

# NATIONAL INSTITUTES OF HEALTH



(dollars in millions)

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2013 +/- 2012</u>
<u>Institutes</u>				
National Cancer Institute .....	5,050	5,066	5,069	+3
National Heart, Lung and Blood Institute .....	3,065	3,075	3,076	+1
National Institute of Dental and Craniofacial Research .....	409	410	408	-2
Natl Inst. of Diabetes & Digestive & Kidney Diseases .....	1,939	1,945	1,942	-3
National Institute of Neurological Disorders and Stroke .....	1,619	1,624	1,625	-
National Institute of Allergy and Infectious Diseases .....	4,768	4,485	4,495	+10
National Institute of General Medical Sciences .....	2,368	2,427	2,379	-48
Eunice K. Shriver Natl Inst. of Child Health & Human Dev .....	1,316	1,320	1,321	+1
National Eye Institute .....	700	702	693	-9
National Institute of Environmental Health Sciences:				
Labor/HHS Appropriation .....	683	685	684	-1
Interior Appropriation .....	79	79	79	-
National Institute on Aging .....	1,099	1,102	1,103	+1
Natl Inst. of Arthritis & Musculoskeletal & Skin Diseases .....	533	535	536	-
Natl Inst. on Deafness and Communication Disorders .....	414	416	417	+2
National Institute of Mental Health .....	1,475	1,479	1,479	+1
National Institute on Drug Abuse .....	1,049	1,052	1,054	+2
National Institute on Alcohol Abuse and Alcoholism .....	458	459	457	-2
National Institute of Nursing Research .....	144	145	144	-
National Human Genome Research Institute .....	511	512	511	-1
Natl Institute of Biomedical Imaging and Bioengineering .....	345	338	337	-1
Natl Institute on Minority Health and Health Disparities .....	276	276	279	+3
Natl Center for Complementary and Alternative Medicine .....	127	128	128	-
National Center for Advancing Translational Sciences .....	554	575	639	+64
Fogarty International Center .....	69	70	70	-
National Library of Medicine .....	371	373	381	+8
Office of the Director .....	1,454	1,457	1,429	-28
Buildings and Facilities .....	50	125	125	-
<b>Total, Program Level</b>	<b>30,926</b>	<b>30,860</b>	<b>30,860</b>	<b>-</b>
<u>Less Funds Allocated from Other Sources</u>				
PHS Evaluation Funds (NLM) .....	-8	-8	-8	-
Type 1 Diabetes Research (NIDDK) /1 .....	-150	-150	-150	-
<b>Total, Discretionary Budget Authority</b>	<b>30,767</b>	<b>30,702</b>	<b>30,702</b>	<b>-</b>
<b>Labor/HHS Appropriation</b> .....	<b>30,688</b>	<b>30,623</b>	<b>30,623</b>	<b>-</b>
<b>Interior Appropriation</b> .....	<b>79</b>	<b>79</b>	<b>79</b>	<b>-</b>
FTE .....	18,573	18,573	18,387	-186

1/ These mandatory funds were pre-appropriated in P.L. 110-275, the Medicare Improvements for Patients and Providers Act of 2008, and P.L. 111-309, the Medicare and Medicaid Extenders Act of 2010.



# NATIONAL INSTITUTES OF HEALTH

*The mission of the National Institutes of Health is to advance fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy lives and reduce the burdens of illness and disability.*

The FY 2013 Budget requests \$30.9 billion for the National Institutes of Health (NIH), the same level as in FY 2012, reflecting the Administration’s priority to invest in innovative biomedical and behavioral research that spurs economic growth while advancing medical science. In FY 2013, NIH estimates it will support a total of 35,888 research project grants, including 9,415 new and competing awards.

NIH is the world's largest and most distinguished organization dedicated to maintaining and improving health through medical science. Its budget is composed of 27 appropriations for its Institutes and Centers, Office of the Director, and Buildings and Facilities. In FY 2013, about 83 percent of the funds appropriated to NIH will flow out to the extramural community, which supports work by more than 325,000 scientists and research personnel affiliated with over 3,000 organizations, including universities, medical schools, hospitals, and other research

facilities. About 11 percent of the budget will support an in house, or intramural, program of basic and clinical research activities managed by world class physicians and scientists. This intramural research program, which includes the NIH Clinical Center, gives our Nation the unparalleled ability to respond immediately to national and global health challenges. Another six percent will provide for agency leadership, research management and support, and facilities maintenance and improvements.

## ADDRESSING RESEARCH PRIORITIES IN FY 2013

In fulfilling its mission, NIH strives to maintain a diverse portfolio of research founded on both public health need and scientific opportunity. NIH research generates discoveries which are opening new avenues for disease treatment and prevention, revolutionizing patient care, and generating

substantial economic growth. In FY 2013, the \$30.9 billion request will seek to take advantage of such discoveries by investing in basic research on the fundamental causes and mechanisms of disease, accelerating discovery through new technologies, advancing translational sciences, and encouraging new investigators and new ideas.

### *Investing in Basic*

**Research:** Approximately 54 percent of the NIH budget is devoted to basic biomedical and behavioral research that makes it possible to understand the causes of disease onset and

### Recent Major Achievements

- ◆ An NIH-supported HIV prevention study was named “Top Scientific Breakthrough of 2011” by Science Magazine. The HPTN 052 clinical trial found that if HIV-infected individuals begin taking antiretroviral medicines when their immune systems are relatively healthy as opposed to delaying therapy until the disease has advanced, they are 96 percent less likely to transmit the virus to their uninfected partners.
- ◆ Five awardees of the NIH Director’s Early Independence Award were named among the top "30 under 30" in Science and Innovation by Forbes Magazine in December 2011. The Early Independence Award is a new funding mechanism that provides an opportunity for exceptional junior scientists to start independent research careers at supportive institutions directly following completion of their graduate degrees or clinical residencies.
- ◆ The Mark O. Hatfield Clinical Research Center was awarded the 2011 Lasker-Bloomberg Public Service Award for serving as a model institution that has transformed scientific advances into innovative therapies and provided high-quality care to patients.

progression. As one example, in FY 2013, NIH plans to continue to pursue the exciting new frontier of microRNAs, which are tiny snippets of RNA that control levels of protein production. MicroRNA research is expected to contribute to research to design new treatments for cancer, cardiovascular diseases, immune disorders, Parkinson's disease, and many other conditions. MicroRNA research is also being used to explore how viruses and environmental factors affect human gene expression, as well as to produce stem cells from adult skin cells.

***Accelerating Discovery Through Technology:***

Investigators are better able to reap the benefits of basic research discoveries through advanced technologies such as DNA sequencing, microarray technology, nanotechnology, new imaging modalities, and computational biology. In FY 2013, NIH plans to support further development and application of these advanced technologies. Advances in genome sequencing are essential to NIH's progress in using genomics to further our knowledge in the genetic variations contributing to common and complex disorders. Since the sequencing of the human genome more than ten years ago, the average fully loaded cost to sequence an entire genome has fallen from more than \$100 million to about \$7,700 currently, and will continue to drop on the way to an ultimate goal of under \$1,000. Such a drop in sequencing cost is likely to lead to dramatic changes in how clinicians diagnose and treat disease and will enable researchers to make even more rapid and efficient progress in developing new diagnostic, treatment, and prevention tools. Additional new and innovative sequencing methods are also under development.

***Advancing Translational Sciences:*** Recent insights into the molecular basis of disease have identified many promising new targets for therapeutic intervention and yielded an unprecedented potential for developing more effective diagnostics and

## Alzheimer's Disease Research

Over the last 40 years, a broad and intense research program, primarily supported and conducted by NIH, has provided important insights into Alzheimer's disease (AD). In FY 2013, NIH will support studies designed to gain a greater understanding of the risk factors that predispose someone to the disease and translate this understanding into new diagnostics and treatments; identify new strategies for interrupting the disease process; and test those strategies in individuals long before they show signs of this devastating disease. As an example, in FY 2013, NIH will renew support for the Alzheimer's Disease Cooperative Study (ADCS), the Nation's preeminent consortium devoted to the discovery, development, and testing of new interventions to prevent and treat AD, particularly those less likely to be developed by industry. Since its inception in 1991, ADCS has initiated 23 drug trials and 7 instrument development protocols. The ADCS was responsible for the discovery that donepezil can delay the onset of a clinical diagnosis of AD.

therapeutics. In order to re-engineer the process of translating such scientific discoveries into new

medical products in FY 2013, NIH will continue to implement the new National Center for Advancing Translational Sciences (NCATS), established in FY 2012. NCATS will serve as the Nation's hub for catalyzing innovations in translational science. Working closely with partners in the regulatory, academic, nonprofit, and private sectors while not duplicating work going on in the private sector, NCATS will strive to identify and overcome hurdles that slow the development of effective treatments and cures.

A prime example of the type of innovative projects that will be led by NCATS is the new initiative between NIH, the Food and Drug Administration, and the Defense Advanced Research Projects Agency to develop cutting edge chip technology. This new technology will allow researchers to screen for safe and effective drugs far more swiftly and efficiently than current methods allow. A great deal of time and money can be saved by testing drug safety and effectiveness much earlier in the product development process.

To meet the goals of NCATS, NIH has reorganized a wide range of preclinical and clinical translational science capabilities within NIH into an integrated scientific enterprise with a bold new agenda. The \$639 million budget for NCATS is primarily a reallocation of funds from programs previously located in the NIH Office of the Director, the

National Human Genome Research Institute, and the now abolished National Center for Research Resources. Major components of NCATS include the Clinical and Translational Science Awards, the FDA NIH Regulatory Science program, the Office of Rare Diseases Research, parts of the Molecular Libraries program, and the Therapeutics for Rare and Neglected Diseases program. The FY 2013 Budget request for NCATS also includes \$50 million, an increase of \$40 million, for the Cures Acceleration Network (CAN) to accelerate the development of “high need cures” by reducing barriers between research discovery and clinical trials. The CAN program may also use up to 20 percent of its funds on flexible research authorities to enable transactions other than contracts, grants, and cooperative agreements to carry out its goals.

***Encouraging New Investigators and New Ideas:***

The future vitality of biomedical science in the United States depends upon the NIH and its support for young scientists. NIH is currently engaged in an ongoing, systematic process of analyzing workforce and training needs to institute more effective mechanisms and policies for a 21st century biomedical workforce. In FY 2013, to encourage exceptionally promising new investigators and to speed the transition of talented trainees to independent researcher positions, NIH will continue to emphasize programs such as the NIH Director’s New Innovator Award, the Lasker Clinical Research Scholars Program, the NIH Director’s Early Independence Award, and the Pathway to Independence Award. NIH is also working to better understand the causes of and solutions to its insufficient track record in recruiting and advancing underrepresented racial and ethnic groups in biomedical and behavioral research.

A total of \$775 million is requested in FY 2013 to support training 16,171 of the next generation of research scientists through the Ruth L. Kirschstein National Research Service Awards (NRSA) program. The Budget proposes a two

percent stipend increase for NRSA predoctoral and postdoctoral research trainees.

***Other Key Priorities:*** NIH estimates it will devote nearly \$3.1 billion for research on HIV/AIDS in FY 2013. There is growing confidence that broad application of the results of NIH research could make possible the first AIDS free generation. Controlling and ultimately eliminating HIV/AIDS will require safe, effective vaccines and other preventive measures. Developing such vaccines remains a priority and one of NIH’s greatest challenges. This effort will require significant advances in basic research to both better understand the virus and the disease and to develop new vaccine strategies. Consistent with FY 2012 congressional action, the FY 2013 Budget for the National Institute of Allergy and Infectious Diseases (NIAID) no longer includes funds to be transferred to the Global Fund to Fight HIV/AIDS, Tuberculosis, and Malaria; instead, funds for this program are requested in a single source within the budget of the Department of State.

NIH estimates that it will support 9,415 new and competing research project grants (RPGs) in FY 2013, an increase of 672 above FY 2012. The total number of RPGs is expected to be 35,888. NIH wide, the average cost of a new and competing RPG in FY 2013 is estimated to be about \$431,000. In order to maximize resources for investigator initiated

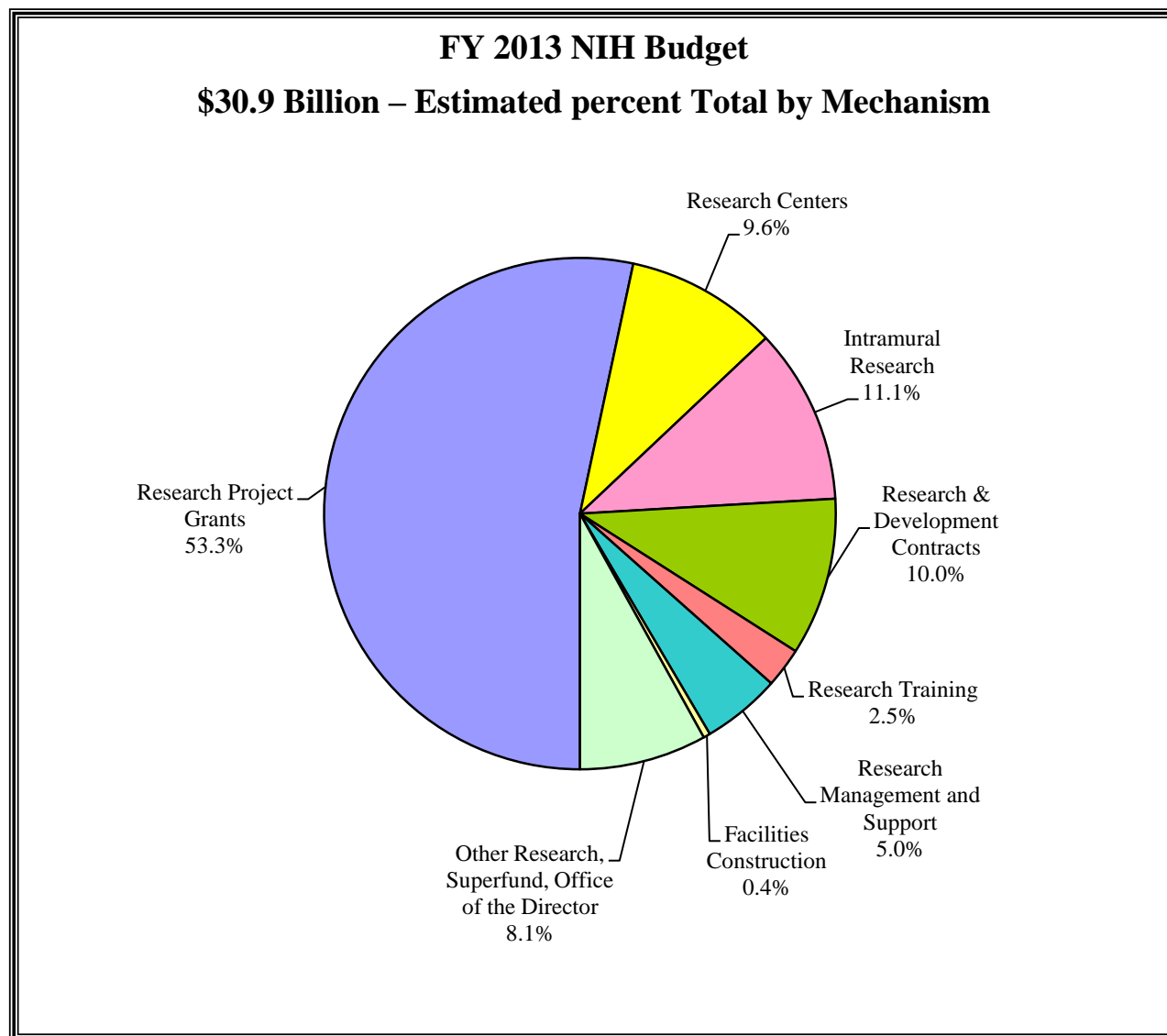
### A New Generation of Cancer Treatments

There are hundreds of different types of cancer, each caused by glitches in DNA that trigger the uncontrolled growth of cells. Identifying the genetic changes that are associated with different types of cancers and understanding how such changes drive the disease process is moving forward at a breathtaking pace because of The Cancer Genome Atlas (TCGA) project. With a mission to characterize the genetic changes in 11,000 cases of human cancer by 2014, TCGA investigators expect to complete the analysis of at least 7,000 cases by 2013. These data will be made available for further research, and TCGA will also begin a series of studies on rare tumors. The TCGA results will lay the foundation for a new era in cancer care. Already, NIH investigators have conducted preclinical testing to evaluate three novel cancer interventions targeting specific genetic alterations that occur in cancer cells. Preclinical testing of agents determines suitability for moving forward with early phase clinical trials. The development of therapies that attack genetic abnormalities in cancer cells, while allowing normal cells to remain unharmed, will enable the management of cancer as a chronic condition and enhance the quality of life for cancer patients.

grants, and to continue to focus on resources for young, first time researchers, NIH intends in FY 2013 to discontinue outyear inflationary allowances for competing and continuation grants; reduce non-competing continuation grants by one percent below the FY 2012 level, and negotiate the budget's of competing grants to avoid growth in the average award size. NIH will also continue the current policy to equalize success rates of new investigators to those of established investigators. It will also establish a process for additional scrutiny and review by the Institute or Center Advisory Council of awards to any principal investigator with existing grants of \$1.5 million or more in total costs.

## INTRAMURAL BUILDINGS AND FACILITIES

A total of \$133 million is requested for NIH Intramural Buildings and Facilities (B&F) in FY 2013, the same level as in FY 2012, to sustain and improve the physical infrastructure used to carry out quality biomedical research on the NIH campuses. In FY 2013, NIH will focus on upgrades to ensure essential safety and regulatory compliance, as well as on facility repairs and improvements to address the most critical utility systems, fire safety, and environmental deficiencies. The B&F mechanism total includes about \$8 million requested within the National Cancer Institute budget for facilities projects at its Frederick, Maryland campus.







# NATIONAL INSTITUTES OF HEALTH OVERVIEW BY MECHANISM

(dollars in millions)				
<u>Mechanism</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2013 +/- 2012</u>
Research Project Grants (dollars).....	16,428	16,489	16,463	-26
[ # of Non-Competing Grants].....	[26,166]	[25,614]	[24,837]	[-777]
[ # of New/Competing Grants].....	[8,706]	[8,743]	[9,415]	[+672]
[ # of Small Business Grants] .....	[1,494]	[1,587]	[1,636]	[+49]
[ Total # of Grants ]	[36,366]	[35,944]	[35,888]	[-56]
Research Centers.....	3,020	3,031	2,966	-64
Other Research.....	1,803	1,833	1,823	-10
Research Training .....	772	778	775	-2
Research and Development Contracts.....	3,227	2,968	3,076	+108
Intramural Research .....	3,407	3,408	3,429	+21
Research Management and Support.....	1,526	1,533	1,535	+2
Office of the Director .....	605	608	580	-28
[ NIH Common Fund (non-add)].....	[543]	[545]	[545]	-
Buildings and Facilities.....	58	133	133	-
NIEHS Interior Appropriation (Superfund) .....	79	79	79	-
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