

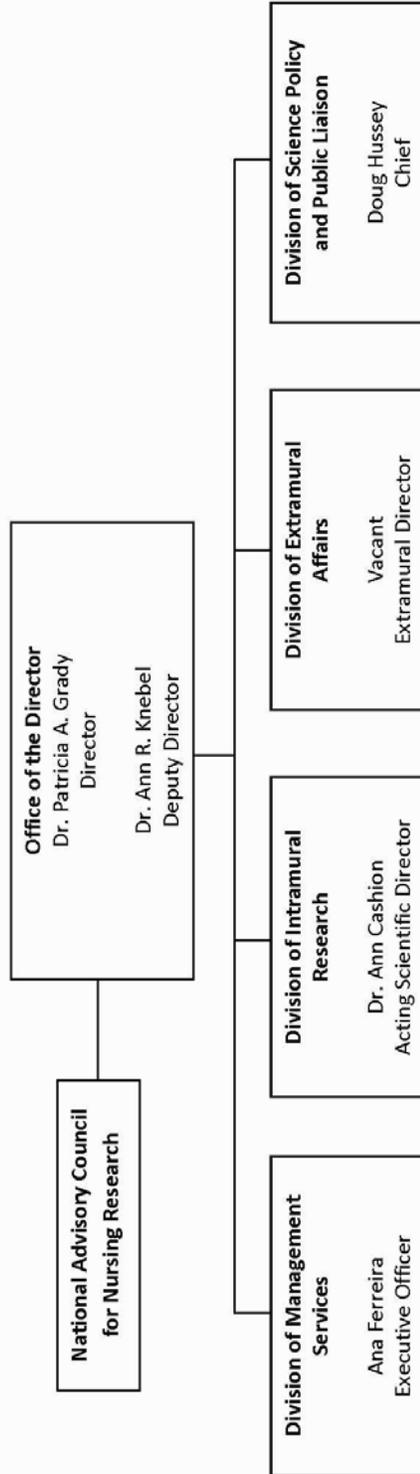
DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of Nursing Research (NINR)

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**National Institutes of Health
National Institute of Nursing Research
Organizational Chart**



NATIONAL INSTITUTES OF HEALTH

National Institute of Nursing Research

*For carrying out section 301 and title IV of the PHS Act with respect to nursing research,
\$146,244,000.*

NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research

Amounts Available for Obligation ¹
(Dollars in Thousands)

Source of Funding	FY 2012 Actual	FY 2013 CR	FY 2014 PB
Appropriation	145,043	145,655	146,244
Rescission	(274)	0	0
Subtotal, adjusted appropriation	144,769	145,655	146,244
Secretary's Transfer for Alzheimer's disease (AD)	(95)	0	0
Secretary's Transfer for AIDS authorized by PL 112-74, Section 206	(41)	0	0
Comparative Transfers to NLM for NCBI and Public Access	(133)	(171)	0
Subtotal, adjusted budget authority	144,500	145,484	146,244
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	144,500	145,484	146,244
Unobligated balance lapsing	(1)	0	0
Total obligations	144,499	145,484	146,244

¹ Excludes the following amounts for reimbursable activities carried out by this account:
FY 2012 - \$53 FY 2013 - \$100 FY 2014 - \$100

NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research
Budget Mechanism - Total ¹
(Dollars in Thousands)

MECHANISM	FY 2012 Actual		FY 2013 CR		FY 2014 PB		Change vs. FY 2012	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Grants								
<u>Research Projects</u>								
Noncompeting	158	\$67,911	168	\$70,775	182	\$75,832	24	\$7,921
Administrative Supplements	(1)	57	(2)	269	(2)	192	(1)	135
Competing:								
Renewal	2	1,225	3	1,429	3	1,429	1	204
New	79	29,202	69	25,593	55	20,340	-24	-8,862
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	81	\$30,427	72	\$27,022	58	\$21,769	-23	-\$8,658
Subtotal, RPGs	239	\$98,396	240	\$98,066	240	\$97,793	1	-\$603
SBIR/STTR	12	3,448	15	4,581	16	4,819	4	1,371
Research Project Grants	251	\$101,843	255	\$102,647	256	\$102,612	5	\$769
<u>Research Centers</u>								
Specialized/Comprehensive	10	4,255	10	4,255	10	4,255	0	0
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative Medicine	0	0	0	0	0	0	0	0
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	10	\$4,255	10	\$4,255	10	\$4,255	0	\$0
<u>Other Research</u>								
Research Careers	30	3,040	30	3,040	30	3,040	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	1	240	1	247	1	247	0	7
Other Research	31	\$3,280	31	\$3,287	31	\$3,287	0	\$7
Total Research Grants	292	\$109,378	296	\$110,189	297	\$110,154	5	\$776
<u>Ruth L. Kirschstein Training Awards</u>	<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>	
Individual	71	2,465	71	2,465	70	2,465	-1	0
Institutional	134	6,451	134	6,451	131	6,451	-3	0
Total Research Training	205	\$8,916	205	\$8,916	201	\$8,916	-4	\$0
Research & Development Contracts	0	4,095	0	4,267	0	5,062	0	967
<i>SBIR/STTR (non-add)</i>	(0)	(7)	(0)	(7)	(0)	(7)	(0)	-(0)
	<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>		<u>FTEs</u>	
Intramural Research	19	7,784	18	7,784	18	7,784	-1	0
Research Management and Support	65	14,328	71	14,328	71	14,328	6	0
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, NINR	84	\$144,500	89	\$145,484	89	\$146,244	5	\$1,744

¹ All items in italics and brackets are "non-adds."

Major Changes in the Fiscal Year 2014 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 mechanism and activity detail and these highlights will not sum to the total change for the FY 2014 budget request for NINR, which is \$1.7 million greater than the FY 2012 Actual level, for a total of \$146.2 million.

Research Project Grants (RPGs: +\$0.769 million; total \$102.612 million): NINR will continue to support 58 competing RPG awards totaling \$21.769 million in FY 2014, a decrease of 23 awards from FY 2012. About 182 noncompeting RPG awards totaling \$75.832 million also will be made in FY 2014, an increase of 24 awards from FY 2012. NIH budget policy for RPGs in FY 2014, continues FY 2012 policy of eliminating inflationary increases for future year commitments and maintaining average cost of competing RPGs. However adjustments for special needs (such as equipment and added personnel) will continue to be accommodated.

NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research
Summary of Changes
(Dollars in Thousands)

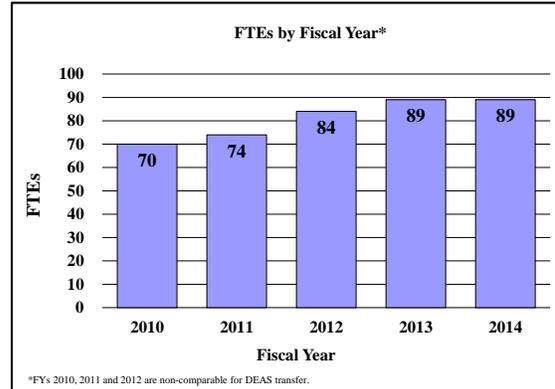
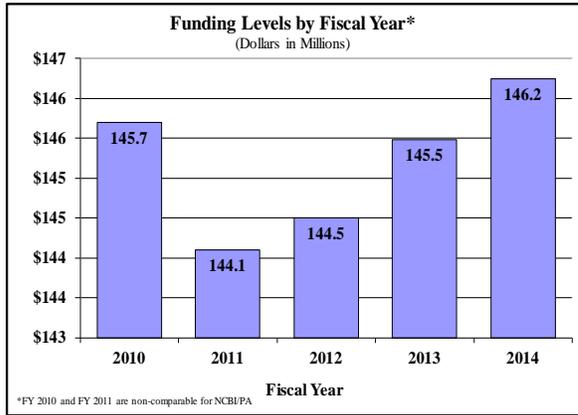
FY 2012 Actual				\$144,500
FY 2014 President's Budget				\$146,244
Net change				\$1,744
	2014		Change from FY 2012	
	President's Budget			
CHANGES	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:				
1. Intramural Research:				
a. Annualization of March 2013 pay increase & benefits		\$2,699		\$8
b. January FY 2014 pay increase & benefits		2,699		20
c. One more day of pay		2,699		10
d. Differences attributable to change in FTE		2,699		0
e. Payment for centrally furnished services		1,206		23
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		3,879		8
Subtotal				\$68
2. Research Management and Support:				
a. Annualization of March 2013 pay increase & benefits		\$9,978		\$26
b. January FY 2014 pay increase & benefits		9,978		74
c. One more day of pay		9,978		38
d. Differences attributable to change in FTE		9,978		0
e. Payment for centrally furnished services		1,341		24
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		3,009		1
Subtotal				\$163
Subtotal, Built-in				\$231

**NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research**

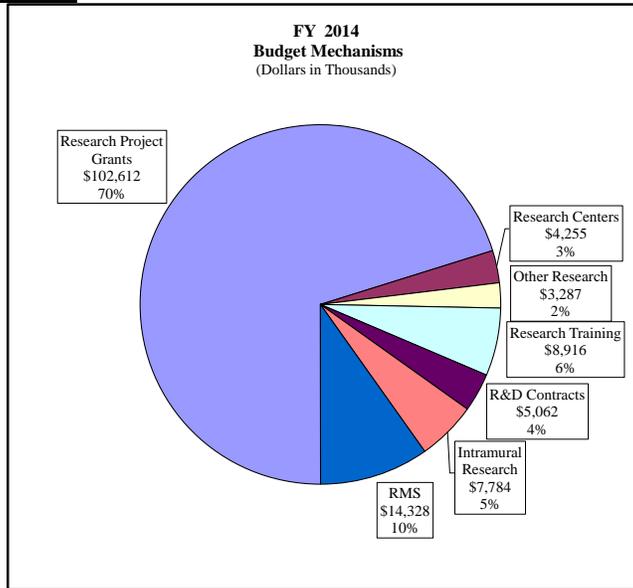
Summary of Changes--continued

CHANGES	2014		Change from FY 2012	
	President's Budget			
	No.	Amount	No.	Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	182	\$76,024	24	\$8,056
b. Competing	58	21,769	-23	-8,658
c. SBIR/STTR	16	4,819	4	1,371
Total	256	\$102,612	5	\$769
2. Research Centers	10	\$4,255	0	\$0
3. Other Research	31	3,287	0	7
4. Research Training	201	8,916	-4	0
5. Research and development contracts	0	5,062	0	967
Subtotal, Extramural		\$124,132		\$1,743
6. Intramural Research	<u>FTEs</u> 18	\$7,784	<u>FTEs</u> -1	-\$68
7. Research Management and Support	71	14,328	6	-163
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, program	89	\$146,244	5	\$1,512
Total changes				\$1,744

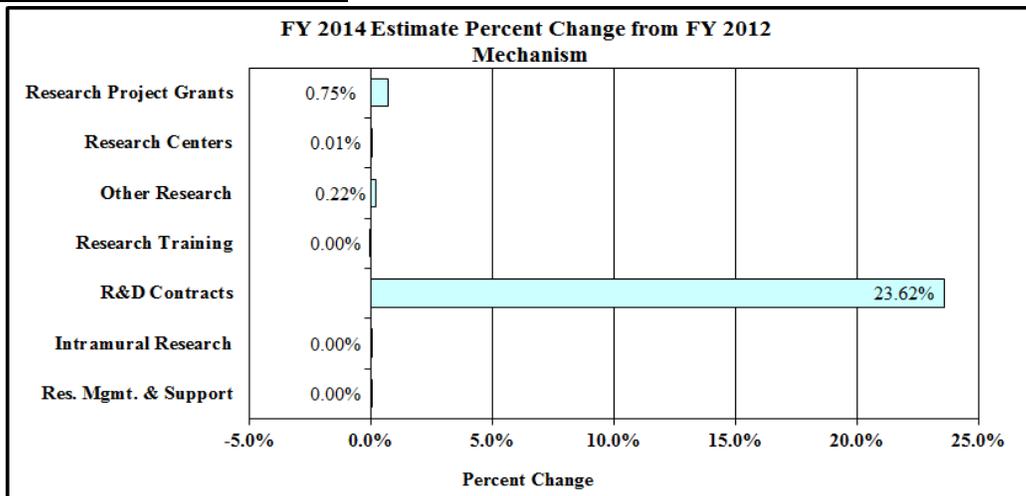
History of Budget Authority and FTEs:



Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research
Budget Authority by Activity
(Dollars in Thousands) ^{1,2}

	FY 2012 Actual		FY 2013 CR		FY 2014 PB	
	<u>FTEs</u>	<u>Amount</u>	<u>FTEs</u>	<u>Amount</u>	<u>FTEs</u>	<u>Amount</u>
<u>Extramural Research</u>						
<u>Detail:</u>						
Quality of Life		\$42,088		\$42,425		\$42,687
Health Promotion and Disease Prevention		42,291		42,631		42,893
Investing in Nurse Scientists		13,400		13,508		13,591
Innovation		8,979		9,052		9,108
Palliative and End-of-Life Care		15,630		15,756		15,853
Subtotal, Extramural		\$122,388		\$123,372		\$124,132
Intramural Research	19	\$7,784	18	\$7,784	18	\$7,784
Research Management & Support	65	\$14,328	71	\$14,328	71	\$14,328
TOTAL	84	\$144,500	89	\$145,484	89	\$146,244

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

² Includes Transfers and Comparable Adjustments as detailed in the "Amounts Available for Obligation" table.

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2013 Amount Authorized	FY 2013 CR	2014 Amount Authorized	FY 2014 PB
Research and Investigation	Section 301	42§241	Indefinite	} \$145,484,000	Indefinite	} \$146,244,000
National Institute of Nursing Research	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority					\$145,484,000	\$146,244,000

**NATIONAL INSTITUTES OF HEALTH
National Institute of Nursing Research**

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2005	\$139,198,000	\$139,198,000	\$140,200,000	\$138,198,000
Rescission				(\$1,126,000)
2006	\$138,729,000	\$138,729,000	\$142,549,000	\$138,729,000
Rescission				(\$1,387,000)
2007	\$137,342,000	\$136,550,000	\$137,848,000	\$137,404,000
Rescission				-
2008	\$137,800,000	\$139,527,000	\$140,456,000	\$139,920,000
Rescission				(\$2,244,000)
2009	\$137,609,000	\$142,336,000	\$141,439,000	\$141,879,000
Rescission				-
Supplemental				\$731,000
2010	\$143,749,000	\$146,945,000	\$144,262,000	\$145,660,000
Rescission				-
2011	\$150,198,000	-	\$149,963,000	\$145,660,000
Rescission				(\$1,278,982)
2012	\$148,114,000	\$148,114,000	\$142,755,000	\$145,043,000
Rescission				(\$274,131)
2013	\$144,153,000	-	\$144,590,000	-
Rescission				-
2014	\$146,244,000	-	-	-

Justification of Budget Request

National Institute of Nursing Research

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

Budget Authority:

	FY 2012 Actual	FY 2013 CR	FY 2014 President's Budget	FY 2014 + / FY 2012
BA	\$144,500,000	\$145,484,000	\$146,244,000	+\$1,744,000
FTE	84	89	89	+5

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

Director's Overview

The National Institute of Nursing Research (NINR) supports clinical and basic research to develop the scientific foundation for clinical practice, prevent disease and disability, manage and eliminate symptoms, enhance palliative and end-of-life care, improve innovation, and train the next generation of scientists. In doing so, the Institute's scientific focus bridges multiple disciplines; uniting the biological and behavioral sciences to foster and improve the health of individuals, families, and communities across diverse populations and the lifespan in a variety of clinical settings. NINR research seeks to advance the science of health by:

- Enhancing health promotion and disease prevention in diverse groups through culturally-appropriate interventions designed to encourage health equity and eliminate health disparities;
- Engaging individuals as active participants in their own health and improving symptom management in those with acute and chronic illness;
- Improving quality of life for patients with advanced illness through evidence-based palliative and end-of-life care;
- Developing new technologies and innovative programs to improve health and reduce healthcare costs; and,
- Preparing the next generation of nurse scientists and clinicians to address current and future health challenges and contribute to an innovative, multidisciplinary, and diverse scientific workforce.

To address the complex healthcare challenges faced in the U.S., NINR's research programs incorporate the use of interdisciplinary approaches designed to promote scientific exploration and generate improved health outcomes and services. These approaches include: basic science-driven clinical intervention studies; interdisciplinary and translational research strategies;

analyses of cost, outcomes, and quality of care; and studies to assess and enhance the effectiveness of the nursing workforce. NINR also continues to uphold its strong commitment to addressing the health needs of minority and underserved populations, promote health equity, and build a diverse scientific workforce.

In FY 2014, NINR plans to build on and continue a range of activities at the intersection of the Institute's mission and the research themes established by the NIH Director. NINR will maintain its support of basic science that will lead to tomorrow's research breakthroughs by advancing the knowledge of underlying biological systems and mechanisms. These efforts will include research into the molecular and genetic correlates of pervasive symptoms, including pain and fatigue, in chronic conditions such as cancer. For instance, NINR-supported scientists are investigating the molecular mechanisms underlying the induction of inflammatory proteins by chemotherapy drugs, testing potential novel therapeutic treatments, and evaluating the assessment of pain in cancer patients. A recent NINR-supported study examining the genetic and molecular mechanisms that regulate muscle strength uncovered a new nerve signaling pathway that may represent a novel target for interventions to improve muscle function across diseases characterized by deficits in muscular function, such as muscular dystrophy, which could improve patient mobility and other normal activities of daily living.

To advance translational science, NINR also will continue to focus on designing and validating interventions for preventive care, health promotion, and self-management of multiple chronic conditions; these interventions can be translated into clinical and community health practices and facilitate the transition to new models of healthcare. One current study is aimed at developing culturally-appropriate physical activity interventions for older Latinos at-risk for disability and Alzheimer's disease, while another has examined the efficacy and costs associated with a peer-led self-management program for adolescents with asthma. In addition, NINR recently funded several research centers focused on managing and treating adverse symptoms such as pain and fatigue, with the goal of establishing a research infrastructure and workforce that can facilitate the translation of symptom-related science into the clinical setting.

Since its establishment, a fundamental element of NINR's mission has been the development of a robust and creative cadre of nurse investigators, and this commitment will continue in FY 2014. In order to develop a scientific workforce that is innovative, multidisciplinary, and diverse, NINR will continue to support and train nurse scientists across career levels through a number of focused scientific training activities. For example, NINR will continue to devote significant support to extramural individual and institutional pre- and postdoctoral research fellowships, as well as career development awards. NINR also actively engages in developing the next generation of researchers through activities in its Intramural Research Program such as the NINR Summer Genetics Institute, the Graduate Partnerships Program, the NINR Scholars Training for the Advancement of Research (STAR) program, and the Symptom Methodologies Boot Camp. NINR's training efforts also promote earlier entry of nurses into research training programs and recognize the importance of attracting, training, and retaining a diverse cohort of early career scientists to meet existing and impending healthcare challenges. NINR training programs also seek to develop the nursing school faculty of the future, an essential component of strengthening the nursing workforce.

In the face of the health and societal challenges the Nation confronts today, NINR sees a tremendous opportunity to support science that will have a significant impact on the health of the Nation. In FY 2014, NINR will support new and ongoing initiatives to advance nursing science that will address the challenges and areas of opportunity identified in NINR's strategic plan, *Bringing Science to Life*. Among other mission-critical priorities, these efforts will focus on key topics such as the self-management of tertiary prevention in chronic conditions and the development of new interventions to improve palliative and end-of-life care.

Budget Policy: Investigator-initiated research projects, support for new investigators, research training, and career development continue to be the Institute's highest priorities. NINR will continue FY 2012 NIH Budget policy for RPGs in FY 2014, which does not include an inflationary increase in noncompeting awards and maintains the average cost for competing RPGs at the FY 2012 level or lower. Overall, NINR will maintain a strategic balance between solicitations issued to the extramural community in high-priority areas of research, and funding made available to support investigator-initiated projects. Scientific reviews, with recommendations from the National Advisory Council for Nursing Research, inform the level of recommended support for all research applications. NINR will continue to support new and early stage investigators. Intramural Research and Research Management and Support remains at the FY 2012 Actual level.

The Ruth L. Kirschstein NRSA budget reflects a stipend increase to \$42,000 for entry level postdoctoral trainees and fellows along with 4% increases for each subsequent level of experience. This is consistent with the recommendations of the National Academy of Sciences and will build on the two percent increase in stipend levels for FY 2012. Stipend levels were largely flat for several years, and the requested increase will help to sustain the development of a highly qualified biomedical research workforce.

Funds are included in R&D contracts to support trans-NIH initiatives, such as the Basic Behavioral and Social Sciences Opportunity Network (OppNet).

Program Descriptions and Accomplishments

Investing in Advancing the Quality of Life: Symptom Management: NINR's research program to improve quality of life focuses on reducing the burdens of chronic and acute illness across both the spectrum of human diseases and the lifespan. This program supports clinical and basic research to: enhance the individual's role in disease management; reduce the burden of debilitating symptoms; and improve health outcomes for individuals and their formal and informal caregivers. A particular emphasis is placed on symptom management – seeking to improve knowledge of biological, genomic, and psychosocial mechanisms of pervasive symptoms such as pain, fatigue, and impaired sleep. The program also supports research to design effective and translatable interventions to help providers, individuals, and caregivers better manage the multiple, often complex, symptoms of acute and chronic illness. Through this program, NINR recently solicited applications for Centers of Excellence in symptom science. Under this initiative, the Institute is currently supporting five new research centers exploring pain, sleep disturbance, and the effects of chronic illness on neurocognitive functioning. Other recent studies under the Quality of Life: Symptom Management program include projects to

explore: how genomic test results and their presentation to the patient impact symptom management; the link between changes in symptoms and biomarkers to improve decision-making and health outcomes in heart failure patients with a ventricular assist device; and weight management intervention programs in adults with multiple sclerosis and rheumatoid arthritis to alleviate symptoms, slow disease progression, and prevent secondary conditions. Finally, a study supported under this program found an association between an anti-inflammatory protein and a symptom cluster of “sickness behavior,” including pain, fatigue, sleep disturbance, and depression.

Budget Policy: The FY 2014 President’s Budget estimate for this program is \$42.688 million, an increase of \$0.600 million, or 1.4 percent above the FY 2012 Actual level. In FY 2014, NINR plans to continue to address the many challenges and opportunities that exist in the areas of self-management, symptom management, and caregiving as part of a strategically balanced research portfolio.

Program Portrait: Alzheimer’s Disease: Improving Quality of Life for Patients and Caregivers

FY 2012 Level: \$3.8 million

FY 2014 Level: \$3.8 million

Change: \$0.0 million

Approximately 5.4 million Americans currently have Alzheimer’s disease (AD), with women constituting nearly two-thirds of that population. Due to longer life expectancies and the large aging population, 13.2 million Americans over 65 are projected to have AD by 2050. Estimates suggest that payments for AD care totaled over \$200 billion in 2012 alone.¹ Because of the enormous burden of AD on both patients with the disease, as well as their formal and informal caregivers, NINR has long made a focus on AD research part of its scientific program. This effort was increased in FY 2012 through the release of three new funding initiatives focused on AD. These Requests for Applications solicited applications to: assist informal caregivers in assessing and managing symptoms in individuals with AD; address the needs of AD caregivers in the context of sociodemographic factors; and explore the early detection and prevention of mild cognitive impairment. Awards have been made under these programs, and NINR looks forward to the results of this research over the next several years. Currently, NINR-supported scientists are evaluating the efficacy of a sensory-based intervention to improve behavioral management in AD patients; developing a toolkit for caregivers to identify, manage, and notify healthcare providers of worsening AD symptoms; and identifying the relationship between nighttime agitation, sleep disturbances, and urinary incontinence in AD patients. In FY 2014, NINR will continue its efforts toward improving the quality of life of those with Alzheimer’s disease, as well as their informal caregivers, and build upon recent promising advances in the understanding, prevention, and treatment of AD, consistent with the goals set forth in the HHS *National Plan to Address Alzheimer’s Disease*.

Investing in Health Promotion and Disease Prevention: The Investing in Health Promotion and Disease Prevention program investigates the key biological, behavioral, and social factors that promote long-term health and healthy behaviors and prevent the development of disease across health conditions, settings, and the lifespan. Research efforts under this program, often focusing on minority and/or underserved populations, involve: understanding the multiple causes of illnesses; assessing the social and physical behaviors that lead to healthy lifestyle choices; and designing personalized, evidence-based health promotion interventions that are culturally appropriate. For example, a current study of post-stroke care for African American men focuses on self-management in order to improve health outcomes and decrease future risk. By

¹ *Alzheimer’s Association. 2012 Alzheimer’s Disease Facts and Figures. Alzheimer’s & Dementia 8 (2012).*

measuring behavioral, physiological, and biological alterations, another study aims to determine whether sleep disturbances during pregnancy increase the risk for gestational diabetes mellitus, potentially providing a new target for disease prevention and management. Other recent research projects include those determining: the best-practices required to prevent healthcare associated infections in nursing homes; the feasibility and acceptability of mobile HIV prevention interventions in teens; and appropriate physical activity interventions in older women and Latinos to improve health and decrease disease risk factors.

Budget Policy: The FY 2014 President's Budget estimate for this program is \$42.893 million, an increase of \$0.602 million, or 1.4 percent above the FY 2012 Actual level. In FY 2014, NINR plans to continue to address the many challenges and opportunities that exist in the areas of health promotion and disease prevention as part of a strategically balanced research portfolio.

Investing in Palliative and End-of-Life Care: The life expectancy of the American people has reached an historic high, but along with increased life expectancy comes an increase in the number of people living with, and dying from, long-term chronic illnesses. Individuals of all ages continue to face protracted courses of decline that require difficult decisions to be made to ensure appropriate intervention, maximize quality of life, and promote dignity of death. Under the NINR Palliative and End-of-Life Care program, researchers are applying interdisciplinary biological, behavioral, and social science strategies to advance understanding of the needs of individuals and their caregivers, and develop palliative care interventions to manage the symptoms of advanced illness. It also advances high-quality, evidence-based palliative care as a critical component of maintaining quality of life at any stage of illness, not solely at the end of life. Specific research topics and activities promoted under this program include: improving awareness and relief of pain, suffering, and distressing symptoms through effective palliative care; understanding and facilitating decision-making by patients, caregivers, and providers, including through the use of advance directives; and developing new investigators in the field. A current NINR-sponsored research project is studying family members' perception and the efficacy of strategies used by nurses at the end of life. Other NINR research includes evaluating and designing palliative care interventions for heart failure patients and demonstrating the efficacy of a highly integrated model of palliative care early in the cancer diagnosis process. NINR also continues to support a palliative care research cooperative, whose goal is to develop an enhanced evidence base for palliative care by bringing together experienced, multidisciplinary investigators from multiple institutions with the goal of facilitating innovative, clinically relevant palliative care research to inform both practice and health policy. In 2011, NINR, with support from partners across NIH, convened a research summit entitled "The Science of Compassion: Future Directions in End-of-Life and Palliative Care," which attracted nearly 1,000 registrants. As the lead NIH Institute on issues related to end-of-life research, NINR has used the scientific themes that emerged from the Summit as a guide for planning future activities in palliative and end-of-life care science.

Budget Policy: The FY 2014 President's Budget estimate for this program is \$15.853 million, an increase of \$0.223 million, or 1.4 percent above the FY 2012 Actual level. Given the enormous potential and great need for improving the quality of life for persons with life-limiting conditions and their caregivers, NINR plans to expand end-of-life research efforts in FY 2014 to build upon continuing accomplishments in this program area. The proposed level of funding will allow

NINR to support existing commitments and fund additional awards in this critical area of research, as part of a balanced program portfolio.

Investing in Innovation: Through the Investing in Innovation program, NINR promotes technological advancements that address a range of health care challenges and facilitate the delivery of real-time personalized information to individuals and families, health care providers, and communities. The Innovation program fosters the development of novel technologies and informatics-based solutions to assist individuals and providers in promoting health, preventing disease, managing symptoms, and engaging patients in their own health care. For example, NINR supported the development of a novel technology employing infrared sensors to monitor older adults' daily activities and alert healthcare providers of changes in the patient's health status, allowing for earlier detection of illness compared to traditional assessments. To advance diagnoses of stomach and GI tract diseases, another initiative is developing a pill-sized soft robotic capsule endoscope with remote position control functions capable of drug delivery. Other projects include designing and testing an automated tool using advanced sensing and pattern recognition technologies to assess pain severity in children, and developing a wireless personal medication compliance system with Bluetooth technology to monitor dosing and remind patients to take their medication, while relaying this information in real time to the patient's healthcare providers. NINR, through its Innovation program, also encourages new approaches to identify effective methodologies and strategies to link underserved populations with available health resources, provide health equity, and help resolve health disparities. The Innovation program also supports projects that utilize genomic technologies to advance knowledge of the cellular and molecular mechanisms of the symptoms associated with chronic illness. A recent NINR-supported project aims to develop a nanoparticle-mediated therapeutic delivery system to manage the pain response in patients experiencing chronic pain.

Budget Policy: The FY 2014 President's Budget estimate for this program is \$9.108 million, an increase of \$0.129 million, or 1.4 percent above the FY 2012 Actual level. In FY 2014, NINR plans to continue supporting research on the use and development of novel technologies that address current and future clinical care and patient management needs, and their incorporation into standard practice. This level of funding will allow NINR to cover current commitments and fund additional awards in this emerging area of research as part of a balanced portfolio.

Investing in Nurse Scientists: To develop a strong cohort of nurse scientists and contribute to an innovative, multidisciplinary, and diverse scientific workforce, the Investing in Nurse Scientists program emphasizes research training and career development. NINR supports nurse scientists throughout their career and promotes earlier entry of nurses into research training programs by providing individual and institutional pre- and postdoctoral research fellowships and career development awards, including awards to trainees from underrepresented backgrounds. For example, under the NIH K99/R00 Pathway to Independence (PI) program, in which NINR participates, promising postdoctoral scientists receive both mentored and independent research support for up to five years. A recent initiative, known as the Scholars Training for the Advancement of Research or STAR program, provides additional resources for institutions with NINR-funded training programs to support the "fast-track" training of outstanding students completing interdisciplinary nursing baccalaureate degrees who are interested in pursuing a PhD. Collectively, NINR training activities support the development of

the nursing workforce by developing the nursing faculty needed to mentor individuals entering the field. This program also advances the NIH mission by expanding the scientific research workforce, in particular by supporting women and underserved populations in the early stages of their research careers.

Budget Policy: The FY 2014 President's Budget estimate for this program is \$13.591 million, an increase of \$0.191 million, or 1.4 percent above the FY 2012 Actual level. This proposed level of funding will allow NINR to cover its current commitments as well as allow new training grants to be awarded in FY 2014. In FY 2014, NINR plans to continue its commitment to developing the next generation of investigators and enhance overall research capacity in strategically important areas of research as part of a balanced program portfolio. These efforts will continue to include awards to encourage earlier entry into research careers and to expand the interdisciplinary backgrounds of new investigators.

Intramural Research Program: The Intramural Research Program (IRP) supports cutting-edge clinical and genomic research to better understand the underlying mechanisms of a variety of symptoms, their effect on patients, and how patients respond to interventions. Recent scientific efforts have focused on understanding the role of genetics in pain perception and other symptoms. For example, one study is investigating the physiologic and genetic causes of fatigue development in prostate cancer patients. NINR IRP scientists also are exploring gene expression as a tool to predict outcomes and identify therapeutic targets for treating traumatic brain injury. Another study examined the health-related quality of life in patients with HIV and liver disease. The IRP supports several research training opportunities as well. For example, under the NIH Graduate Partnerships Program (GPP), NINR supports pre-doctoral nursing students from NINR-supported training programs, allowing them to complete their dissertation research within the IRP. In 2012, an NINR intramural scientist was awarded one of the first positions under the prestigious Lasker Clinical Research Scholars Program. In addition, NINR continues to hold both the Summer Genetics Institute, which provides a molecular genetics foundation for nursing faculty and graduate students and develops and expands the basis for clinical practice in genetics among clinicians, as well as the Symptoms Methodologies Boot Camp, a one-week training course at NIH that focuses on applying state-of-the-art methods to study symptom management.

Budget Policy: The FY 2014 President's Budget estimate for this program remains at the FY 2012 Actual level of \$7.784 million. In FY 2014, this program will build on the recent accomplishments of the IRP, continuing to support innovative research to address the scientific challenges of understanding and managing adverse symptoms-or clusters of symptoms, along with environmental influences on individual health outcomes. This program will also continue to support important training and career development opportunities for innovative investigators.

Program Portrait: Advancing Symptoms Science through Genomic and Molecular Research

FY 2012 Level: \$10.6 million

FY 2014 Level: \$10.6 million

Change: \$0.0 million

The frontier of technology holds great promise for rapid advances in genomic and molecular research to improve health across the biomedical and behavioral sciences. NINR continues to support research programs that are developing and refining the application of genetic and genomic science to improve symptom risk assessment and identify potential interventions. Incorporating genetics methodology into research on symptom management has been a priority for the Institute for many years, given the NINR's ongoing strategic focus of expanding biobehavioral research. For example, since 2000 the NINR Intramural Research Program (IRP) has sponsored the NINR Summer Genetics Institute (SGI). This intensive summer training program provides graduate students and faculty with a foundation in molecular genetics to enhance their research and clinical practice. SGI graduates number more than 200, and are successfully building programs of research in genetics related to nursing; disseminating findings through publications; and integrating genetics content in nursing school curricula across the country. More recently, in 2010 NINR began offering one-week intensive summer training workshops in symptoms methodologies. These "Symptom Methodologies Boot Camps" cover topics relevant to symptoms such as pain, fatigue, and sleep, including topics such as measurement, treatments, and genetics, with the goal of increasing the research capability of graduate students and faculty. In the research community, NINR-supported investigators are conducting research to identify the genetic, biological, and psychosocial determinants of pain, fatigue, and other symptoms; with the goal of advancing clinical treatment, behavioral interventions, and assessment. Current examples include NINR-supported intramural and extramural research examining: the molecular-genetic mechanisms of cancer-related fatigue in patients receiving radiation therapy; how genetic profiles may influence functional recovery outcomes after traumatic brain injury; and a genomics-based approach to understanding clinical pain, including cancer treatment-related peripheral neuropathy. The continuing goals of the genomic and molecular research supported by NINR in FY 2014 are to improve the understanding of individual variability inherent in symptoms such as pain, fatigue, and stress, as well as to develop clinical interventions to alleviate these symptoms.

Research Management and Support: Research Management and Support (RMS) activities provide administrative, budgetary, logistical, and scientific support in reviewing, awarding, and monitoring research grants, training awards, and research and development contracts. The functions of RMS also encompass strategic planning, coordination, and evaluation of the Institute's programs, as well as communication and coordination with other federal agencies, Congress, and the public. The apparent increase in estimated FY 2014 FTE compared to the FY 2012 actual FTE usage level is due to the effect of transferring positions previously funded from a centralized support operation (Division of Extramural Activities Support) to individual ICs as of year-end 2012. As a result of the DEAS transfer, estimated salaries and benefits for FY 2014 are proportionately higher than those identified for FY 2012 and previous years.

Budget Policy: The FY 2014 President's Budget estimate for this program remains at the FY 2012 Actual level of \$14.328 million. In FY 2014, NINR plans to continue addressing the challenges and opportunities that exist in strategically managing a research portfolio that addresses areas of science critical to public health.

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Budget Authority by Object Class
(Dollars in Thousands)

	FY 2012 Actual	FY 2014 PB	Increase or Decrease
Total compensable workyears:			
Full-time employment	84	89	5
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary (in whole dollars)	\$0	\$0	\$0
Average GM/GS grade	12.2	12.2	0.0
Average GM/GS salary (in whole dollars)	\$96,095	\$96,095	\$0
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207) (in whole dollars)	\$0	\$0	\$0
Average salary of ungraded positions (in whole dollars)	\$0	\$0	\$0
OBJECT CLASSES	FY 2012 Actual	FY 2014 PB	Increase or Decrease
Personnel Compensation:			
11.1 Full-time permanent	\$6,420	\$7,174	\$754
11.3 Other than full-time permanent	1,811	1,900	89
11.5 Other personnel compensation	147	154	7
11.7 Military personnel	129	124	(5)
11.8 Special personnel services payments	554	534	(20)
Total, Personnel Compensation	\$9,062	\$9,886	\$824
12.0 Personnel benefits	\$2,476.66	\$2,721	\$244
12.2 Military personnel benefits	73	70	(3)
13.0 Benefits for former personnel	0	0	0
Subtotal, Pay Costs	\$11,611	\$12,677	\$1,066
21.0 Travel and transportation of persons	\$163.91	\$155	(\$9)
22.0 Transportation of things	50	45	(5)
23.1 Rental payments to GSA	0	0	0
23.2 Rental payments to others	48	43	(5)
23.3 Communications, utilities and miscellaneous charges	92	89	(3)
24.0 Printing and reproduction	4	4	0
25.1 Consulting services	105	94	(11)
25.2 Other services	1,552	880	(672)
25.3 Purchase of goods and services from government accounts	11,240	11,786	546
25.4 Operation and maintenance of facilities	18	16	(2)
25.5 Research and development contracts	42	142	100
25.6 Medical care	5	5	(0)
25.7 Operation and maintenance of equipment	191	187	(4)
25.8 Subsistence and support of persons	0	0	0
25.0 Subtotal, Other Contractual Services	\$13,153	\$13,110	(\$43)
26.0 Supplies and materials	\$470.02	\$470	(\$0)
31.0 Equipment	616	581	(35)
32.0 Land and structures	0	0	0
33.0 Investments and loans	0	0	0
41.0 Grants, subsidies and contributions	118,294	119,070	776
42.0 Insurance claims and indemnities	0	0	0
43.0 Interest and dividends	0	0	(0)
44.0 Refunds	0	0	0
Subtotal, Non-Pay Costs	\$132,889	\$133,567	\$678
Total Budget Authority by Object Class	\$144,500	\$146,244	\$1,744

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 2012 Actual	FY 2014 PB	Increase or Decrease
Personnel Compensation:			
Full-time permanent (11.1)	\$6,420	\$7,174	\$754
Other than full-time permanent (11.3)	1,811	1,900	89
Other personnel compensation (11.5)	147	154	7
Military personnel (11.7)	129	124	(5)
Special personnel services payments (11.8)	554	534	(20)
Total Personnel Compensation (11.9)	\$9,061	\$9,886	\$825
Civilian personnel benefits (12.1)	\$2,477	\$2,721	\$244
Military personnel benefits (12.2)	73	70	(3)
Benefits to former personnel (13.0)	0	0	0
Subtotal, Pay Costs	\$11,611	\$12,677	\$1,066
Travel (21.0)	\$164	\$155	(\$9)
Transportation of things (22.0)	50	45	(5)
Rental payments to others (23.2)	48	43	(5)
Communications, utilities and miscellaneous charges (23.3)	92	89	(3)
Printing and reproduction (24.0)	4	4	0
Other Contractual Services:			
Advisory and assistance services (25.1)	105	94	(11)
Other services (25.2)	1,552	880	(672)
Purchases from government accounts (25.3)	7,289	7,071	(218)
Operation and maintenance of facilities (25.4)	18	16	(2)
Operation and maintenance of equipment (25.7)	191	187	(4)
Subsistence and support of persons (25.8)	0	0	0
Subtotal Other Contractual Services	\$9,155	\$8,248	(\$907)
Supplies and materials (26.0)	\$460	\$460	\$0
Subtotal, Non-Pay Costs	\$9,973	\$9,044	(\$929)
Total, Administrative Costs	\$21,584	\$21,721	\$137

NATIONAL INSTITUTES OF HEALTH
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Details of Full-Time Equivalent Employment (FTEs)

OFFICE/DIVISION	FY 2012 Actual			FY 2013 CR			FY 2014 PB		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Office of the Director									
Direct:	6	-	6	6	-	6	6	-	6
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	6	-	6	6	-	6	6	-	6
Office of Extramural Activities									
Direct:	13	-	13	19	-	19	19	-	19
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	13	-	13	19	-	19	19	-	19
Office of Administrative Management									
Direct:	33	-	33	33	-	33	33	-	33
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	33	-	33	33	-	33	33	-	33
Division of Scientific Programs									
Direct:	13	-	13	13	-	13	13	-	13
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	13	-	13	13	-	13	13	-	13
Division of Intramural Research Program									
Direct:	17	2	18	16	2	18	16	2	18
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	16	2	18	16	2	18	16	2	18
Total	81	2	83	87	2	89	87	2	89
Includes FTEs whose payroll obligations are supported by the NIH Common Fund. FTEs supported by funds from Cooperative Research and Development Agreements.									
FISCAL YEAR									
Average GS Grade									
2010									
2011									
2012									
2013									
2014									

**NATIONAL INSTITUTES OF HEALTH
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Detail of Positions

GRADE	FY 2012 Actual	FY 2013 CR	FY 2014 PB
Total, ES Positions	0	0	0
Total, ES Salary	0	0	0
GM/GS-15	8	8	8
GM/GS-14	22	22	22
GM/GS-13	17	17	17
GS-12	10	10	10
GS-11	6	6	6
GS-10	0	0	0
GS-9	3	3	3
GS-8	3	3	3
GS-7	3	5	5
GS-6	0	0	0
GS-5	0	1	1
GS-4	1	1	1
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	73	76	76
Grades established by Act of July 1, 1944 (42 U.S.C. 207):			
Assistant Surgeon General	0	0	0
Director Grade	0	0	0
Senior Grade	0	0	0
Full Grade	1	1	1
Senior Assistant Grade	1	1	1
Assistant Grade	0	0	0
Subtotal	2	2	2
Ungraded	26	26	26
Total permanent positions	70	70	70
Total positions, end of year	101	104	104
Total full-time equiv (FTE) at YE	84	89	89
Average ES salary	0	0	0
Average GM/GS grade	12.2	12.2	12.2
Average GM/GS salary	96,095	96,095	96,095

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