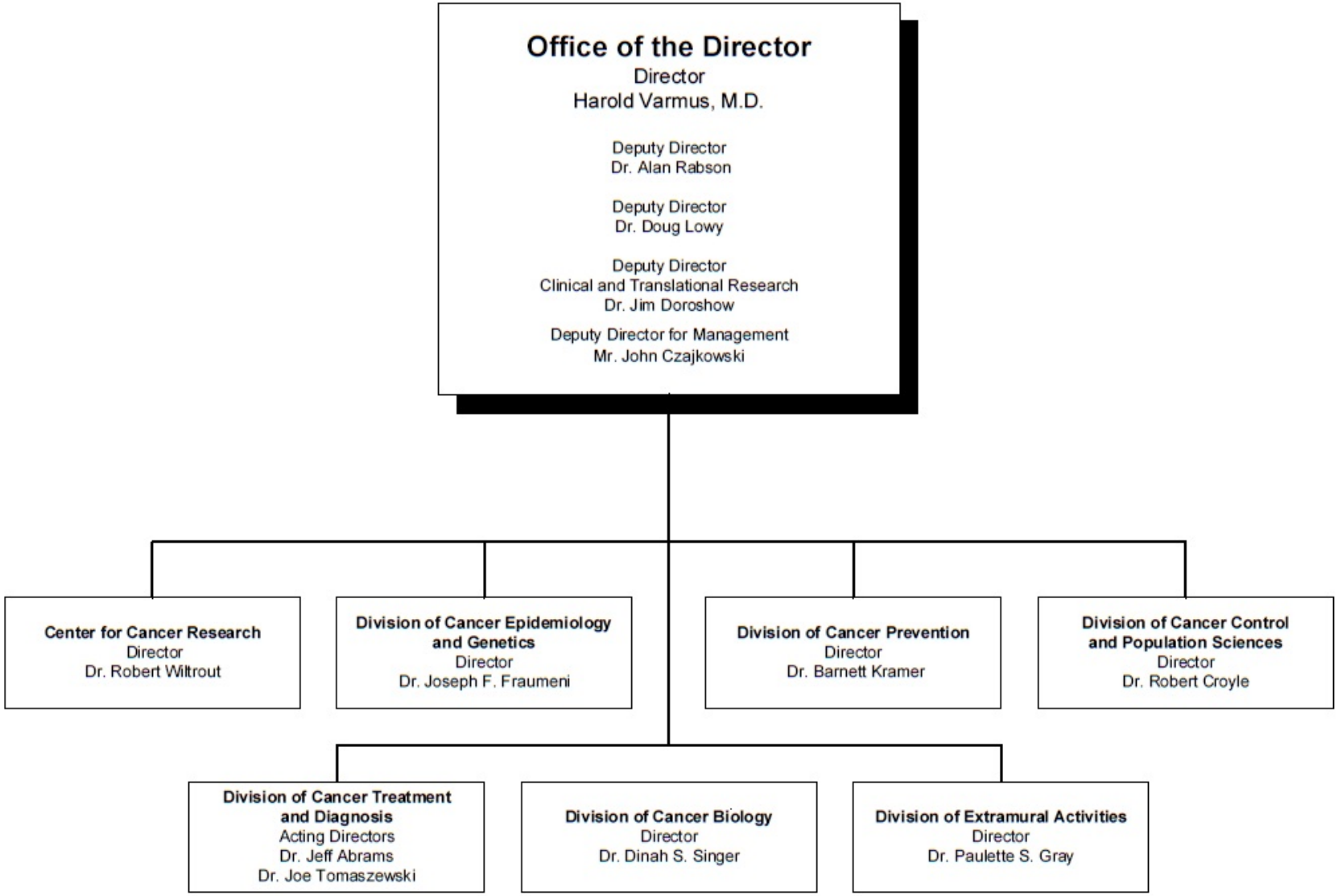
DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Cancer Institute (NCI)

NCI-2

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute
Organization Chart



NATIONAL INSTITUTES OF HEALTH

National Cancer Institute

For carrying out Section 301 and title IV of the PHS Act with respect to cancer, [$5,081,788,000] *$5,068,864,000,* of which up to $8,000,000 may be used for facilities repairs and improvements at the National Cancer Institute-Frederick Federally Funded Research and Development Center in Frederick, Maryland. *(Department of Health and Human Services Appropriations Act, 2012)*

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Amounts Available for Obligation [1]
(Dollars in Thousands)

Source of Funding	FY 2011 Actual	FY 2012 Enacted	FY 2013 PB
Appropriation	5,103,388	5,081,788	5,068,864
Type 1 Diabetes	0	0	0
Rescission	(44,811)	(9,605)	0
Supplemental	0	0	0
Subtotal, adjusted appropriation	5,058,577	5,072,183	5,068,864
Real transfer under Secretary's transfer authority	0	(1,445)	0
Comparative Transfers for NCATS reorganization	0	0	0
Comparative Transfers to NCATS for Therapeutics and Rare and Neglected Diseases (TRND)	(4,163)	0	0
Comparative Transfers to NLM for NCBI and Public Access	(4,341)	(4,591)	0
Subtotal, adjusted budget authority	5,050,073	5,066,147	5,068,864
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	5,050,073	5,066,147	5,068,864
Unobligated balance lapsing	0	0	0
Total obligations	5,050,073	5,066,147	5,068,864

[1] Excludes the following amounts for reimbursable activities carried out by this account:
FY 2011 - $27,648 FY 2012 - $30,000 FY 2013 - $30,000

NATIONAL INSTITUTES OF HEALTH

National Cancer Institute

Budget Mechanism - Total [1]

(Dollars in Thousands)

MECHANISM	FY 2011 Actual		FY 2012 Enacted		FY 2013 Estimate		Change vs. FY 2012	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Grants:								
Research Projects:								
Noncompeting	3,769	$1,631,514	3,710	$1,648,011	3,545	$1,620,498	(165)	($27,513)
Administrative Supplements	*206*	23,619	*206*	23,619	*206*	23,619	0	0
Competing:								
Renewal	181	90,305	175	87,172	188	92,862	13	5,690
New	922	333,729	917	332,021	987	353,694	70	21,673
Supplements	3	460	3	1,193	3	1,271	0	78
Subtotal, Competing	1,106	$424,494	1,095	$420,386	1,178	$447,827	83	$27,441
Subtotal, RPGs	4,875	$2,079,627	4,805	$2,092,016	4,723	$2,091,944	(82)	($72)
SBIR/STTR	144	$84,054	144	$84,054	144	$84,054	0	$0
Research Project Grants	5,019	$2,163,681	4,949	$2,176,070	4,867	$2,175,998	(82)	($72)
Research Centers:								
Specialized/Comprehensive	256	$598,037	256	$598,037	256	$598,336	0	$299
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	256	$598,037	256	$598,037	256	$598,336	0	$299
Other Research:								
Research Careers	438	$73,615	438	$73,615	438	$73,120	0	($495)
Cancer Education	90	32,590	90	32,590	90	32,606	0	16
Cooperative Clinical Research	135	243,880	135	243,880	135	244,002	0	122
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	0	0	0	0	0	0	0
Other	147	75,546	147	75,546	147	75,584	0	38
Other Research	810	$425,631	810	$425,631	810	$425,312	0	($319)
Total Research Grants	6,085	$3,187,349	6,015	$3,199,738	5,933	$3,199,646	(82)	($92)
Research Training:	FTTPs		FTTPs		FTTPs			
Individual Awards	184	$8,138	184	$8,284	180	$8,450	(4)	$166
Institutional Awards	1,191	59,516	1,191	60,587	1,193	61,799	2	1,212
Total Research Training	1,375	$67,654	1,375	$68,871	1,373	$70,249	(2)	$1,378
Research & Development Contracts	467	$578,531	467	$581,471	467	$582,298	0	$827
(SBIR/STTR)	*74*	*$26,103*	*75*	*$31,514*	*75*	*$35,327*	*0*	*$3,813*
	FTEs		FTEs		FTEs		FTEs	
Intramural Research	1,972	$833,670	1,972	$833,670	1,953	$834,087	(19)	$417
Research Management and Support	1,163	375,020	1,163	374,477	1,151	374,664	(12)	187
Extramural Construction		0		0		0	0	0
Buildings and Facilities		7,849		7,920		7,920	0	0
Total, NCI	3,135	$5,050,073	3,135	$5,066,147	3,104	$5,068,864	(31)	$2,717

[1] All items in italics are "non-adds"; items in parenthesis are subtractions.

Major Changes in the Fiscal Year 2013 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 2013 budget request for the National Cancer Institute, which is $2.717 million more than the FY 2012 Enacted level, for a total of $5,068.864 million.

Research Project Grants (RPGs; -$0.072 million; total $2,175.998 million): NCI will continue to support competing RPGs – 1,178 awards totaling $447.827 million, in FY 2013, an increase of 83 awards and $27.441 million above FY 2012. A total of 3,545 noncompeting awards, totaling $1,644.117 million, will also be made in FY 2013. The noncompeting amount decreases by $27.513 million from FY 2012 due to 165 fewer continuation grants scheduled for funding in FY 2013. NIH budget policy for RPGs in FY 2013 discontinues inflationary allowances and reduces the average cost of noncompeting and competing RPGs by one percent below the FY 2012 level.

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

FY 2012 Enacted				**$5,066,147**
FY 2013 President's Budget				**$5,068,864**
Net change				**$2,717**
	2013 President's Budget		**Change from FY 2012**	
CHANGES	**FTEs**	**Budget Authority**	**FTEs**	**Budget Authority**
A. Built-in:				
1. Intramural Research:				
a. Annualization of January 2012 pay increase & benefits		$322,010		$14
b. January FY 2013 pay increase & benefits		322,010		1,006
c. One more day of pay		322,010		1,237
d. Annualization of PY net hires		322,010		0
e. Payment for centrally furnished services		122,755		0
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		389,322		0
Subtotal				$2,257
2. Research Management and Support:				
a. Annualization of January 2012 pay increase & benefits		$177,830		$6
b. January FY 2013 pay increase & benefits		177,830		546
c. One more day of pay		177,830		684
d. Annualization of PY net hires		177,830		0
e. Payment for centrally furnished services		28,944		0
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		167,890		0
Subtotal				$1,236
Subtotal, Built-in				$3,493

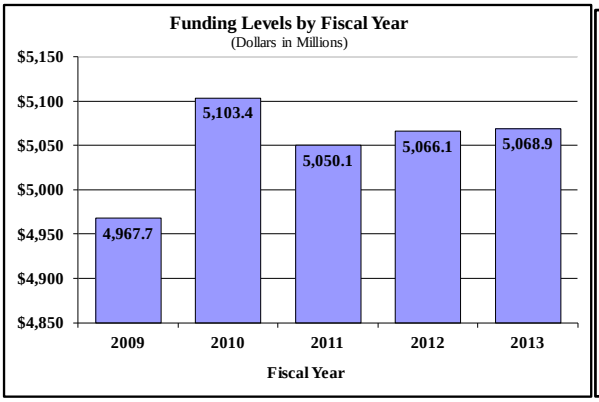
NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

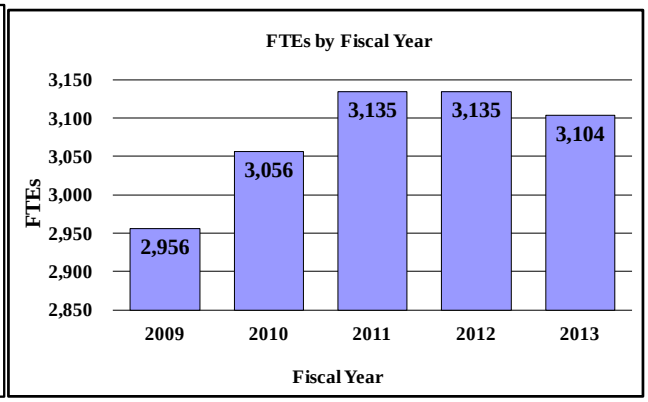
Summary of Changes--continued

CHANGES	2013 President's Budget		Change from FY 2012	
	No.	**Amount**	**No.**	**Amount**
B. Program:				
1. Research Project Grants:				
a. Noncompeting	3,545	$1,644,117	(165)	($27,513)
b. Competing	1,178	447,827	83	27,441
c. SBIR/STTR	144	84,054	0	0
Total	4,867	$2,175,998	(82)	($72)
2. Research Centers	256	$598,336	0	$299
3. Other Research	810	425,312	0	(319)
4. Research Training	1,373	70,249	(2)	1,378
5. Research and development contracts	467	582,298	0	827
Subtotal, Extramural		$3,852,193		$2,113
	FTEs		FTEs	
6. Intramural Research	1,953	$834,087	(19)	($1,840)
7. Research Management and Support	1,151	374,664	(12)	(1,049)
8. Construction		0		0
9. Buildings and Facilities		7,920		0
Subtotal, program	3,104	$5,068,864	(31)	($776)
Total changes				$2,717

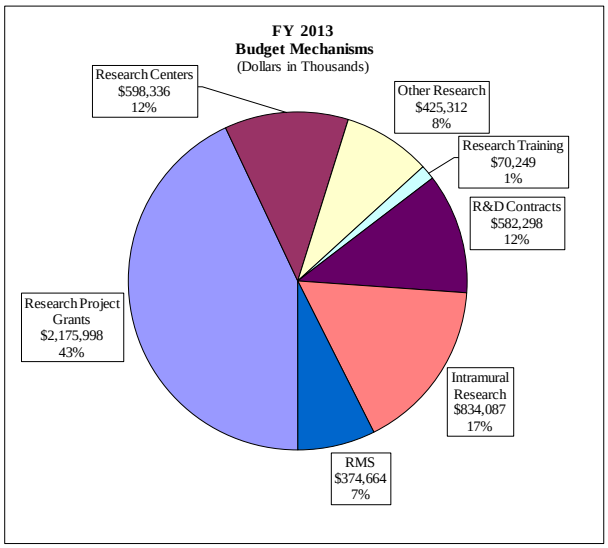
Budget Graphs

History of Budget Authority and FTEs:

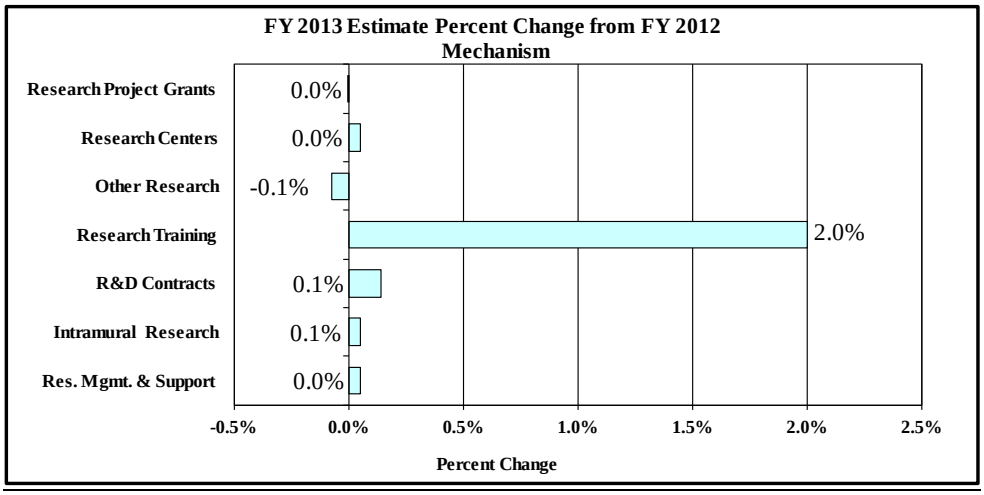




Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH

National Cancer Institute

Budget Authority by Activity

(Dollars in Thousands)

	FY 2011 Actual		FY 2012 Enacted		FY 2013 PB		Change vs. FY 2012 Enacted	
Extramural Research	**FTEs**	**Amount**	**FTEs**	**Amount**	**FTEs**	**Amount**	**FTEs**	**Amount**
Detail:								
Understanding the Mechanisms of Cancer		776,351		778,841		779,205		$364
Understanding the Causes of Cancer		$1,267,764		$1,272,678		$1,273,319		641
Improve Early Detection and Diagnosis		449,419		451,722		451,922		200
Develop Effective and Efficient Treatments		1,227,280		1,230,495		1,231,398		903
Cancer Prevention and Control		195,512		197,804		197,921		117
Cancer Centers		577,019		578,134		578,340		206
Research Workforce Development		173,859		174,076		174,175		99
Building and Facilities		7,849		7,920		7,920		0
Subtotal, Extramural		$4,675,053		$4,691,670		$4,694,200		$2,530
Intramural Research*	1,972	$833,670	1,972	$833,670	1,953	$834,087	(19)	$417
Research Management & Support	1,163	$375,020	1,163	$374,477	1,151	$374,664	(12)	$187
TOTAL	3,135	$5,050,073	3,135	$5,066,147	3,104	$5,068,864	(31)	$2,717

1. Includes FTEs which are reimbursed from the NIH Common Fund.
2. Includes Real Transfers and Comparable Adjustments as detailed in the "Amounts Available for Obligation" table.

*The detail programs listed above include both extramural and intramural funding. The Intramural Research line is a “non-add”

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2012 Amount Authorized	FY 2012 Enacted	2013 Amount Authorized	FY 2013 PB
Research and Investigation	Section 301	42§241	Indefinite	$5,066,147,000	Indefinite	$5,068,864,000
National Cancer Institute	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$5,066,147,000		$5,068,864,000

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2004	$4,770,519,000	$4,770,519,000	$4,770,519,000	$4,770,519,000
Rescission				($31,264,000)
2005	$4,870,025,000	$4,870,025,000	$4,894,900,000	$4,865,525,000
Rescission				($40,267,000)
2006	$4,841,774,000	$4,841,774,000	$4,960,828,000	$4,841,774,000
Rescission				($48,418,000)
2007	$4,753,609,000	$4,753,609,000	$4,799,063,000	$4,797,639,000
Rescission				$0
2008	$4,782,114,000	$4,870,382,000	$4,910,160,000	$4,890,525,000
Rescission				($85,437,000)
Supplemental				$25,559,000
2009	$4,809,819,000	$4,975,039,000	$4,958,594,000	$4,968,973,000
Rescission				$0
2010	$5,150,170,000	$5,150,170,000	$5,054,099,000	$5,103,388,000
Rescission				$0
2011	$5,264,643,000		$5,256,409,000	$5,103,388,000
Rescission				($44,810,787)
2012	$5,196,136,000	$5,196,136,000	$5,001,623,000	$5,081,788,000
Rescission				($9,604,579)
2013	$5,068,864,000			

Justification of Budget Request

National Cancer Institute

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

	FY 2011 Actual	FY 2012 Enacted	FY 2013 President's Budget	FY 2013 + /- FY 2012
BA	$5,050,073,000	$5,066,147,000	$5,068,864,000	+$2,717,000
FTE	3,135	3,135	3,104	-31

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

Director's Overview

The National Cancer Institute (NCI) is poised in FY 2013 to take advantage of new and emerging scientific opportunities in cancer research, informed in large part by the understanding that cancers are diseases caused by changes in a cell's genome. Efforts to build on this view of cancer are driven by new tools for understanding cells at a molecular level and by technologies for genomic analysis and their potential to enable additional advances in precision medicine to reduce the Nation's cancer burden. The President's budget for 2013 for the National Cancer Institute will provide support for discoveries in basic science, cancer control and prevention, early detection and diagnosis, and treatment to prevent, treat, and in some instances cure, cancers of many kinds.

Basic science. In collaboration with the National Human Genome Research Institute (NHGRI), the NCI is leading The Cancer Genome Atlas (TCGA), the largest and most comprehensive analysis of the molecular basis of cancer ever undertaken. TCGA aims to identify and catalog all of the relevant genetic alterations in many types of cancer. For instance, building on their recent reclassification of glioblastoma multiforme (GBM), an aggressive form of brain cancer, in the past year TCGA investigators discovered that about 10 percent of patients with one of the four subtypes of GBM are younger at diagnosis and live longer than patients with other subtypes of the disease, but their tumors are unresponsive to current intensive therapies. The molecular profile of this subtype offers new targets for developing drugs to treat this form of the disease more effectively. Similarly, analysis of ovarian cancer through TCGA confirmed that one important mutation is found in virtually all of these cancers. The information gleaned from this genomic gold mine could inform drug discovery and treatment options for ovarian cancer and some 20 other cancer types currently under study at TCGA.

In a similar vein, basic research is unlocking our understanding of what happens in the cellular microenvironment in and around a developing tumor. One focus of that research is finding ways to boost the body's own immune responses to cancer, potentially opening up a new array of cancer treatments. The molecule CTLA-4, for example, inhibits the actions of T cells, part of the

body's self-defense against tumors; the Food and Drug Administration in 2011 approved uses of the drug ipilimumab for melanoma to block CTLA-4's action and allow the body to ramp up its own T-cell attacks on tumors. Ipilimumab and other immune-enhancement strategies that are targeted against cellular processes have the advantage of not being tumor-specific – they can be used against many different kinds of cancers, and open a promising frontier of immunotherapy.

Prevention and early detection. The NCI's successful National Lung Screening Trial provided the first clear demonstration that a screening procedure can be effective in reducing mortality from lung cancer—current and former smokers who were screened with low-dose helical computed tomography were 20 percent less likely to die of lung cancer than were peers who received standard chest x-rays, a finding that could save many lives among those at greatest risk. In 2011, the publication of the full paper from that trial provided the framework for implementing this new screening protocol on a widespread basis, and this budget request supports continuing research on the tumor samples collected as part of the study. The President's Budget also funds a wide range of prevention and detection efforts, including screening for breast, colorectal, and cervical cancers; new imaging approaches for more accurate and earlier detection of glioblastoma multiforme, breast, and renal cell carcinoma; and identification of biomarkers as early warning signs of the presence of, or likelihood of, developing many kinds of cancers. This request also funds efforts to understand and modify behaviors that increase the risk of developing cancer, to reduce exposure to environmental carcinogens, and to mitigate the effects of environmental or genetic cancer risks.

Cancer treatment. Using genomics to match drugs to the patients most likely to benefit from them, and conversely sparing patients courses of treatment from which they will not benefit, promises to be among the new modalities for successfully managing cancer. The potential therapeutic impact of basic discoveries made by TCGA and other efforts in cancer genomics has been dramatically illustrated within the past year by the development of effective drugs against metastatic melanoma. Eight years ago, studies of cancer genomes uncovered a common mutation in a gene that encodes an enzyme called BRAF. Early stage clinical trials at NCI-designated Cancer Centers of drugs targeted against the mutant BRAF enzyme showed that most melanomas with the relevant mutation regressed dramatically. Although tumor regression generally lasted less than a year, NCI-supported investigators have already pinpointed the cause of resistance to BRAF inhibitors, outlining a pathway to more sustained control of this lethal disease. In 2011, the Food and Drug Administration endorsed a similar approach in lung cancer treatment by approving the drug crizotinib for targeting ALK mutations. Such targeted treatments, based on more complete understanding of the genetic and molecular workings of cancer cells, can only be pursued with sustained support both for fundamental research and for faster integration of research into clinical applications to improve patient outcomes.

The emerging scientific landscape of precision medicine made possible by genomic information about cancer offers the promise of significant advances for current and future cancer patients. This effort is complemented at NCI by a new initiative to engage new investigators and new ideas through applications to address 24 Provocative Questions through a Request for Applications (RFA) released in 2011 -- important but non-obvious questions that will stimulate the NCI's research communities to use laboratory, clinical, and population sciences in especially effective and imaginative ways. The potentially game-changing answers to these scientific

questions could influence the directions taken by NCI-sponsored research in the future, and could contribute to an even greater wave of discovery and progress against cancer.

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

Program Portrait: Provocative Questions "PQ" Program
FY 2012 Level: $15.0 million
FY 2013 Level: $15.0 million
Change: $0.0 million

Progress in cancer research depends on identifying important outstanding questions in the field and designing appropriate experiments to answer them. NCI is committed to uncovering many new observations that need to be pursued, as well as reevaluating older, but important, questions not satisfactorily addressed in the past. Over the past year, the NCI has sponsored several workshops to identify and prioritize compelling but understudied problems in cancer research to create a list of "Provocative Questions." The goal is to assemble a list of important but non-obvious questions that will stimulate the NCI's research communities to use laboratory, clinical, and population sciences in effective and imaginative ways. These "Provocative Questions" are not intended to represent the full range of NCI's priorities in cancer research; they are meant to challenge cancer researchers to focus on specific problems in key areas of cancer research that are deemed important but have not received sufficient attention. Examples of PQs include the following:

(1) How does obesity contribute to cancer risk?
(2) Why are some disseminated cancers cured by chemotherapy alone?
(3) Why do certain mutational events promote cancer phenotypes in some tissues and not in others?
(4) Given the recent discovery of the link between a polyomavirus and Merkel cell cancer, what other cancers are caused by novel infectious agents and what are the mechanisms of tumor induction?
(5) Can tumors be detected when they are two to three orders of magnitude smaller than those currently detected with *in vivo* imaging modalities?

More information is available at http://provocativequestions.nci.nih.gov/rfa

Program Descriptions and Accomplishments

NCI's research spans a variety of activities that can be summarized within five scientific themes: Understanding the Mechanisms of Cancer; Understanding the Causes of Disease; Improving Early Detection and Diagnosis; Developing Effective and Efficient Treatments; and Improving Cancer Prevention and Control. Examples of programs, projects, and progress in each of these areas are described in the following sections.

Understanding the Mechanisms of Cancer: A deeper understanding of the genomic aberrations and molecular processes that drive cancer is critical for the development of new diagnostic and therapeutic approaches. Large-scale, high-throughput studies provide insight into the genomic fingerprints of the numerous diseases called cancer. Additional studies in model systems can be used to probe the importance of identified mutations to cancer initiation and maintenance and to identify actionable targets to counteract molecular processes gone awry.

Budget Policy: The FY 2013 President's Budget request is $779.205 million, an increase of $0.364 million,, or 0.05 percent compared to the FY 2012 Enacted level. A large proportion of studies of the mechanisms of carcinogenesis are investigator-initiated research project grants (RPGs), but NCI also directs a number of large and small programs in this area of research. The

Center for Cancer Genomics coordinates programs across NCI focused on genome structure and function. A major component of the Center for Cancer Genomics is The Cancer Genome Atlas (TCGA) –a joint program with NHGRI. The TCGA is cataloguing the mutations and other alterations that occur in more than 20 types of human cancer with the goal of improving cancer diagnosis, treatment, and prevention. TCGA is also working with NCI's Center to Reduce Cancer Health Disparities to ensure that adequate numbers of specimens are obtained from underserved and underrepresented populations. Analysis of nearly 500 ovarian cancers through TCGA exposed several tumor subtypes, identified molecular pathways potentially important in tumor maintenance, revealed that mutations in the TP53 gene are found in virtually all of these cancers, and catalogued the large areas of the genome that are missing or overrepresented. The Therapeutically Applicable Research to Generate Effective Treatments (TARGET) initiative and the Cancer Genome Characterization Initiative (CGCI) are using high-throughput platforms to identify genetic abnormalities in tumors from pediatric and adult patients as well as those from HIV-positive individuals.

The Cancer Target Discovery and Development (CTD^2) Network is accelerating the transition of the molecular data to new treatments through gene validation studies as well as high-throughput screening of small molecules and research in mouse models. In addition, investigators in the Clinical Proteomic Tumor Analysis Consortium (CPTAC) are analyzing the sequences and quantities of proteins in samples collected through TCGA with the goal of comprehensive integration of genomic and proteomic data.

A number of NCI resources support studies in mouse models. The Mouse Models of Human Cancers Consortium (MMHCC) promotes the use of genetically engineered mice for mechanistic studies as well as to provide insight into new therapeutic strategies before they are tested in clinical trials. Collaborative Cross and Diversity Outbred Mice developed with NCI funding are being used to discover genetic determinants of therapeutic response and adverse events. Collaborative Cross mice—which were developed in partnership with the National Center for Research Resources (NCRR), National Institute of Environmental Health Sciences (NIEHS), and National Institute on Drug Abuse (NIDA)—are also being used for mouse genome-wide association studies (GWAS) to expose genetic factors and gene-environment interactions that contribute to cancer susceptibility, including those related to lifestyle factors such as obesity, stress, diet, and lack of exercise.

Understanding the Causes of Cancer: Cancer results from the complex interplay of genetic background and environmental factors. In some cases, a mutation of a single gene may be enough to increase cancer risk while in other cases combinations of gene variants collectively contribute to susceptibility. A myriad of environmental factors can influence cancer risk. In addition to carcinogens (such as those found in tobacco) and some infectious agents, physiological changes related to obesity or other factors can also play a role.

Budget Policy: The FY 2013 President's Budget request is $1,273.319 million, an increase of $0.641 million, or 0.05 percent compared to the FY 2012 Enacted level. NCI's past investment in population cohorts has laid the groundwork for additional studies to identify factors associated with cancer risk and determine how these factors interact. Studies through NCI's Cohort Consortium—a large-scale, international collaboration of cohorts that together include over four million people—are evaluating the role of genetic susceptibility, environmental exposures (including nutrition), and gene-environment interactions for a range of cancer types. NCI also

has several ongoing and planned genome-wide association studies to identify genetic determinants of breast, prostate, lymphoma, lung, and pancreatic cancers as well as genetic factors that may contribute to obesity and tobacco use. NCI has also funded a number of studies through its new Post-Genome Wide Association Initiative, the goal of which is to translate GWAS findings into clinical and prevention applications by replicating findings, more accurately pinpointing genomic regions that cause cancer, unraveling the functions of genetic variants, and determining how environmental factors alter genetic risk. The Breast Cancer and the Environment Research Program, which is a transdisciplinary approach involving basic scientists, epidemiologists, clinicians, and community partners, is investigating the effects of environmental exposures that may predispose a woman to breast cancer throughout her lifetime.

NCI research also focuses on the important roles of infectious agents, the immune system, and the tumor microenvironment in cancer. Current evidence indicates that as many as one in five cancers may have an infectious cause. When infectious causes are discovered, the agent can represent a molecular target for intervention or can serve as a biomarker for screening (e.g., human papillomavirus infection of the cervix, infection of the liver with the hepatitis B and C viruses). NCI-funded investigators are studying the role of immune dysfunction in tumorigenesis, in part through the study of cancer in HIV-infected individuals, and are also investigating the contributions of chronic inflammation to cancer development. NCI is also actively investigating therapies that utilize host immune cells and immune responses to combat tumor growth and metastasis. For instance, the Center for Excellence in Immunology (CEI), an intramural research program, fosters the discovery, development, and delivery of novel immunologic approaches for the prevention and treatment of cancer and cancer-associated viral diseases. The complex interactions between tumors and surrounding cells that influence cancer progression are being characterized by projects funded through the Integrative Cancer Biology Program (ICBP) and the Tumor Microenvironment Network (TMEN). Projects funded through the recent Advanced In Vivo Imaging to Understand Cancer Systems initiative are focused on integrating advanced *in vivo* imaging technologies with systems biology approaches to understand complex cancer phenomena at highest resolution.

NCI supports research to explore the effects of obesity and energy balance on cancer risk as well as to inform the development of improved methods for assessing energy intake, fat distribution, sedentary behavior, and physical activity. NCI also evaluates mechanisms by which obesity may be related to carcinogenesis using high-throughput technologies and other analytic approaches. An example of an initiative in this area is the Transdisciplinary Research on Energetics and Cancer (TREC) Program, which was developed to foster collaboration among scientists and accelerate progress toward reducing cancer incidence, morbidity, and mortality associated with obesity, low levels of physical activity, and poor diet.

Improving Early Detection and Diagnosis: Tools that can accurately detect and diagnose tumors have potential to markedly improve outcomes for cancer patients since these tools would detect cancer early, before it has spread throughout the body and when treatment is more likely to be curative. Researchers are working to identify clinically meaningful molecules—nucleic acids, proteins, metabolites, and other substances—as well as imaging modalities that can be used to identify the presence of cancer cells and monitor response to therapy in minimally invasive ways. Importantly, the risks associated with screening and early detection modalities must be assessed and measures taken to ensure that risks do not outweigh benefits.

Budget Policy: The FY 2013 President's Budget request is $451.922 million, an increase of $0.2 million, or 0.04 percent compared to the FY 2012 Enacted level. NCI continues to devote resources to direct efforts to improve patient outcomes through early diagnosis. Results from the NCI-sponsored National Lung Screening Trial indicate that screening with low-dose computed tomography (CT) results in twenty percent fewer lung-cancer deaths among current and former heavy smokers compared with screening with chest X-ray. This development marks the first time that a screening test has been found to reduce mortality from lung cancer, the most common cause of cancer deaths in the United States and the world. Screening for breast, colon, and cervical cancers has been shown to reduce mortality from these diseases, but there is evidence that these tests are not optimally implemented in community settings. The Population-based Research Optimizing Screening through Personalized Regimens (PROSPR) initiative funds research to improve the screening processes for these cancers with respect to recruitment, screening, diagnosis, and referral for treatment.

Other initiatives and projects, including a large portfolio of RPGs, are pursuing biomarkers with potential to aid in early detection and diagnosis. Specialized Programs of Research Excellence (SPORE) investigators are identifying cellular and molecular markers using annotated biospecimens. SPORE investigators are also leveraging samples from the Prostate Lung Colorectal and Ovarian (PLCO) study to develop approaches for early detection of ovarian cancer. The Early Detection Research Network (EDRN) and the Repository for Molecular Brain Neoplasia Data (REMBRANDT) are funding research intended to identify and validate candidate biomarkers of early disease, with the goal of developing clinically useful diagnostic tests. The efforts of investigators working on early detection and improved diagnosis can be augmented by findings from genomic and proteomic studies (e.g., TCGA, TARGET, CPTAC) and the results from the CTD^2 Network.

NCI also supports the development of imaging approaches for early detection and diagnosis. A pilot program conducted in collaboration with the NCI Cancer Imaging Program collects and makes publicly available clinical imaging scans from patients whose tumor tissue has been analyzed through TCGA in order to assess whether noninvasive imaging techniques can provide information about the genomic fingerprint of tumors. The pilot initially focused on collecting magnetic resonance images of patients with glioblastoma multiforme; collections of images from breast and renal cell carcinoma patients are also underway. An image archive with user support has been established with both public and limited access collections. The archive collections can be used for a number of applications, including development of computer-aided diagnosis tools, genomic correlations, teaching, and modeling. Ongoing investments in nanotechnology, such as those through the NCI Alliance for Nanotechnology in Cancer, may also lead to earlier detection and diagnosis. For example, nanotechnology-based approaches allow imaging of specific cancer biomarkers in patients and will facilitate development of *in vitro* diagnostics with a speed and sensitivity that far surpass current clinical methods.

Developing Effective and Efficient Treatments: The future of cancer treatment lies in the identification of molecular targets within cancer cells or in the tumor environment that can be manipulated through intervention. Matching drugs to the patients most likely to respond to them is a critical component of molecularly targeted medicine. Once a molecularly targeted drug is developed, researchers can often find ways to use it in different disease types and/or in combination with other agents.

Budget Policy: The FY 2013 President's Budget request is $1,231.398 million, an increase of $0.903 million, or 0.07 percent compared to the FY 2012 Enacted level. NCI investments in basic research lead to identification of potential therapeutic targets, many of which are validated and pursued by commercial interests. NCI seeks to complement rather than compete with the private sector and often takes the lead on high-risk projects or those focused on rare cancers. Drugs against targets that have been characterized in part by NCI-funded researchers are already being used to treat cancer and/or are being tested in clinical trials. For example, phase III clinical trials have been recently initiated to test therapies targeting BRAF in melanoma and ALK in lung cancer.

NCI supports a large portfolio of translational and preclinical studies that are focused on identifying, validating, and testing strategies for the treatment of cancer. The Comparative Oncology Program (COP) provides an integrated mechanism through which the study of naturally occurring cancers in animals can generate new information about cancer and help translate biological concepts to clinical application. As part of this effort, and to evaluate novel therapeutic strategies for cancer, COP has established a multicenter collaborative network of extramural comparative oncology programs to design and implement preclinical trials involving domesticated animals.

NCI has a number of programs designed to promote development of drugs and assays for clinical trials. The NCI Experimental Treatment Program (NExT) aims to shorten the typical 10- to 12-year drug development timeline by getting promising drugs into human trials and rapidly eliminating those likely to be ineffective. Supported by both the intramural and extramural programs, the NExT platform will facilitate the many handoffs that occur between academic research laboratories and the private sector in order to achieve the ultimate goal of utility in patients. The Chemical Biology Consortium, a component of NExT, develops chemical tools for probing signaling pathways involved in cancer, with a focus on molecules that have traditionally been difficult to target. The new Clinical Assay Development (CADP) program has been established to accelerate the movement of promising clinical laboratory assays from the research setting into clinical trials. CADP provides access to tissue and laboratory resources for the analytical and clinical validation of assays to predict response to cancer treatment or disease outcome. Services are provided to efficiently develop diagnostic tests that address clinical needs, including co-development of targeted agents and predictive markers. In support of the NExT initiative, the Center for Advanced Preclinical Research (CAPR) will accelerate development of therapeutics and diagnostics for human diseases by providing state-of-the-art animal models that are genetically programmed to develop diseases that mimic human diseases.

Efforts are also underway to enhance traditional radiation therapy and chemotherapy. The Radiation Research Program (RRP) tests NCI-developed drugs for their efficacy as radiosensitizers under a variety of *in vitro* environmental conditions and carries out *in vivo* radiation response studies. RRP also fills an essential role by coordinating the transfer of NCI-developed drugs to extramural and foreign investigators interested in radiation studies, while avoiding duplication of effort between research groups. Nanotechnology-based constructs are being developed to facilitate better delivery of chemotherapeutic drugs, potentially avoiding their toxic systemic effects. In addition, nanotechnology is being pursued as a means to delivery gene-specific siRNA to target cells.

Innovative research in genetics, imaging, and cancer molecular signatures is laying the groundwork for customized cancer patient care. Specialized Programs of Research Excellence (SPORE) investigators are working to develop predictive markers concomitantly with new treatments to facilitate identification of patients most likely to respond to specific treatments. The Advanced Technology Program accelerates the delivery of new treatments to patients by developing and applying advanced technologies—such as biomedical imaging. The NCI imaging facility for clinical cancer research will fuse imaging and pathology in the evaluation of patients throughout treatment. The NIH Center for Interventional Oncology offers new and expanded opportunities to investigate cancer therapies using imaging technology to diagnose and treat localized cancers in a targeted and minimally or noninvasive manner. This interdisciplinary environment combines training, patient treatment, and translational research. Researchers funded through the Quantitative Imaging Network (QIN) are developing and validating quantitative imaging methods and software tools for the measurement of response to drug or radiation therapy for use in clinical trials.

Clinical trials are a critical step in moving potential therapies into clinical practice. NCI supports clinical trials through a number of mechanisms, especially the Cooperative Group Program. The Cooperative Groups are now being reorganized to streamline the development and execution of trials, to select and prioritize trials through stringent peer review, and to fund the most promising and innovative studies. In an effort to maximize molecular characterization of cancers, biological specimens will be collected for future research. Other trials are conducted within the intramural research program and under the aegis of investigator initiated projects. NCI has also implemented the Biomarker, Imaging, and Quality of Life Studies Funding Program (BIQSFP), which supports promising correlative studies related to biomarkers, imaging, and patient quality of life, in association with phase III and large phase II trials. In order to facilitate management and coordination of the clinical trials portfolio, NCI is creating the Clinical Trials Reporting Program (CTRP), a comprehensive database that will contain regularly updated information on all interventional trials.

NCI has made significant efforts to expand access to clinical trials for patients being treated in community settings and for minority and underserved populations. The Community Clinical Oncology Programs (CCOPs) enroll patients onto approved cancer prevention, control, and treatment trials, enrolling one-third of all participants on NCI trials nationwide. The 47 current CCOPs represent 340 hospitals and 2,900 physicians. The Minority-Based Community Clinical Oncology Programs (MBCCOPs) enroll patients onto approved trials in areas with at least 40 percent underserved or minority populations. The 16 current MBCCOPs comprise 55 hospitals and 475 physicians, including 100 minority investigators. MBCCOPs have an average of 64 percent minority participants on trials at their sites. The NCI Community Cancer Centers Program (NCCCP) was expanded from the original 16 pilot sites to a total of 30 sites with the goal of improving the quality of cancer care for more than 50,000 new cancer patients from rural, inner-city, and underserved communities each year and providing them the opportunity to participate in cancer research.

NCI also invests in research to elucidate the factors that contribute to cancer health disparities. The Basic Research in Cancer Health Disparities initiative supports research to understand the biological mechanisms for cancer disparities among various racial and ethnic populations. The program investigates genetic/biological differences and cellular mechanisms that may lead to

cancer disparities among various populations. The Centers for Population Health and Health Disparities (CPHHD) program supports transdisciplinary research involving social, behavioral, biological, and genetic studies to improve knowledge of the causes of health disparities and devise effective methods of preventing, diagnosing, and treating disease and promoting health. Using a regional approach, the Geographical Management of Cancer Health Disparities Program (G/BMaP) is working to support biospecimen collection, development of bioinformatics platforms, clinical trials recruitment and retention, emerging technologies applications, and the development of health disparities research projects in racial/ethnic minority and underserved communities. As part of a broader Center to Reduce Cancer Health Disparities Biospecimen Awareness/Education and Collection Campaign, G/BMaP is also working to raise awareness about the importance of biospecimens and to educate minority populations about biospecimen research.

Program Portrait: Genomics and Clinical Trials

FY 2012 Level: $3.9 million
FY 2013 Level: $3.7 million
Change: -$0.2 million

In addition to efforts to increase the organization and operational efficiency of NCI's clinical trials system, NCI-supported clinical investigators are integrating genomics into many of their studies to generate the knowledge needed for more precise diagnostic evaluation and improved clinical decision making. Projects funded through the Therapeutically Applicable Research to Generate Effective Treatments (TARGET) initiative, which was expanded using American Recovery and Reinvestment Act funding, are identifying potential therapeutic targets in several common childhood cancers and studying correlations between genomic variation and treatment outcomes. TARGET investigators recently discovered a link between ancestry-related genomic variation and risk of relapse in patients with acute lymphoblastic leukemia; importantly, the elevated risk of relapse could be abrogated with the addition of a single phase of chemotherapy, illustrating the potential of this type of research to directly benefit patients. The Repository of Molecular Brain Neoplasia Data (REMBRANDT) is a Web-based portal that integrates genomic data from several hundred brain tumors with clinical information about how patients responded to treatments, allowing researchers to dissect relationships between genomic traits and outcomes as well as conduct computer-based investigations of potential therapeutic targets. The Trial Assigning Individualized Options for Treatment, or TAILORx, is examining the possibility that a molecular profiling test that examines many genes simultaneously can help predict whether women with early-stage breast cancer would benefit from chemotherapy in addition to radiation and hormonal therapy. Incorporation of molecular data into clinical decision making could spare some women unnecessary treatment if chemotherapy is not likely to impart substantial benefit.

Improving Cancer Prevention and Control: Cancer prevention research focuses on a number of areas, including understanding and modifying behaviors that affect risk, reducing exposure to carcinogenic factors, mitigating the influence of genetic and environmental risks, and interrupting cancer development through early intervention. Screening tools can help prevent cancer if they are capable of detecting precancerous lesions that can then be treated appropriately, based on an accurate assessment of their malignant potential. Research in the area of cancer control seeks to better understand the factors that influence cancer outcomes, quality of care, quality of life, and cancer-related health disparities.

Budget Policy: The FY 2013 President's Budget request is $197.921 million, an increase of $0.117 million, or 0.06 percent compared to the FY 2012 Enacted level. The genomic

characterization of cancers has potential to help development of preventive interventions, in part through facilitating identification of precancerous lesions. For example, the recent characterization of ovarian tumors through TCGA may inform development of a much needed screening assay for this disease, which is currently often diagnosed in late stages. Genomic studies may also identify targets for chemoprevention. The Consortia for Early Phase Prevention Trials involve six major cancer research centers that lead multiple collaborative networks to assess the cancer prevention potential of new agents, with a focus on phase I and II clinical trials. In addition to designing and conducting trials and recruiting participants, the Consortia work to (1) characterize the effects of potential agents on molecular targets; (2) identify biological events associated with cancer development; and (3) correlate these effects with clinical endpoints. Continued emphasis will be placed on identifying molecular drug targets, developing successful prevention strategies, and bringing these findings into clinical practice.

Although smoking rates have declined over the past several decades, tobacco cessation continues to provide tremendous opportunity for cancer prevention. The State and Community Tobacco Control Policy and Media Research initiative will investigate the effectiveness of the state and community tobacco control policy and media interventions. Focus areas include secondhand smoke policies, tax and pricing policies, tobacco industry marketing and promotion, mass media countermeasures, and community and social norms.

The Health Maintenance Organization (HMO) Cancer Research Network (CRN) conducts cancer prevention, early detection, treatment, long-term care, and surveillance research, using data systems of 14 HMOs nationwide. Studies of lifestyle change include research into energy balance (integrated effects of diet, physical activity, and genetics on growth and body weight) as a way to control cancer incidence. The Surveillance, Epidemiology and End Results (SEER) program, which has collected data since 1973, regularly samples approximately 26 percent of the U.S. population and has obtained information on 5.7 million cancer cases—380,000 cases are added each year. This database provides critical data on cancer trends.

The National Outreach Network (NON) is a multidisciplinary program that bridges NCI-supported outreach and community education efforts with cancer health disparities research and training programs. Working through community health educators, NON disseminates cancer information and approaches tailored to racial/ethnic communities for cancer prevention and control and also works to enhance recruitment and retention in cancer research.

Program Portrait: Global Health and Cancer Research

FY 2012 Level: $47.0 million
FY 2013 Level: $45.8 million
Change: -$1.2 million

In 2008, nearly 7.6 million people died from cancer worldwide and this number is expected to be as high as 13.2 million by 2030. Less developed nations are shouldering an increasing proportion of the global cancer burden. While just over half of all cancer cases were in the less developed countries in 2002, this may rise to nearly 70 percent by 2030. NCI recently established the Center for Global Health (CGH) to coordinate and prioritize the Institute's research and training efforts that have potential to directly influence global cancer health, primarily in poorer countries. In addition to fulfilling a humanitarian role, expanding the population base and sociocultural context for cancer research beyond the United States will yield insights into cancer that would not otherwise be attainable.

Areas ripe for investigation on the international stage include tobacco use and infectious agents. Although tobacco use has been declining in the United States and many other wealthy nations, it is rising at alarming rates in low-income countries. NCI is working with the NIH Fogarty International Center to reduce worldwide tobacco use worldwide and build tobacco research capacity in many countries. NCI is also a partner in the International Tobacco Control Policy Evaluation Project, the first-ever international cohort study of tobacco use. About a quarter of life-threatening cancers in the developing world are the result of infections with viruses, bacteria, and parasites. NCI has had a long-term partnership with researchers in Costa Rica, where cervical cancer rates are high, to study Cervarix, a vaccine developed to prevent persistent infections with cancer-causing types of human papillomavirus. In addition to confirming the efficacy of the vaccine, recent results of this research suggest that fewer than the prescribed three doses of Cervarix may offer the same protection as the full course, a finding with implications for cancer control programs in the developing world. NCI also supports research in Africa and Asia related to cancers that develop in individuals infected with HIV, Epstein-Barr virus, hepatitis, and *Helicobacter pylori*.

NCI supports training of scientists and medical personnel from other countries through a variety of mechanisms. For example, numerous international researchers are trained in intramural and extramural laboratories and individuals from dozens of nations have participated in the Cancer Prevention and Control course offered by NCI each year.

Cancer Centers: The Cancer Centers Program focuses on transdisciplinary approaches to basic, population, and clinical research. Centers with comprehensive designation must have ongoing research in each of these areas and must also support professional and public education activities in the communities they serve. NCI-designated Cancer Centers are committed to delivering high-quality care and are increasingly reaching out to community oncology practices and minority and underserved patient populations.

Budget Policy: The FY 2013 President's Budget request is $578.340 million, an increase of $0.206 million, or 0.04 percent compared to the FY 2012 Enacted level. The 66 NCI-designated Cancer Centers conduct some of the highest quality basic, translational, and population research to improve cancer prevention, diagnosis, and treatment while also stimulating innovative pilot projects in new investigational areas.

Research Workforce Development: NCI is committed to cultivating and supporting a strong cadre of researchers that span the career continuum; gaps at any stage of this continuum will compromise the quality of cancer research. Investment in early-stage investigators are needed to

attract strong talent and ensure the future of cancer research, but support is also needed for established investigators who have proven their ability to conduct robust science and who provide mentoring for the next generation of researchers.

Budget Policy: The FY 2013 President's Budget request is $174.175 million, an increase of $0.099 million, or 0.06 percent compared to the FY 2012 Enacted level. NCI supports training within the intramural research program and through training awards to institutions and individuals in the extramural community. NIH will continue to invest in attracting the best and brightest graduate students and postdoctoral fellows through the Ruth L. Kirschstein National Research Service Award (NRSA) training program. NCI-awarded NRSAs support the training and mentoring of predoctoral and M.D./Ph.D. or other dual-degree students in laboratory and/or clinical research, helping them to become productive, independent research investigators and clinician-scientists. NCI will provide an increase of 2% for of NRSA stipend adjustments consistent with the recommendations of the National Academy of Sciences in its 2000 report, *Addressing the Nation's Changing Needs for Biomedical and Behavioral Scientists*. NCI is also committed to attracting and supporting scientists from populations underrepresented in biomedical research through efforts such as those conducted by the Center to Reduce Cancer Health Disparities Diversity Training Branch.

NCI supports training in a number of disciplines. The NIH-wide Basic Behavioral and Social Science Opportunity Network (OppNet) offers educational activities and short-term career development experience to encourage new and established investigators to engage in basic behavioral and social science research. The Interagency Oncology Taskforce (IOTF), a partnership with the U.S. Food and Drug Administration (FDA), is designed to train scientists in cancer-related scientific research and research-related regulatory review, policies, and regulations.

NCI also offers support to investigators interested in translational and clinical research. The SPORE Career Development Programs support investigators who wish to develop or refocus their careers on translational cancer research in specific organ-site malignancies. The Cancer Clinical Investigator Team Leadership awards provide two years of funding to exceptional mid-level clinical investigators who lead NCI-sponsored clinical trials but are not principal investigators at NCI-designated Cancer Centers.

Buildings and Facilities: In 2010, NCI broke ground on a new campus in Shady Grove, MD. When it opens in 2013, NCI Shady Grove will feature two new custom-built, state-of-the-art buildings containing 490,000 net square feet of usable space, a gain of 60,000 square feet over current facilities. The new campus will consolidate more than 2,000 staff currently housed in five buildings at two locations..

Budget Policy: The FY 2013 President's Budget request is $7.920 million, the same as the FY 2012 Enacted level. This funding will be used strictly for renovations and improvements at NCI-Frederick. Funding for the NCI Shady Grove facilities described above will come from NCI's regular operations and its costs are spread across the several budget activities.

Research Management and Support: NCI's research management and support personnel fulfill a key and indispensible role within the Institute by supporting and enabling the activities and success of all NCI-funded researchers. This staff conducts activities that include but are not

limited to central administration, overall program direction, grant and contract administration, human resources, program coordination, and financial management.

Budget Policy: The FY 2013 President's Budget request for the Research Management and Support program is $374.664 million, an increase of $0.187 million, or 0.05 percent compared to the FY 2012 Enacted level.

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Budget Authority by Object
(Dollars in Thousands)

	FY 2012 Enacted	FY 2013 PB	Increase or Decrease
Total compensable workyears:			
Full-time employment	3,135	3,104	(31)
Full-time equivalent of overtime and holiday hours	5	5	0
Average ES salary (*in dollars*)	$173,113	$171,401	($1,712)
Average GM/GS grade	12.2	12.2	0.0
Average GM/GS salary (*in dollars)*	$98,136	$97,166	($970)
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207) *(in dollars)*	$94,091	$93,150	($941)
Average salary of ungraded positions (*in dollars*)	130,093	128,792	(1,301)

	OBJECT CLASSES	FY 2012 Enacted	FY 2013 PB	Increase or Decrease
	Personnel Compensation:			
11.1	Full-time permanent	$207,552	$207,691	$139
11.3	Other than full-time permanent	124,555	124,681	126
11.5	Other personnel compensation	12,069	12,077	8
11.7	Military personnel	4,873	4,951	78
11.8	Special personnel services payments	50,222	50,274	52
	Total, Personnel Compensation	**$399,271**	**$399,674**	**$403**
12.0	Personnel benefits	$98,660	$96,805	($1,855)
12.2	Military personnel benefits	3,371	3,361	(10)
13.0	Benefits for former personnel	0	0	0
	Subtotal, Pay Costs	**$501,302**	**$499,840**	**($1,462)**
21.0	Travel and transportation of persons	$15,672	$15,672	$0
22.0	Transportation of things	1,348	1,348	0
23.1	Rental payments to GSA	855	855	0
23.2	Rental payments to others	312	312	0
23.3	Communications, utilities and miscellaneous charges	6,852	6,852	0
24.0	Printing and reproduction	1,559	1,559	0
25.1	Consulting services	12,149	12,153	4
25.2	Other services	190,450	190,470	20
25.3	Purchase of goods and services from government accounts	552,131	593,978	41,847
25.4	Operation and maintenance of facilities	42,805	42,657	(148)
25.5	Research and development contracts	400,012	365,284	(34,728)
25.6	Medical care	3,313	3,313	0
25.7	Operation and maintenance of equipment	15,407	15,407	0
25.8	Subsistence and support of persons	2	2	0
25.0	**Subtotal, Other Contractual Services**	**$1,216,269**	**$1,223,264**	**$6,995**
26.0	Supplies and materials	$37,546	$37,546	$0
31.0	Equipment	15,814	11,712	(4,102)
32.0	Land and structures	5	5	0
33.0	Investments and loans	0	0	0
41.0	Grants, subsidies and contributions	3,268,609	3,269,895	1,286
42.0	Insurance claims and indemnities	1	1	0
43.0	Interest and dividends	3	3	0
44.0	Refunds	0	0	0
	Subtotal, Non-Pay Costs	**$4,564,845**	**$4,569,024**	**$4,179**
	Total Budget Authority by Object	**$5,066,147**	**$5,068,864**	**$2,717**

Includes FTEs which are reimbursed from the NIH Common Fund.

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Salaries and Expenses
(Dollars in Thousands)

OBJECT CLASSES	FY 2012 Enacted	FY 2013 PB	Increase or Decrease
Personnel Compensation:			
Full-time permanent (11.1)	$207,552	$207,691	$139
Other than full-time permanent (11.3)	124,555	124,681	126
Other personnel compensation (11.5)	12,069	12,077	8
Military personnel (11.7)	4,873	4,951	78
Special personnel services payments (11.8)	50,222	50,274	52
Total Personnel Compensation (11.9)	**$399,271**	**$399,674**	**$403**
Civilian personnel benefits (12.1)	$98,660	$96,805	($1,855)
Military personnel benefits (12.2)	3,371	3,361	(10)
Benefits to former personnel (13.0)	0	0	0
Subtotal, Pay Costs	**$501,302**	**$499,840**	**($1,462)**
Travel (21.0)	$15,672	$15,672	$0
Transportation of things (22.0)	1,348	1,348	0
Rental payments to others (23.2)	312	312	0
Communications, utilities and miscellaneous charges (23.3)	6,852	6,852	0
Printing and reproduction (24.0)	1,559	1,559	0
Other Contractual Services:			
Advisory and assistance services (25.1)	12,149	12,153	4
Other services (25.2)	190,450	190,470	20
Purchases from government accounts (25.3)	412,699	418,935	6,236
Operation and maintenance of facilities (25.4)	30,504	30,504	0
Operation and maintenance of equipment (25.7)	15,407	15,407	0
Subsistence and support of persons (25.8)	2	2	0
Subtotal Other Contractual Services	**$661,211**	**$667,471**	**$6,260**
Supplies and materials (26.0)	$37,151	$37,151	$0
Subtotal, Non-Pay Costs	$724,105	$730,365	$6,260
Total, Administrative Costs	**$1,225,407**	**$1,230,205**	**$4,798**

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Details of Full-Time Equivalent Employment (FTEs)

OFFICE/DIVISION	FY 2011 Actual			FY 2012 Enacted			FY 2013 PB		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Office of the Director									
Direct:	840	5	845	840	5	845	832	5	837
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	840	5	845	840	5	845	832	5	837
Center for Cancer Research									
Direct:	1,547	24	1,571	1,547	24	1,571	1,531	24	1,555
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	1,547	24	1,571	1,547	24	1,571	1,531	24	1,555
Division of Cancer Biology									
Direct:	41	0	41	41	0	41	41	0	41
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	41	0	41	41	0	41	41	0	41
Division of Extramural Activities									
Direct:	91	0	91	91	0	91	90	0	90
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	91	0	91	91	0	91	90	0	90
Division of Cancer Treatment and Diagnosis									
Direct:	189	5	194	189	5	194	187	5	192
Reimbursable:	2	0	2	2	0	2	2	0	2
Total:	191	5	196	191	5	196	189	5	194
Division of Cancer Prevention									
Direct:	80	1	81	80	1	81	79	1	80
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	80	1	81	80	1	81	79	1	80
Division of Cancer Control and Population Sciences									
Direct:	141	3	144	141	3	144	140	3	143
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	141	3	144	141	3	144	140	3	143
Division of Cancer Epidemiology and Genetics									
Direct:	158	8	166	158	8	166	156	8	164
Reimbursable:	0	0	0	0	0	0	0	0	0
Total:	158	8	166	158	8	166	156	8	164
Total	3,089	46	3,135	3,089	46	3,135	3,058	46	3,104
Includes FTEs which are reimbursed from the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements	0	0	6	0	0	6	0	0	6

FISCAL YEAR	Average GS Grade
2009	12.0
2010	12.0
2011	12.2
2012	12.2
2013	12.2

NATIONAL INSTITUTES OF HEALTH
National Cancer Institute

Detail of Positions

GRADE	FY 2011 Actual	FY 2012 Enacted	FY 2013 PB
Total, ES Positions	4	4	3
Total, ES Salary	692,451	692,451	514,203
GM/GS-15	245	245	243
GM/GS-14	450	450	446
GM/GS-13	408	408	404
GS-12	505	505	500
GS-11	214	214	212
GS-10	11	11	11
GS-9	142	142	141
GS-8	107	107	106
GS-7	55	55	54
GS-6	11	11	11
GS-5	12	12	12
GS-4	14	14	14
GS-3	2	2	2
GS-2	3	3	3
GS-1	0	0	0
Subtotal	2,179	2,179	2,159
Grades established by Act of July 1, 1944 (42 U.S.C. 207):			
Assistant Surgeon General	0	0	0
Director Grade	24	24	24
Senior Grade	10	10	10
Full Grade	6	6	6
Senior Assistant Grade	3	3	3
Assistant Grade	2	2	2
Subtotal	45	45	45
Ungraded	981	981	971
Total permanent positions	2,229	2,229	2,207
Total positions, end of year	3,209	3,209	3,177
Total full-time equivalent (FTE) employment, end of year	3,135	3,135	3,104
Average ES salary	173,113	173,113	171,401
Average GM/GS grade	12.2	12.2	12.2
Average GM/GS salary	98,136	98,136	97,166

Includes FTEs which are reimbursed from the NIH Common Fund.