSIG), a collaborative effort that was established in 2012 to accelerate and coordinate efforts to promote discoveries on the common risks and mechanisms behind age-related diseases and conditions. Ongoing initiatives in this area that will remain active during FY 2016 include the Interventions Testing Program to identify compounds that extend median and/or maximal life span in a mouse model, along with a similar program to identify such compounds in the context of extensive genetic heterogeneity, using the worm model *Caenorhabditis*, as well as an initiative to develop and validate new models for aging research. Finally, the program coordinates the Nathan Shock Centers of Excellence in the Basic Biology of Aging. In 2013, the GSIG, with support from the Alliance for Aging Research and the Gerontological Society of America, hosted a major scientific conference entitled “Advances in Geroscience: Impacts on Healthspan and Chronic Disease,” and insights from this conference will continue to inform our research in this area.

³ The cost of the APOE4 trial, which was fully funded at \$33.3 million in FY 2013, is not reflected in these figures.

Budget Policy:

The FY 2016 President's Budget request is \$173.291 million, an increase of \$2.957 million, or 1.7 percent above the FY 2015 Enacted Level.

Behavioral and Social Research Program: Understanding and Addressing the Behavioral, Emotional, and Social Dynamics of Aging: NIA's Behavioral and Social Research Program supports research to increase our understanding of the processes of aging at the individual, institutional, and societal levels. Research areas include: 1) the behavioral, psychological, and social changes individuals experience over the adult lifespan; 2) participation of older people in the economy, families, and communities; 3) the development of interventions to improve the health, cognition, and well-being of older adults; and 4) the societal impact of population aging and associated changes in labor force participation and effects of economic circumstances on health. The program also supports: 1) development of publicly available, cross-nationally comparable datasets to facilitate research on the sources of international variations in health outcomes; 2) studies that integrate biology, including genetics, with social and behavioral science to elucidate the pathways by which social, psychological, economic, and behavioral factors affect health in middle age and late life; 3) longitudinal studies; 4) interventions to ameliorate the impact of disadvantage and reduce health disparities at older ages; 5) and interventions to maximize active life and health expectancy. The program coordinates the long-running Health and Retirement Study, the nation's leading source of combined data on health and financial circumstances of Americans over age 50; the Centers on the Demography and Economics of Aging; the Roybal Centers for Translational Research on Aging; and the Resource Centers for Minority Aging Research (RCMARs).

Major program activities for FY 2016 will include an initiative to enhance comparability of dementia assessment measures in nationally representative longitudinal aging studies around the world to facilitate the examination of international trends over time and achieve national objectives regarding the measurement of dementia prevalence; an M.D.-Ph.D. institutional training program in aging and the social/behavioral sciences; and an initiative to provide infrastructure support for advancing development of specific emerging and high priority interdisciplinary areas of behavioral and social research of relevance to aging.

Budget Policy:

The FY 2016 President's Budget request is \$199.662 million, an increase of \$3.407 million, or 1.7 percent above the FY 2015 Enacted Level.

Program Portrait: Testing Interventions to Extend Life and Health

FY 2015 Enacted Level: \$4.8 million
FY 2016 Level: \$4.7 million
Change: -\$0.1 million

Identification of safe, inexpensive, and non-invasive interventions that slow the aging process and promote healthy aging could have a significant impact on older Americans' quality of life. NIA established the **Interventions Testing Program (ITP)** in 2003 to support testing of interventions, including pharmaceuticals, nutraceuticals, plant-derived molecules, drugs, and hormones with the potential to extend lifespan and delay disease and dysfunction in a mouse model of aging. To facilitate replicability of results, testing is simultaneously performed at three sites -- the University of Michigan, the Jackson Laboratories, and the University of Texas Health Sciences Center at San Antonio -- and the project is designed to promote collaboration with investigators at other organizations. A strength of the program is that all interventions are tested in both male and female animals, allowing investigators to identify and analyze sex differences in the interventions' effects.

Since the program's establishment, ITP investigators have tested over 20 compounds and combinations, and have identified several compounds that increase life- and health-span in mice. For example, they found that the drug rapamycin can increase lifespan in both male and female mice. This finding spurred additional research both within the ITP and from the broader research community, resulting in many publications that both confirm the original ITP findings and demonstrate that rapamycin has many positive, and a few negative, effects on health span in aged mice. They subsequently found that three other agents -- acarbose, a drug commonly used to treat type 2 diabetes; the hormone 17- α -estradiol; and the antioxidant nordihydroguaiaretic acid -- increased the median lifespan of male mice, although no effect was seen in female mice. Further testing of these compounds is ongoing. NIA renewed funding for the ITP in 2014, and the program received additional funds to expand health-span measures.

In 2013, NIA established a similar program to identify pharmacological interventions that increase lifespan and/or health-span in multiple species of roundworms, including the simple invertebrate *Caenorhabditis* and/or multiple strains of *C.elegans*. Because human populations are genetically diverse, NIA is ultimately most interested in interventions that extend life/healthspan within a variety of genetic backgrounds. Testing compounds in a variety of genetic backgrounds within a species with a short, well-studied lifespan and health-span should increase the robustness of the findings. Standardization of technique and preliminary lifespan studies are nearly complete, and testing will begin soon on initial interventions.

Geriatrics and Clinical Gerontology Program: Reducing Disease and Disability among Older People: As we age, our risk for many types of disease and/or disability increases dramatically. NIA's Geriatrics and Clinical Gerontology Program supports research on health, disease, and disability in the aged (other than neurodegeneration, which is the focus of the NIA's Neuroscience Program). Areas of focus include age-related physical changes and their relationship to health outcomes, the maintenance of health and the development of disease, and specific age-related risk factors for disease.

A current research focus, which will continue into FY 2016, is the study of how early life factors can influence health and disease as we age. The program coordinates the Claude D. Pepper Older Americans Independence Centers Program; the goal of which is to increase scientific knowledge leading to better ways to maintain or restore independence in older persons. In addition, the program plans and administers clinical trials for a number of age-related conditions; for example, program-supported investigators are collaborating with the Patient-Centered Outcomes Research Institute (PCORI) on a clinical trial to test individually-tailored interventions to prevent fall-related injuries.

Budget Policy:

The FY 2016 President's Budget request is \$125.919 million, an increase of \$2.149 million, or 1.7 percent above the FY 2015 Enacted Level.

Intramural Research at NIA: Investigators with NIA’s Intramural Research Program (IRP) conduct research in the areas of basic, behavioral, clinical, epidemiologic and translational research. High priority research endeavors and areas of specific focus include: 1) *Molecular and Cellular Biology*, including caloric restriction, cell cycle control, signal transduction, DNA damage and repair, physiology, and medicinal chemistry; 2) *Neuroscience*, including neurodegenerative diseases, with particular emphasis on early diagnosis, drug design and development, and neuronal cell apoptosis; 3) *Genetics and Genomics*, particularly genetic and epigenetic determinants of aging as an integrated part of human development; 4) *Behavioral Research*, including personality, cognition, and psychophysiology; 5) *Clinical and Translational Research* in cardiology, immunology, neurology, and endocrinology; and 6) *Epidemiology*, including studies of frailty, cognition, body composition, disability, and molecular biomarkers of aging.

The clinical research effort focuses on the translation of basic research findings, prevention and therapeutic clinical trials focused on age-associated diseases, modulation of treatment efficacy and toxicity in older patients, and establishment of and maintenance of diverse longitudinal cohorts for aging research. Many studies focus on common age-related diseases such as Alzheimer’s disease, Parkinson’s disease, stroke, atherosclerosis, and diabetes. Others, such as the groundbreaking Baltimore Longitudinal Study of Aging, explore the determinants of healthy aging and attempt to define the physiological measures of biological aging. Work is also continuing on the Healthy Aging in Neighborhoods of Diversity Across the Life Span (HANDLS) study, which is examining the influences of race and socioeconomic status on the development of age-related health disparities among socioeconomically diverse African Americans and whites living in Baltimore.

Budget Policy:

The FY 2016 President’s Budget request is \$124.549 million, an increase of \$1.233 million, or 1.0 percent above the FY 2015 Enacted Level. Additional funds will be used to partially offset personnel costs and IT infrastructure improvements.

Research Management and Support (RMS): NIA RMS activities provide administrative, budgetary, logistical, and scientific support in the review, award, and monitoring of research grants, training awards and research and development contracts. RMS functions also encompass strategic planning, coordination, and evaluation of the Institute’s programs, regulatory compliance, international coordination, and liaison with other Federal agencies, Congress, and the public. The Institute currently oversees more than 1,538 research project grants and centers, as well as 532 full-time training positions and 78 research and support contracts.

Budget Policy:

The FY 2016 President’s Budget request is \$44.945 million, an increase of \$0.445 million, or 1.0 percent above the FY 2015 Enacted Level. Additional funds will be used to partially offset personnel costs and IT infrastructure improvements.

Program Portrait: Go4Life

FY 2015 Enacted Level: \$5.0 million

FY 2016 Level: \$5.4 million

Change: +\$0.4 million

Being physically active is vital to maintaining health and independence as we age. However, studies indicate that only 25 percent of people ages 65-74 say they engage in regular physical activity. To encourage sedentary older adults to reap health benefits by making physical activity part of their daily lives, the NIA maintains the award-winning, nationwide **Go4Life** campaign. Based on an extensive body of clinical research and expert advice, this effort is designed to help motivate older Americans to engage in physical activity and exercise by becoming active for the first time, returning to exercise after a break in their routines, or building more physical activity into daily routines.

Go4Life combines the best in evidence-based resources with a growing base of partners in the public and private sectors, at the national and local level, to get the word out about the proven effectiveness of exercise and physical activities for optimal aging. The **Go4Life** resources offer exercises, motivational tips, and free resources to help participants get ready, start exercising, and keep going. They center on an interactive website (www.nia.nih.gov/Go4Life) that features sample exercises, motivational tips, success stories, virtual exercise coaches, an interactive tool to track personal exercise routines, and free online and print materials in both English and Spanish.

More than 100 public and private national and community-based partners currently are working with **Go4Life** to disseminate messages and materials. **Go4Life** partners are involved in a variety of activities, from sponsoring local health fairs to conducting exercise classes to reprinting and distributing the sample workout booklet or exercise DVD.

Efforts are underway across the Department of Health & Human Services – including the Centers for Disease Control and Prevention; President’s Council on Fitness, Sports, and Nutrition; Office of Disease Prevention and Health Promotion, Office on Women’s Health, and the Administration on Community Living – to broaden the reach of **Go4Life**, with the Department seeking ways to plan and conduct a coordinated outreach effort to step up promotion of the **Go4Life** campaign.

NATIONAL INSTITUTES OF HEALTH
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Budget Authority by Object Class¹

(Dollars in Thousands)

	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Total compensable workyears:			
Full-time employment	394	394	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	\$162	\$162	\$0
Average GM/GS grade	12.0	12.0	0.0
Average GM/GS salary	\$97	\$98	\$1
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$0	\$0	\$0
Average salary of ungraded positions	\$0	\$0	\$0
OBJECT CLASSES	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Personnel Compensation			
11.1 Full-Time Permanent	\$29,263	\$29,967	\$704
11.3 Other Than Full-Time Permanent	13,988	14,433	445
11.5 Other Personnel Compensation	863	885	22
11.7 Military Personnel	484	497	13
11.8 Special Personnel Services Payments	7,721	7,754	33
11.9 Subtotal Personnel Compensation	\$52,319	\$53,536	\$1,217
12.1 Civilian Personnel Benefits	\$14,260	\$14,706	\$446
12.2 Military Personnel Benefits	324	327	3
13.0 Benefits to Former Personnel	0	0	0
Subtotal Pay Costs	\$66,903	\$68,569	\$1,666
21.0 Travel & Transportation of Persons	\$908	\$908	\$0
22.0 Transportation of Things	167	167	0
23.1 Rental Payments to GSA	0	0	0
23.2 Rental Payments to Others	0	0	0
23.3 Communications, Utilities & Misc. Charges	1,055	1,055	0
24.0 Printing & Reproduction	1	1	0
25.1 Consulting Services	\$826	\$826	\$0
25.2 Other Services	21,467	21,477	10
25.3 Purchase of goods and services from government accounts	96,141	104,295	8,154
25.4 Operation & Maintenance of Facilities	\$1,070	\$1,070	\$0
25.5 R&D Contracts	30,325	30,484	159
25.6 Medical Care	1,281	1,281	0
25.7 Operation & Maintenance of Equipment	2,349	2,349	0
25.8 Subsistence & Support of Persons	0	0	0
25.0 Subtotal Other Contractual Services	\$153,459	\$161,782	\$8,323
26.0 Supplies & Materials	\$8,067	\$8,067	\$0
31.0 Equipment	5,534	5,534	0
32.0 Land and Structures	0	0	0
33.0 Investments & Loans	0	0	0
41.0 Grants, Subsidies & Contributions	961,428	1,020,994	59,566
42.0 Insurance Claims & Indemnities	0	0	0
43.0 Interest & Dividends	1	1	0
44.0 Refunds	0	0	0
Subtotal Non-Pay Costs	\$1,130,620	\$1,198,509	\$67,889
Total Budget Authority by Object Class	\$1,197,523	\$1,267,078	\$69,555

¹ Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

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Salaries and Expenses

(Dollars in Thousands)

OBJECT CLASSES	FY 2015 Enacted	FY 2016 President's Budget	FY 2016 +/- FY 2015
Personnel Compensation			
Full-Time Permanent (11.1)	\$29,263	\$29,967	\$704
Other Than Full-Time Permanent (11.3)	13,988	14,433	445
Other Personnel Compensation (11.5)	863	885	22
Military Personnel (11.7)	484	497	13
Special Personnel Services Payments (11.8)	7,721	7,754	33
Subtotal Personnel Compensation (11.9)	\$52,319	\$53,536	\$1,217
Civilian Personnel Benefits (12.1)	\$14,260	\$14,706	\$446
Military Personnel Benefits (12.2)	324	327	3
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	\$66,903	\$68,569	\$1,666
Travel & Transportation of Persons (21.0)	\$908	\$908	\$0
Transportation of Things (22.0)	167	167	0
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	1,055	1,055	0
Printing & Reproduction (24.0)	1	1	0
Other Contractual Services:			
Consultant Services (25.1)	765	765	0
Other Services (25.2)	21,467	21,477	10
Purchases from government accounts (25.3)	63,126	63,275	149
Operation & Maintenance of Facilities (25.4)	1,070	1,070	0
Operation & Maintenance of Equipment (25.7)	2,349	2,349	0
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	\$88,777	\$88,936	\$159
Supplies & Materials (26.0)	\$8,067	\$8,067	\$0
Subtotal Non-Pay Costs	\$98,975	\$99,134	\$159
Total Administrative Costs	\$165,878	\$167,703	\$1,825

NATIONAL INSTITUTES OF HEALTH
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Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2014 Actual			FY 2015 Est.			FY 2016 Est.		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Aging Biology									
Direct:	15	-	15	15	-	15	15	-	15
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	15	-	15	15	-	15	15	-	15
Division of Behavioral & Social Research									
Direct:	12	-	12	12	-	12	12	-	12
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	12	-	12	12	-	12	12	-	12
Division of Extramural Affairs									
Direct:	35	-	35	35	-	35	35	-	35
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	35	-	35	35	-	35	35	-	35
Division of Geriatrics & Clinical Gerontology									
Direct:	14	-	14	14	-	14	14	-	14
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	14	-	14	14	-	14	14	-	14
Division of Neuroscience									
Direct:	18	1	19	20	1	21	20	1	21
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	18	1	19	20	1	21	20	1	21
Intramural Research Program									
Direct:	233	2	235	233	2	235	233	2	235
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	233	2	235	233	2	235	233	2	235
Office of Administrative Management									
Direct:	38	-	38	38	-	38	38	-	38
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	38	-	38	38	-	38	38	-	38
Office of the Director									
Direct:	24	-	24	24	-	24	24	-	24
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	24	-	24	24	-	24	24	-	24
Total	389	3	392	391	3	394	391	3	394
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0
FISCAL YEAR	Average GS Grade								
2012	12.0								
2013	12.0								
2014	12.0								
2015	12.0								
2016	12.0								

NATIONAL INSTITUTES OF HEALTH
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Detail of Positions¹

GRADE	FY 2014 Actual	FY 2015 Enacted	FY 2016 President's Budget
Total, ES Positions	1	1	1
Total, ES Salary	161,900	161,900	161,900
GM/GS-15	36	36	36
GM/GS-14	48	48	48
GM/GS-13	62	64	64
GS-12	61	61	61
GS-11	25	25	25
GS-10	0	0	0
GS-9	41	41	41
GS-8	9	9	9
GS-7	18	18	18
GS-6	4	4	4
GS-5	1	1	1
GS-4	1	1	1
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	306	308	308
Grades established by Act of July 1, 1944 (42 U.S.C. 207)	0	0	0
Assistant Surgeon General	0	0	0
Director Grade	3	3	3
Senior Grade	0	0	0
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	3	3	3
Ungraded	92	92	92
Total permanent positions	308	310	310
Total positions, end of year	402	402	402
Total full-time equivalent (FTE) employment, end of year	392	394	394
Average ES salary	161,900	161,900	161,900
Average GM/GS grade	12.0	12.0	12.0
Average GM/GS salary	96,514	97,479	98,454

¹ Includes FTEs whose payroll obligations are supported by the NIH Common Fund.