

DEPARTMENT OF HEALTH AND HUMAN SERVICES

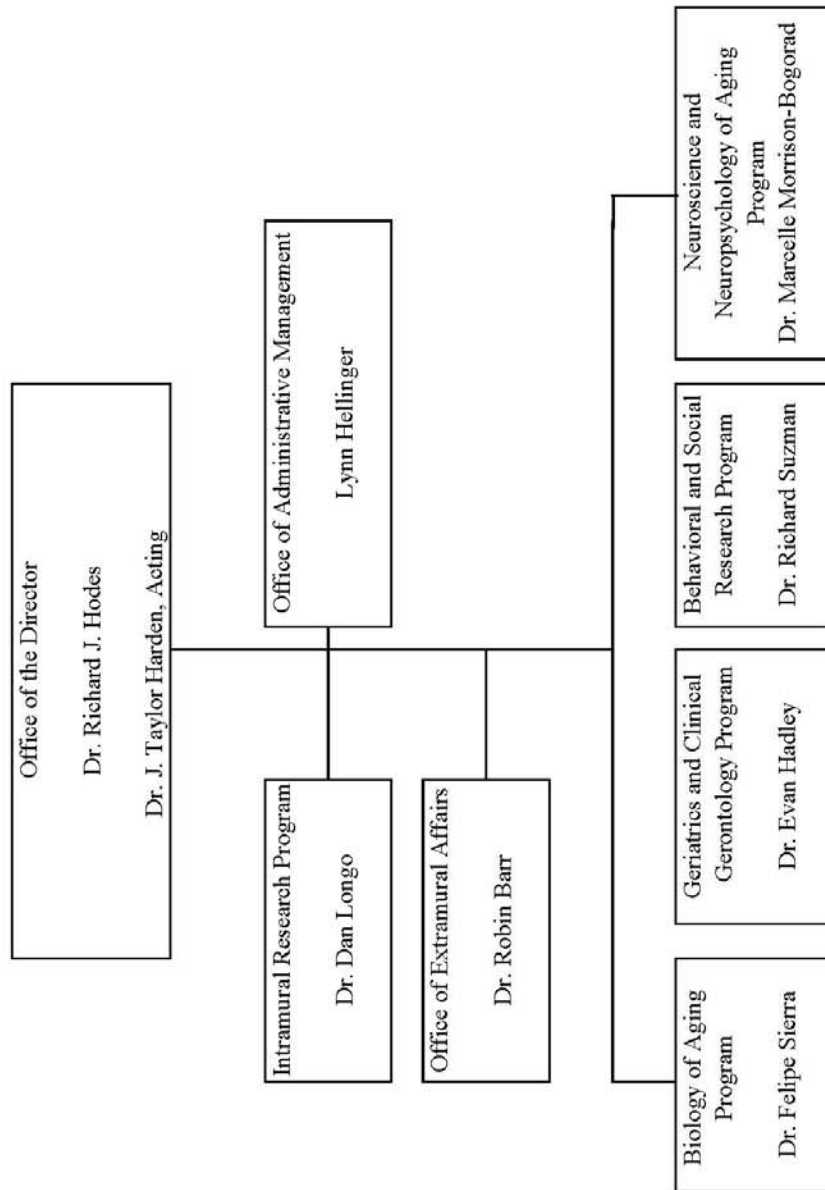
NATIONAL INSTITUTES OF HEALTH

National Institute on Aging

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

Organizational Structure



FY 2009 Proposed Appropriation Language

NATIONAL INSTITUTES OF HEALTH

National Institute on Aging

For carrying out section 301 and title IV of the Public Health Services Act with respect to Aging [~~\$1,065,881,000~~] **\$1,048,278,000** (Department of Health and Human Services Appropriation Act, 2008)

**National Institutes of Health
National Institute on Aging**

Amounts Available for Obligation 1/

Source of Funding	FY 2007 Actual	FY 2008 Enacted	FY 2009 Estimate
Appropriation	\$1,046,631,000	\$1,065,881,000	\$1,048,278,000
Pay cost add-on	629,000	0	0
Rescission	0	-18,621,000	0
Subtotal, adjusted appropriation	1,047,260,000	1,047,260,000	1,048,278,000
Real transfer under Director's one-percent transfer authority (GEI)	-1,792,000	0	0
Comparative transfer to NIBIB	-63,000	0	0
Comparative transfer to OD	-28,000	0	0
Comparative transfer to NCRR	-666,000	0	0
Comparative transfers to the Office of the Assistant Secretary for Admin. and Mgmt. and to the Office of the Assistant Secretary for Public Affairs	-3,000	0	0
Comparative transfer under Director's one-percent transfer authority (GEI)	1,792,000	0	0
Subtotal, adjusted budget authority	1,046,500,000	1,047,260,000	1,048,278,000
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	1,046,500,000	1,047,260,000	1,048,278,000
Unobligated balance lapsing	0	0	0
Total obligations	1,046,500,000	1,047,260,000	1,048,278,000

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

FY 2007 - \$3,126,000 FY 2008 - \$3,126,000 FY 2009 - \$3,126,000

Excludes \$23,363,000 in FY 2008 and \$19,838,000 in FY 2009 for royalties.

NATIONAL INSTITUTES OF HEALTH

National Institute on Aging

(Dollars in Thousands)

Budget Mechanism - Total

MECHANISM	FY 2007 Actual		FY 2008 Enacted		FY 2009 Estimate		Change	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Grants:								
<u>Research Projects:</u>								
Noncompeting	1,073	\$505,484	1,138	\$503,938	1,150	\$478,389	12	-\$25,549
Administrative supplements	(93)	7,751	(100)	8,445	(100)	8,445	(0)	0
<u>Competing:</u>								
Renewal	90	45,578	85	43,505	99	50,518	14	7,013
New	372	109,180	352	104,213	409	121,011	57	16,798
Supplements	10	2,330	9	2,224	10	2,582	1	358
Subtotal, competing	472	157,088	446	149,942	518	174,111	72	24,169
Subtotal, RPGs	1,545	670,323	1,584	662,325	1,668	660,945	84	-1,380
SBIR/STTR	73	25,365	73	25,500	73	25,500	0	0
Subtotal, RPGs	1,618	695,688	1,657	687,825	1,741	686,445	84	-1,380
<u>Research Centers:</u>								
Specialized/comprehensive	74	82,960	74	82,599	74	82,599	0	0
Clinical research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative medicine	0	653	0	670	0	670	0	0
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Subtotal, Centers	74	83,613	74	83,269	74	83,269	0	0
<u>Other Research:</u>								
Research careers	222	27,768	229	28,895	229	28,895	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	689	0	1,293	0	1,293	0	0
Other	31	4,654	31	4,770	31	4,770	0	0
Subtotal, Other Research	253	33,111	260	34,958	260	34,958	0	0
Total Research Grants	1,945	812,412	1,991	806,052	2,075	804,672	84	-1,380
<u>Research Training:</u>								
Individual awards	95	3,747	95	3,747	95	3,777	0	30
Institutional awards	469	20,026	469	20,026	469	20,186	0	160
Total, Training	564	23,773	564	23,773	564	23,963	0	190
Research & development contracts (SBIR/STTR)	107 (0)	68,800 (59)	107 (0)	70,198 (59)	107 (0)	70,198 (59)	0 (0)	0 (0)
<u>Intramural research</u>								
Intramural research	247	102,481	252	107,617	254	109,231	2	1,614
Research management and support	136	39,034	140	39,620	141	40,214	1	594
Total, NIA	383	1,046,500	392	1,047,260	395	1,048,278	3	1,018

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging
Budget Authority by Activity
(Dollars in thousands)

	FY 2005		FY 2006		FY 2007		FY 2007		FY 2008		FY 2009		Change	
	FIEs	Amount	FIEs	Amount	FIEs	Amount	FIEs	Amount	FIEs	Amount	FIEs	Amount	FIEs	Amount
Extramural Research														
Detail:														
Biology of Aging Program		\$ 181,169		\$ 178,088		\$ 179,394		\$ 179,617		\$ 178,633		\$ 178,396		-\$237
Behavioral & Social Research Program		169,751		171,168		172,666		172,881		171,933		171,706		-227
Neuroscience & Neuropsychology of Aging Program		423,129		418,807		414,962		415,480		413,201		412,655		-546
Geriatrics & Clinical Gerontology Program		140,875		137,001		136,837		137,007		136,256		136,076		-180
Subtotal, Extramural		914,924		905,064		903,859		904,985		900,023		898,833		-1,190
Intramural research	244	102,805	246	102,607	247	102,566	247	102,481	252	107,617	254	109,231	2	1,614
Res. management & support	122	34,261	132	38,241	136	39,043	136	39,034	140	39,620	141	40,214	1	594
TOTAL	366	1,051,990	378	1,045,912	383	1,045,468	383	1,046,500	392	1,047,260	395	1,048,278	3	1,018

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging

Major Changes in the Fiscal Year 2009 Budget Request

Major changes by budget mechanism and/or budget activity detail are briefly described below. Note that there may be overlap between budget mechanism and activity detail and these highlights will not sum to the total change for the FY 2009 budget request for NIA, which is \$1,018,000 more than the FY 2008 Enacted level, for a total of \$1,048,278,000.

Research Project Grants (-\$1,380,000; total \$686,445,000): NIA will continue to support new investigators and to maintain an adequate number of competing RPGs. NIA will support a total of 1,668 Research Project Grant (RPG) awards in FY 2009. Noncompeting RPGs will increase by 12 awards and decrease by \$25,549,000. Competing RPGs will increase by 72 awards and \$24,169,000. The NIH Budget policy for RPGs in FY 2009 is to provide no inflationary increases in noncompeting awards and no increase in average cost for competing RPGs.

Intramural Research (+\$1,614,000; total \$109,231,000): Intramural Research will receive a modest increase to help offset the cost of pay and other increases. NIA will work to identify areas of potential savings within the Intramural Research Program that will allow the institute to continue to achieve its program goals and accomplishments.

Research Management and Support (+\$594,000; total \$40,214,000): The NIA oversees almost 2,100 research grants and more than 500 full-time training positions and 100 research and development contracts. The increase will be used to partially offset the expenses associated with pay raises and other inflationary cost increases necessary to provide for the effective administrative, planning and evaluation, public information and communications, and scientific leadership of the institute.

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging
Summary of Changes

FY 2008 Enacted		\$1,047,260,000	
FY 2009 Estimated Budget Authority		1,048,278,000	
Net change		1,018,000	
CHANGES	FY 2008 Enacted		Change from Base
	FTEs	Budget Authority	FTEs Budget Authority
A. Built-in:			
1. Intramural research:			
a. Annualization of January 2008 pay increase			
		\$41,253,000	\$463,000
b. January FY 2009 pay increase			
		41,253,000	897,000
c. One less day of pay			
		41,253,000	(157,000)
d. Payment for centrally furnished services			
		13,232,000	198,000
e. Increased cost of laboratory supplies, materials, and other expenses			
		53,132,000	1,026,000
Subtotal		2,427,000	
2. Research management and support:			
a. Annualization of January 2008 pay increase			
		\$18,510,000	\$208,000
b. January FY 2009 pay increase			
		18,510,000	403,000
c. One less day of pay			
		18,510,000	(71,000)
d. Payment for centrally furnished services			
		6,170,000	93,000
e. Increased cost of laboratory supplies, materials, and other expenses			
		14,940,000	283,000
Subtotal		916,000	
Subtotal, Built-in		3,343,000	

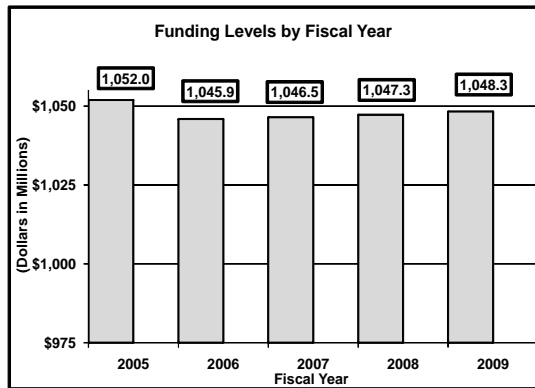
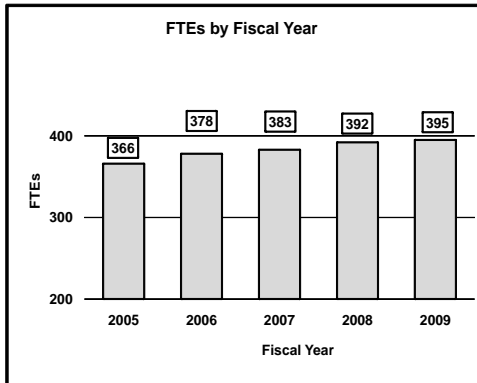
**NATIONAL INSTITUTES OF HEALTH
National Institute on Aging**

Summary of Changes--continued

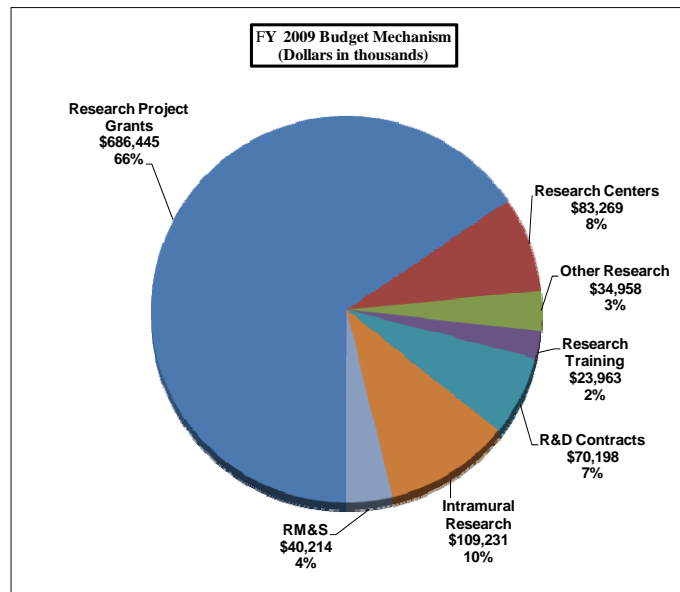
CHANGES	FY 2008 Enacted		Change from Base	
	No.	Amount	No.	Amount
B. Program:				
1. Research project grants:				
a. Noncompeting	1,138	\$512,383,000	12	(\$25,549,000)
b. Competing	446	149,942,000	72	24,169,000
c. SBIR/STTR	73	25,500,000	0	0
Total	1,657	687,825,000	84	(1,380,000)
2. Research centers	74	83,269,000	0	0
3. Other research	260	34,958,000	0	0
4. Research training	564	23,773,000	0	190,000
5. Research and development contracts	107	70,198,000	0	0
Subtotal, extramural				(1,190,000)
6. Intramural research	<u>FTEs</u> 252	107,617,000	<u>FTEs</u> 2	(813,000)
7. Research management and support	140	39,620,000	1	(322,000)
Subtotal, program		1,047,260,000		(2,325,000)
Total changes	392		3	1,018,000

Fiscal Year 2009 Budget Graphs

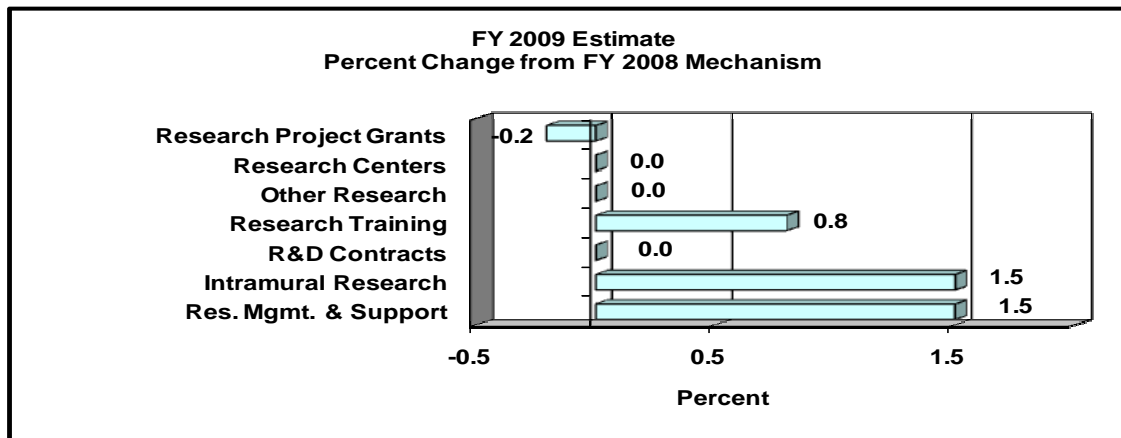
History of Budget Authority and FTEs:



Distribution by Mechanism:



Change by Selected Mechanism:



**Justification
National Institute on Aging**

Authorizing Legislation: Section 301 and title IV of the Public Health Service Act, as amended.

Budget Authority:

FY 2007 Actual		FY 2008 Enacted		FY 2009 Estimate		Increase or Decrease	
<u>FTE</u>	<u>BA</u>	<u>FTE</u>	<u>BA</u>	<u>FTE</u>	<u>BA</u>	<u>FTE</u>	<u>BA</u>
383	\$1,046,500,000	392	\$1,047,260,000	395	\$1,048,278,000	+3	+\$1,018,000

This document provides justification for the Fiscal Year (FY) 2009 activities of the National Institute on Aging (NIA), including NIH/AIDS activities. Details of the FY 2009 HIV/AIDS activities are in the “Office of AIDS Research (OAR)” Section of the Overview. Details on the Common Fund are located in the Overview, Volume One. Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Director’s Overview

Author and humorist Garrison Keillor. Influential film critic Roger Ebert. Legendary filmmaker Martin Scorsese. Nobel Prize-winning neurologist and biochemist Stanley Prusiner. Aretha Franklin, the “Queen of Soul.” In 2007, each of these remarkable Americans continued to lead active and productive lives, making noteworthy contributions to American life and culture. Beyond their undeniable achievements, however, they have one other thing in common: In 2007, each one celebrated his or her 65th birthday.

In reaching this milestone, they join the millions of Americans who are remaining healthy and vital well into older age. They are also representative of a rapidly growing trend. Within 25 years, experts believe, some 70 million Americans will reach age 65 or older – fully double today’s number in that age group. The number of “oldest old” – people age 85 or older – will more than quadruple by 2050, and this group is projected to include nearly one million centenarians, up from three thousand in 1950. As unprecedented numbers of Americans reach retirement age and beyond, profound changes will occur in our economic, health care, and social systems.

The good news is that even as the population ages, the rate of disability among older Americans continues to decline. The percentage of American elders reporting some level of disability fell from 26.5 percent in 1982 to 19 percent in 2004-2005, the most

recent years for which estimates are available.¹ However, as the number of older Americans continues to rise, we are challenged to discover new and effective ways to make these added years as healthy and productive as possible and to continue the current trend of decline in disability across all segments of the population.

The National Institute on Aging (NIA) leads a 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:

- 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.
- Foster the development of research- and clinician-scientists for research on aging.
- Communicate information about aging and advances in research on aging with the scientific community, health care providers, and the public.

We carry out our mission by supporting extramural research at universities and medical centers across the United States and around the world and a vibrant intramural research program at NIA laboratories in Baltimore and Bethesda, Maryland.

NIA's research programs are broad in scope. Some NIA-supported researchers focus on the biological basis of aging that may provide fundamental knowledge to **predict** or **preempt** disease. Others are working to gain new insights into disease processes and comorbidities and using this knowledge to develop more effective ways to prevent, diagnose, and treat diseases and conditions of aging. Still others are exploring behavioral and social factors involved in aging and how they interact with genetics and biology. All of this research holds potential for the development of **personalized** interventions. Behavioral and social scientists are also concerned with the economic and societal consequences of a rapidly aging population.

Understanding aging processes and developing interventions that will support healthy aging requires an approach that integrates the work of diverse scientific disciplines and promotes the translation of basic research findings into application in medical practice, public health, and policy development. For example, a major NIA initiative seeks to encourage more investigators to move from purely basic research on Alzheimer's disease and related disorders into translational research, drug testing in clinical trials, and development of effective behavioral interventions. Components of this initiative include solicitations for research grant proposals on drug discovery and preclinical development, as well as a program of toxicology services for academic and small business investigators who believe they have promising compounds for the treatment or prevention of Alzheimer's disease but lack the resources to perform the necessary toxicology studies. Additional initiatives are targeting the translation of our rapidly

¹ Manton K, Gu X, Lamb VL. Change in chronic disability from 1982 to 2004/05 as measured by long-term changes in function and health in the U.S. elderly population. PNAS 2006 Nov; 103(48): 18374-18379.

expanding understanding of the basic biology of aging to applications for prevention and treatment of a spectrum of age-related diseases and conditions.

An important aspect of research translation is communication of research results to the public. The Institute's comprehensive communications initiatives support patient **participation** by reaching out to researchers, health professionals, older adults and their families and caregivers, and the media to provide the latest research findings and evidence-based information on healthy aging and diseases associated with growing older. Key communications-related activities include two websites, the NIA's main site at www.nia.nih.gov and the Alzheimer's-dedicated Alzheimer's Disease Education and Referral (ADEAR) Center at www.alzheimers.org.

NIA optimizes its efforts through collaborations with other federal, nonprofit, private, and international partners. Major collaborative efforts such as the Osteoarthritis Initiative with the National Institute of Musculoskeletal and Skin Disorders; the Alzheimer's Disease Neuroimaging Initiative with an array of federal, private, and nonprofit organizations; and the Cognitive and Emotional Health Project (see page NIA-17) provide the opportunity for the Institute to build synergy and leverage resources in pursuit of our overall goal to make it possible for people to have not only longer but healthier and more productive lives in the 21st century.

In the following pages, we describe some of our plans for progress in FY 2009. Our recently updated strategic directions document, *Living Long and Well in the 21st Century: Strategic Directions for Research on Aging*, is available online at www.nia.nih.gov/AboutNIA/StrategicDirections.

Overall Budget Policy

NIA will continue to support new investigators and to maintain an adequate number of competing RPGs. In order to maximize the number of competing research project grants that can be made, NIA has a cap on the amount that can be awarded to individual program project awards and is following the NIH policy in providing no inflationary increases for non-competing or competing grants. In addition, the NIA has targeted a portion of the funds available for competing research project grants to support high priority projects outside of the payline, including awards to new investigators and first-time renewals. The Institute also seeks to maintain a balance between solicitations issued to the extramural community in areas that need stimulation and funding made available to support investigator-initiated projects. Intramural Research and Research Management and Support receive modest increases to help offset the cost of pay and other increases.

Program Descriptions and Accomplishments

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

Investigators supported by NIA's Biology of Aging Program (BAP) seek to better understand 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, and yeast). BAP's goal is to provide the biological basis for interventions in the process of aging, which is the major risk factor for many chronic diseases affecting the American population.

In FY 2007, NIA began planning for a "Biology of Aging Summit" to review BAP's current research portfolio, identify areas of opportunity, and facilitate the formulation of cohesive and comprehensive plans for the future. This conference will be held in FY 2008.

Budget Policy: The FY 2009 budget estimate for the Biology of Aging Program is \$178,396,000, a decrease of \$237,000 or .1 percent from the FY 2008 level of \$178,633,000. Program objectives for FY 2009 include plans to:

- *Continue the search for interventions that extend the lifespan.* NIA is testing promising compounds in mice and other model systems with the long term goal of selecting for further development those most likely to have a beneficial effect in humans. An important component of this effort is the Intervention Testing Program (ITP), an NIA-supported project investigating treatments such as diets, pharmaceuticals, and nutritional supplements that have the potential to extend the lifespan and delay disease and dysfunction in a mouse model. Ten compounds are currently under study, and it is anticipated that up to three additional compounds will be added in 2008 and again in 2009. The ITP is the primary mechanism through which the NIA is working to achieve its most recently established GPRA goal, "By 2012, identify at least one candidate intervention that extends median life span in an animal model."
- *Increase our understanding of the aging immune system.* A new initiative on "Membrane Associated Signaling Defects in Immune Cells with Aging" seeks to shed light on the cellular processes that may lead to impaired immune function in older people. In FY 2007, eight research grants were awarded; these grants will be active in FY 2009, and a new solicitation is under development for grant applications beyond FY 2009. NIA also collaborated with the National Institute of Allergy and Infectious Diseases on a June 2007 workshop to discuss recent research advances in our understanding of the underlying mechanisms that regulate age-related atrophy of the thymus, an organ that is critical to the healthy function of the immune system.
- *Increase our understanding of the interactions among protein quality control systems in aging cells.* Continuous turnover of cellular proteins is critical for maintaining healthy cell function and preventing cell death. In FY 2007, NIA solicited grant applications for research collaborations to increase our understanding of the interplay among various mechanisms responsible for the repair or removal of

damaged, mutated, or misfolded proteins. Findings from this research may have implications for a number of age-related diseases, including neurodegenerative

- disorders such as Alzheimer's and Parkinson's diseases. Awards are planned for FY 2008 to run through FY 2009.

Behavioral and Social Research Program:

Understanding and Addressing the Behavioral, Emotional, and Social Dynamics of Aging

NIA's Behavioral and Social Research Program (BSR) supports social and behavioral research to better understand the processes of aging at both the individual and societal level. Research areas include the behavioral, emotional, and social changes individuals undergo throughout the adult lifespan; interrelationships between older people and social institutions; and the societal impact of the changing age composition of the population. BSR also supports research training; development of research resources such as publicly available, cross-nationally comparable databases that support critical multidisciplinary behavioral and social research; and a knowledge base for the development of interventions to maximize active life and health expectancy.

In 2007, NIA commissioned an evaluation of its highly successful Demography of Aging Centers and Roybal Centers for Applied Gerontology. The evaluators were enthusiastic about the Centers' activities and accomplishments; NIA plans to renew both programs in FY 2009. In addition, in February 2007, NIA partnered with the Department of State to host a Summit on Global Aging, which provided a unique and important opportunity to catalyze greater international dialogue and encourage coordinated international studies about the health, economic, social, and security implications of this important issue.

Budget Policy: The FY 2009 budget estimate for the Behavioral and Social Sciences Research Program is \$171,706,000, a decrease of \$227,000 or .1 percent from the FY 2008 level of \$171,933,000. Program objectives for FY 2009 include plans to:

- *Continue major demographic studies that provide important insights into social and economic trends.* NIA supports long term studies of older Americans covering a wide range of topics, including retirement and economic status, caregiving, behavioral medicine, the dynamics of health and functional change at older ages, cognition, genetics, and long-term care. Notable studies include the ongoing Health and Retirement Study (HRS) (established 1992), the leading source of combined data on health and financial circumstances of Americans over age 50 and a valuable resource to follow and predict trends and help inform policies for an aging America. NIA also partners with the U.S. Census Bureau on joint demographic studies of the elderly population and the Federal Forum on Aging, which is composed of 13 federal departments and agencies, and collects, provides, and analyzes aging-related data.

- *Support research initiatives to address financial challenges faced by American elders.* Funding for two major initiatives in this area will continue through FY 2009. One initiative, “Developing Integrated Economic Models of Health and Retirement,” stimulates development of comprehensive econometric models of retirement from the labor force. The other focuses on the neuroeconomics of aging and supports research to examine the social, emotional, cognitive, motivational processes and neurobiological mechanisms of decision-making behavior in older people.
- *Support development of new methods to collect, store, and share research data from longitudinal studies.* Much of the data from NIA’s long term surveys is available to researchers in the behavioral and social sciences but has become more difficult to use over time due to complexity of longitudinal samples or the addition of new survey components. To make these data more widely available, a new NIA initiative seeks to develop and archive user-friendly public use data files from longitudinal surveys and behavioral interventions. NIA also supports efforts to ensure comparability of results from surveys from different countries, which will facilitate our understanding and ability to address the challenges of an aging society at the global level.

Neuroscience and Neuropsychology of Aging:
Understanding, Preventing, and Treating Cognitive Decline and Disability

NIA’s Neuroscience and Neuropsychology of Aging (NNA) 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 nervous system and how such changes affect behavior. The basic mission is to expand knowledge on the aging nervous system to allow improvement in the quality of life of older people. This includes basic and clinical studies of the nervous system, clinical trials of treatments and preventive interventions for neurological disease, and epidemiological research to identify risk factors and to establish prevalence and incidence estimates of pathologic conditions. Additionally, it supports research relevant to those geriatric problems arising from psychiatric and neurological disorders associated with aging.

In October 2007, in partnership with the McKnight Brain Research Foundation and the Foundation for the National Institutes of Health, NIA held a Cognitive Aging Summit. The purpose of this major meeting was to bring together experts from a variety of research fields to discuss the latest advances in our understanding of age-related brain and behavioral changes. Recommendations from this conference will inform NIA’s research directions in the field of cognitive aging in the coming years.

Budget Policy: The FY 2009 budget estimate for the Neuroscience and Neuropsychology of Aging Program is \$412,655,000, a decrease of \$546,000 or .1 percent from the FY 2008 level of \$413,201,000. Program objectives for FY 2009 include plans to:

- *Continue to support high-quality research on Alzheimer's disease (AD).* Alzheimer's disease is a major public health issue for the United States because of its enormous impact on individuals, families, the health care system, and society as a whole. NIA supports a robust portfolio that encompasses all areas of AD research, from the molecular underpinnings to cutting-edge diagnostic and treatment modalities. NIA will continue its preclinical drug development program (established 2005) and pilot trials initiative (established 1999), plus a cooperative agreement with the University of California, San Diego to conduct several new clinical trials of interventions to treat AD through the Alzheimer's Disease Cooperative Study. In addition, NIA will continue work under the groundbreaking AD Neuroimaging Initiative, which reached its target enrollment during FY 2007, and the AD Genetics Initiative, which was established to facilitate identification of genes that contribute to late-onset AD, the more common form of the disease.
- *Continue to fund a consortium to follow and evaluate individuals who are genetically predisposed to develop early-onset Alzheimer's disease.* Inherited early-onset AD is rare, accounting for fewer than one to five percent of all cases of the disease. However, disease onset and course are similar to those seen in the more common late-onset form of AD. Because there is a high probability that genetically-predisposed individuals will eventually develop AD, they represent an important population in which to study AD at its earliest pre-symptomatic stages and to evaluate possible preventive interventions. Funding for this consortium, which was a major recommendation resulting from NIA's 2006 AD Summit, will begin in FY 2008, and it is anticipated that the consortium will be active during FY 2009.
- *Continue research on neurological diseases and conditions other than AD that occur in older Americans, including Parkinson's disease, frontotemporal dementia (FTD), and amyotrophic lateral sclerosis (ALS).* This research is an important component of NIA's portfolio. NIA-supported scientists have discovered a link between a mutated gene and a protein found in brain cells of people who suffer from FTD and ALS. The finding demonstrates for the first time a pathological pathway that results in cell death related to these diseases, and could eventually play a role in the design of new drug therapies. In FY 2009, NIA will continue research in these areas through investigator-initiated projects and through projects funded under relevant research solicitations.

Program Portrait: Cognitive Health and Aging	
FY 2008 level:	\$500,580,000
FY 2009 level:	<u>\$501,070,000</u>
Change:	\$ 490,000

Although most people remain relatively alert and mentally able as they grow older, some loss of cognitive function is normal with advancing age. However, the mechanisms behind these cognitive losses are not fully understood, and interventions are needed to help older people maintain optimal brain health for as long as possible. With the aging of the U.S. population, the development of strategies to maintain cognitive health into late old age is becoming increasingly important.

A new focus on brain *health*, as opposed to the study of causes of specific brain diseases and dysfunction, has emerged in recent years and has become an increasingly important paradigm in neurosciences research. One NIH initiative to support the study of brain health is the Cognitive and Emotional Health Project (CEHP). Established in 2001 by NIA, the National Institute of Mental Health, and the National Institute of Neurological Disorders and Stroke, the goal of the CEHP is to coordinate and accelerate research leading to interventions for neurological health. One major effort has been the systematic review and critique of published literature on factors for cognitive and emotional health in the adult. Based on suggestions from the CEHP panel that conducted the evaluation of the published literature, the NIH Blueprint for Neuroscience Research awarded a contract in 2006 to develop an assessment tool to measure cognitive, emotional, motor and sensory function in large cohort studies. Other ongoing CEHP efforts include the development of a comprehensive online bibliography and a database of large longitudinal and epidemiological studies that have captured data on cognitive and emotional health risk and prevention factors. A perspective on CEHP and related research supported by NIA and NIH was published in the April 2007 supplementary issue of the journal Alzheimer's and Dementia.

Studies of normal cognitive aging may also inform our understanding of cognitive dysfunction -- and vice versa. For example, low levels of AD pathology observed in the brains of those enjoying apparently normal aging, without cognitive abnormalities, could be early signs of the disease. Conversely, studies conducted under the Alzheimer's Disease Neuroimaging Initiative might be particularly informative as we seek to better understand normal aging. This study aims to identify imaging and biochemical markers for "healthy" or normally functioning persons, for those with mild cognitive impairment (MCI), and for persons with AD or other dementias. Eventually, such markers will help to identify people at high risk for cognitive decline or dementia.

In October 2007, NIA, in partnership with the McKnight Brain Research Foundation and the Foundation for the National Institutes of Health, held a Cognitive Aging Summit. Participants in this advisory meeting generated innovative recommendations for advancing the field of cognitive aging research, with particular emphasis on ways to promote and maintain cognitive health and brain health in older adults. We anticipate that research initiatives stimulated by this meeting will be launched in FY 2009.

Geriatrics and Clinical Gerontology Program:
Reducing Disease and Disability among Older People

As we age, our risk for many other types of disease and/or disability increases dramatically. NIA's Geriatrics and Clinical Gerontology (GCG) Program supports research on health, disease, and disability in the aged (other than neurodegeneration, which is the focus of the NNA 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. The program also plans and administers clinical trials.

In FY 2007, NIA issued a research solicitation for the renewal of the Claude D. Pepper Older American Independence Centers Program, the goal of which is to increase scientific knowledge leading to better ways to maintain or restore independence in older persons. Awards will be made in FY 2008.

Budget Policy: The FY 2009 budget estimate for the Geriatrics and Clinical Gerontology Program is \$136,076,000, a decrease of \$180,000 or .1 percent from the FY 2008 level of \$136,256,000. Program objectives for FY 2009 include plans to:

- *Initiate studies of venous and arterial thrombosis in the elderly.* Older age is associated with a dramatic increase in venous and arterial thrombosis (the development of dangerous blood clots in the veins and arteries). However, the biologic mechanisms for this increased risk are poorly understood. A new initiative is exploring the biological mechanisms, epidemiology, pathophysiology, and clinical aspects (diagnosis, treatment, and prevention) of this common condition. Grants awarded under this initiative will be active in FY 2009.
- *Continue research on anemia in the elderly.* Anemia is common among older people; however, over half the cases of anemia in older adults occur without a clearly identifiable cause. An ongoing program supports research to better understand the epidemiology, pathophysiology, and clinical aspects of anemia in the elderly. In addition, an NIA Advisory Workshop on clinical trial issues in studying anemia in older patients was held in October 2007, resulting in the development of a research consortium to facilitate the establishment of a research program in anemia in the elderly and stimulate clinical studies of promising new approaches to its management. NIA plans to release a new solicitation inviting applications for this consortium in early 2008, and awards will be active in FY 2009.
- *Identify childhood factors that may exert a protective effect on health later in life.* Some studies have suggested the existence of physical factors, such as those that contribute to tissue maintenance, resistance to stressors, and injury recovery in childhood that may inhibit the onset or progression of specific adverse aging changes. Identification of such factors might ultimately lead to novel strategies for prevention of age-related conditions through the maintenance or restoration of such juvenile protective factors into adulthood. In 2007, NIA, in partnership with the Office of Dietary Supplements and the National Heart, Lung and Blood Institute, solicited research to identify and better understand these factors, resulting in eight awards. Grants awarded under these solicitations will be active in FY 2009.
- *Conduct studies on nutrition, weight loss and maintenance, and exercise in the elderly.* In FY 2007, NIA released solicitations for research grant proposals in a number of related areas, including studies of long-term weight maintenance, diet composition and energy balance, improving the measurement of diet and physical activity in clinical studies, and the role of nutrition in the prevention of common age-

related conditions such as heart disease and cancer. Grants awarded under these solicitations will be active in FY 2009.

Intramural Research at NIA

NIA's Intramural Research Program (IRP) includes the scientific disciplines of biochemistry, cell and molecular biology, structural biology, genetics, immunology, neurogenetics, behavioral sciences (psychology, cognition, and psychophysiology), epidemiology, statistics, and clinical research and the medical disciplines of neurobiology, immunology, endocrinology, cardiology, rheumatology, hematology, oncology, and gerontology. The program seeks to understand the changes associated with healthy aging and to define the criteria for evaluating when a change becomes pathologic. Studies focus on both common age-related diseases (e.g., Alzheimer's disease, Parkinson's disease, stroke, atherosclerosis, osteoarthritis, diabetes, cancer) and the determinants of healthy aging.

In FY 2009, the NIA IRP sustained a program of high-quality research on the basic biochemical and molecular underpinnings of aging and age-related diseases and conditions. In addition, IRP investigators conducted clinical research on a variety of conditions, including studies of the etiology of anemia, treatment trials for lymphoma, and studies to better understand several connective tissue disorders. In addition, work continued under the groundbreaking Baltimore Longitudinal Study of Aging, which will celebrate its fiftieth anniversary in 2008.

Budget Policy: The FY 2009 budget estimate for the NIA's Intramural Research Program is \$109,231,000, an increase of \$1,614,000 or 1.5 percent over the FY 2008 level of \$107,617,000. Additional funds will be used to partially offset the costs associated with pay raises and other increases. Program objectives for FY 2009 include plans to:

- *Determine the effectiveness of already available therapeutic agents for prevention in models of heart disease.* Animal studies suggest that the compound fenoterol, widely used for treatment of pulmonary disease, may be effective in the treatment of congestive heart failure. Other studies in animal models have shown that the drug erythropoietin, used to treat certain types of anemia, has a protective effect on the heart if administered shortly after a heart attack. Based on the results of these studies, NIA's IRP initiated clinical trials in 2006 (erythropoietin) and 2007 (fenoterol) to establish the safety and efficacy of both agents in humans.
- *Continue to study the effects of obesity and sarcopenia on health outcomes.* The Health, Aging, and Body Composition (Health ABC) Study is an ongoing study of body composition and weight-related health conditions. Clinical examinations ended in 2007, and NIA has initiated five years of follow-up for physical and cognitive function, selected disease endpoints (fracture, heart disease, cancer, and stroke), cause-of-death assessment, and maintenance of the biorepository.

- *Continue to study the driving factors behind persistent black-white health disparities in overall longevity, cardiovascular disease, and cerebrovascular disease.* NIA is in the midst of data collection for its ground-breaking Healthy Aging in Neighborhoods of Diversity Across the Life Span (HANDLS) study. HANDLS is a community-based, epidemiological study evaluating health disparities in socioeconomically diverse African American and white populations located in Baltimore, Maryland. To date, the study has recruited half of the baseline cohort, so most research remains in a preliminary status with more complete analyses to be performed once the sample population is complete. However, several preliminary and ongoing analyses have produced interesting findings that support the value of this cohort as a unique resource. This 20-year research study, which began in 2004, will continue recruitment and data analysis during FY 2009.
- *Identify genes associated with age-related changes to health and function.* The aging process is governed by a range of biological pathways that have diverse effects across body systems and are not limited to specific diseases. Identifying gene variants associated with early disease onset, rates or aspects of age-related changes would provide vital insights into the aging process in humans and open up new areas for prevention, treatment, and prognostic testing. Ongoing studies include the SardiNIA Project, which is searching for genes associated with nearly 100 traits in a small, genetically homogeneous population; and the Age, Gene/Environment Susceptibility (AGES) Study, which is exploring genetic susceptibility and gene/environment interactions as these contribute to various health outcomes in old age. The AGES Study recently completed its baseline assessment of nearly 6,000 people and plans a five-year follow up that will permit one of most comprehensive descriptions of age-related changes in structure and function in multiple organ systems in an older population.

Program Portrait:	Longitudinal Studies of Aging
FY 2008 level:	\$ 60,800,000
FY 2009 level:	\$ <u>60,900,000</u>
Change:	\$ 100,000

The NIA supports longitudinal studies within both its intramural and extramural programs. These studies, in which data is collected repeatedly in groups of people over a period of months or years, can provide unique insights into the physiologic, health, economic, and other changes seen in populations over time. Data from longitudinal studies can be used to generate and test hypotheses about long-term effects of health exposures, factors affecting onset and progression of disease with advancing age, and protective factors that contribute to exceptionally healthy aging.

NIA supports America's longest-running scientific study of human aging, the Baltimore Longitudinal Study of Aging (BLSA). Established in 1958, the BLSA has provided a wealth of information on the physical consequences of aging, as well as how to sort out changes due to aging from those due to disease, genetic makeup, environmental or

lifestyle factors, or other causes. NIA is now planning to initiate the BLSA Elite Aging Study of men and women who have already achieved substantial longevity (85 years and older) and are still free of major diseases and disability. We anticipate that this study will provide critical information on the biological mechanisms that allow some people to substantially delay or even avoid age-related sickness and functional decline.

Another major NIA-supported longitudinal study, the National Long Term Care Study (NLTCS), fielded from 1982 to 2005, has been one of the leading resources for studying changes in health and functional status and for tracking health expenditures, Medicare service use, and the availability of personal, family and community resources for caregiving. No additional waves of data collection are currently planned for the NLTCS; however, in light of the importance of the kind of data generated by this study as a resource for program planning and policy development, the NIA issued a request for grant applications in November 2007 for proposals to design and conduct a longitudinal, nationally-representative survey of disability trends and dynamics among the U.S. older population. Work will begin under this RFA in September 2008.

In recent years, a new generation of NIA-supported longitudinal studies has emerged. These new studies build on the ideas and hypotheses generated in earlier studies and therefore tend to focus on targeted specific aspects of aging and the aging process. For example, Health ABC is a study of age-associated changes in body composition and their effect on health and functional status in late life; the Women's Health and Aging Study deals with risk factors for disability and disability progression in older women who are already impaired; investigators on the InCHIANTI study are collecting information on biomarkers of aging and are identifying factors affecting the development of mobility disability in late life; and the Health and Retirement Study focuses on the economic status of a cross section of the aging population in the United States. Other ongoing NIA-supported longitudinal studies include surveys focused on women's health (for example, the Study of Women's Health Across the Nation), cognitive health (e.g., the Nun Study), economic behavior and social and psychological measures (the Panel Study on Income Dynamics), and cardiovascular health (such as the Bogalusa Study).

Research Management and Support

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 1,940 research project grants and centers, as well as more than 500 full-time training positions and 100 research and support contracts.

Budget Policy: The 2009 budget estimate for NIA's Research Management and Support is \$40,214,000, an increase of \$594,000 or 1.5 percent over the FY 2008 level

of \$39,620,000. Additional funds will be used to partially offset the costs associated with pay raises and other increases.

Roadmap Initiatives

The NIA participates in the support of the following Roadmap initiatives funded through the NIH Common Fund:

- Interdisciplinary Research Consortium
- Using Metabolomics to Investigate Biological Pathways and Networks
- Supplements for Methodological Innovations – Behavioral and Social Science

NATIONAL INSTITUTES OF HEALTH
National Institute on Aging
Budget Authority by Object

	FY 2008 Enacted	FY 2009 Estimate	Increase or Decrease
Total compensable workyears:			
Full-time employment	392	395	3
Full-time equivalent of overtime and holiday hours	1	1	0
Average ES salary	\$174,654	\$179,719	\$5,065
Average GM/GS grade	11.5	11.5	0.0
Average GM/GS salary	\$84,278	\$86,722	\$2,444
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$99,263	\$102,142	\$2,879
Average salary of ungraded positions	114,037	117,344	3,307
OBJECT CLASSES	FY 2008 Estimate	FY 2009 Estimate	Increase or Decrease
Personnel Compensation:			
11.1 Full-time permanent	\$26,937,000	\$28,001,000	\$1,064,000
11.3 Other than full-time permanent	10,559,000	10,976,000	417,000
11.5 Other personnel compensation	1,315,000	1,367,000	52,000
11.7 Military personnel	539,000	560,000	21,000
11.8 Special personnel services payments	8,941,000	8,911,000	(30,000)
Total, Personnel Compensation	48,291,000	49,815,000	1,524,000
12.0 Personnel benefits	11,139,000	11,579,000	440,000
12.2 Military personnel benefits	333,000	346,000	13,000
13.0 Benefits for former personnel	0	0	0
Subtotal, Pay Costs	59,763,000	61,740,000	1,977,000
21.0 Travel and transportation of persons	1,600,000	1,616,000	16,000
22.0 Transportation of things	285,000	289,000	4,000
23.1 Rental payments to GSA	0	0	0
23.2 Rental payments to others	0	0	0
23.3 Communications, utilities and miscellaneous charges	963,000	974,000	11,000
24.0 Printing and reproduction	224,000	226,000	2,000
25.1 Consulting services	1,100,000	1,111,000	11,000
25.2 Other services	7,735,000	7,812,000	77,000
25.3 Purchase of goods and services from government accounts	76,925,000	76,925,000	0
25.4 Operation and maintenance of facilities	992,000	992,000	0
25.5 Research and development contracts	50,078,000	50,078,000	0
25.6 Medical care	542,000	548,000	6,000
25.7 Operation and maintenance of equipment	3,040,000	3,070,000	30,000
25.8 Subsistence and support of persons	0	0	0
25.0 Subtotal, Other Contractual Services	140,412,000	140,536,000	124,000
26.0 Supplies and materials	10,300,000	10,341,000	41,000
31.0 Equipment	3,870,000	3,901,000	31,000
32.0 Land and structures	0	0	0
33.0 Investments and loans	0	0	0
41.0 Grants, subsidies and contributions	829,825,000	828,635,000	(1,190,000)
42.0 Insurance claims and indemnities	0	0	0
43.0 Interest and dividends	18,000	20,000	2,000
44.0 Refunds	0	0	0
Subtotal, Non-Pay Costs	987,497,000	986,538,000	(959,000)
Total Budget Authority by Object	1,047,260,000	1,048,278,000	1,018,000

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

Salaries and Expenses

OBJECT CLASSES	FY 2008 Enacted	FY 2009 Estimate	Increase or Decrease
Personnel Compensation:			
Full-time permanent (11.1)	\$26,937,000	\$28,001,000	\$1,064,000
Other than full-time permanent (11.3)	10,559,000	10,976,000	417,000
Other personnel compensation (11.5)	1,315,000	1,367,000	52,000
Military personnel (11.7)	539,000	560,000	21,000
Special personnel services payments (11.8)	8,941,000	8,911,000	(30,000)
Total Personnel Compensation (11.9)	48,291,000	49,815,000	1,524,000
Civilian personnel benefits (12.1)	11,139,000	11,579,000	440,000
Military personnel benefits (12.2)	333,000	346,000	13,000
Benefits to former personnel (13.0)	0	0	0
Subtotal, Pay Costs	59,763,000	61,740,000	1,977,000
Travel (21.0)	1,600,000	1,616,000	16,000
Transportation of things (22.0)	285,000	289,000	4,000
Rental payments to others (23.2)	0	0	0
Communications, utilities and miscellaneous charges (23.3)	963,000	974,000	11,000
Printing and reproduction (24.0)	224,000	226,000	2,000
Other Contractual Services:			
Advisory and assistance services (25.1)	224,000	226,000	2,000
Other services (25.2)	7,735,000	7,812,000	77,000
Purchases from government accounts (25.3)	45,163,000	45,163,000	0
Operation and maintenance of facilities (25.4)	992,000	992,000	0
Operation and maintenance of equipment (25.5)	3,040,000	3,070,000	30,000
Subsistence and support of persons (25.8)	0	0	0
Subtotal Other Contractual Services	57,154,000	57,263,000	109,000
Supplies and materials (26.0)	10,297,000	10,338,000	41,000
Subtotal, Non-Pay Costs	70,523,000	70,706,000	183,000
Total, Administrative Costs	130,286,000	132,446,000	2,160,000

**NATIONAL INSTITUTES OF HEALTH
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		Authorizing Legislation				FY 2009
PHS Act/ Other Citation	U.S. Code Citation	2007 Amount Authorized	FY 2008 Enacted	2008 Amount Authorized	Budget Estimate	
Research and Investigation	Section 301	Indefinite	\$1,047,260,000	Indefinite	\$1,048,278,000	
National Institute on Aging	Section 402(a)	Indefinite		Indefinite		
Total, Budget Authority			1,047,260,000		1,048,278,000	

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

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation <u>1/</u>
2000	612,599,000 <u>2/</u>	651,665,000	680,332,000	690,156,000
Rescission				-3,667,000
2001	721,651,000 <u>2/</u>	790,299,000	794,625,000	786,039,000
Rescission				-285,000
2002	879,961,000 <u>2/</u>	873,186,000	909,174,000	893,443,000
Rescission				-313,000
2003	958,155,000	958,155,000	1,000,099,000	1,000,099,000
Rescission				-6,501,000
2004	994,411,000	994,411,000	1,031,411,000	1,024,598,000
Rescission				-6,557,000
2005	1,055,666,000	1,055,666,000	1,094,500,000	1,060,666,000
Rescission				-8,676,000
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
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/ Reflects enacted supplementals, rescissions, and reappropriations.

2/ Excludes funds for HIV/AIDS research activities consolidated in the NIH Office of AIDS Research.

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

Details of Full-Time Equivalent Employment (FTEs)

OFFICE/DIVISION	FY 2007 Actual	FY 2008 Enacted	FY 2009 Estimate
Office of the Director	25	25	25
Intramural Research Program	247	252	254
Office of Administrative Management	31	32	33
Office of Extramural Affairs	27	27	27
Biology of Aging Program	11	14	14
Geriatrics & Clinical Gerontology Program	13	13	13
Behavioral & Social Research Program	12	12	12
Neuroscience & Neuropsychology of Aging Program	17	17	17
Total	383	392	395
FTEs supported by funds from Cooperative Research and Development Agreements	(0)	(0)	(0)
FISCAL YEAR	Average GM/GS Grade		
2005	10.9		
2006	11.5		
2007	11.4		
2008	11.5		
2009	11.5		

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

Detail of Positions

GRADE	FY 2007 Actual	FY 2008 Enacted	FY 2009 Estimate
Total, ES Positions	3	3	3
Total, ES Salary	501,448	523,963	539,157
GM/GS-15	34	34	34
GM/GS-14	26	26	26
GM/GS-13	39	39	39
GS-12	69	69	70
GS-11	35	35	36
GS-10	1	1	1
GS-9	33	35	35
GS-8	9	9	9
GS-7	25	25	25
GS-6	5	5	5
GS-5	2	2	2
GS-4	2	2	2
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	280	282	284
Grades established by Act of July 1, 1944 (42 U.S.C. 207):			
Assistant Surgeon General	0	0	0
Director Grade	4	4	4
Senior Grade	0	0	0
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	4	4	4
Ungraded	114	114	114
Total permanent positions	308	310	311
Total positions, end of year	401	401	403
Total full-time equivalent (FTE) employment, end of year	383	392	395
Average ES salary	167,149	174,654	179,719
Average GM/GS grade	11.5	11.5	11.5
Average GM/GS salary	80,657	84,278	86,722

**NATIONAL INSTITUTES OF HEALTH
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New Positions Requested

	FY 2009		
	Grade	Number	Annual Salary
Health Scientist Administrator	GS 13	1	\$94,025
Investigator	GS 13	2	188,050
Total Requested		3	