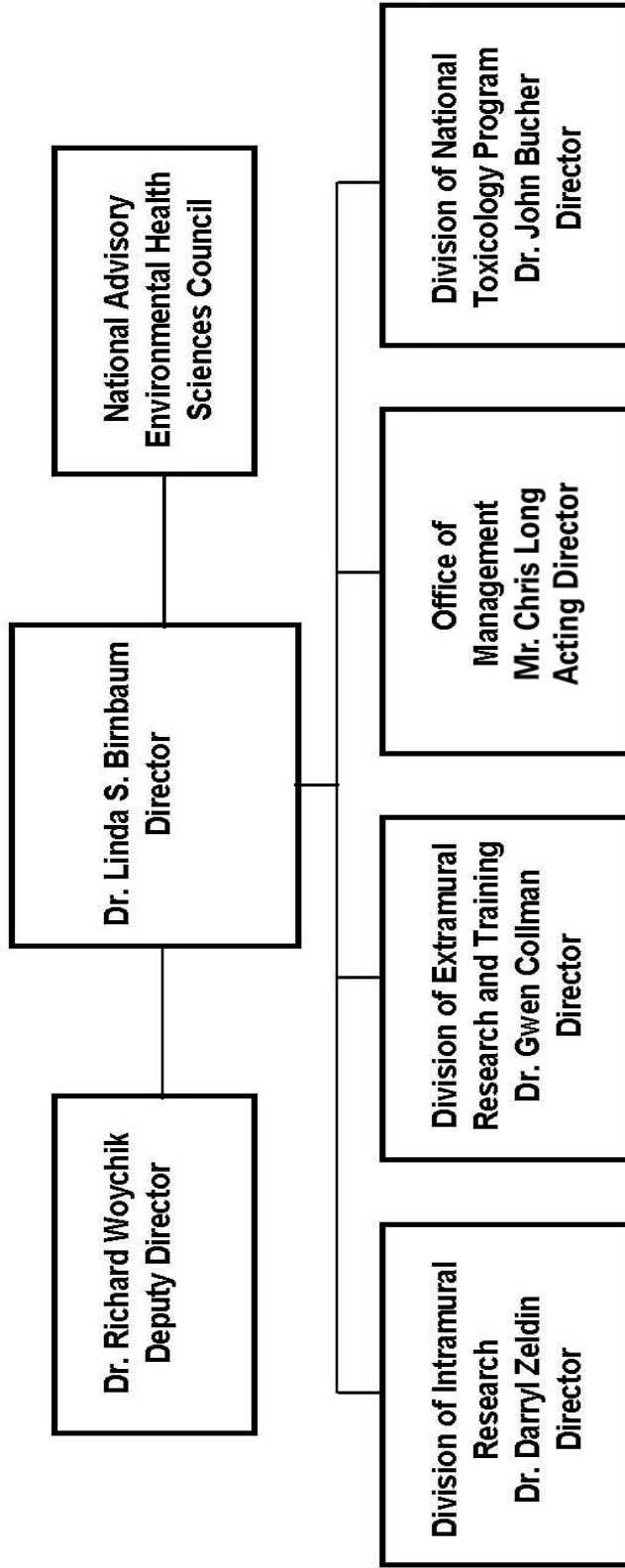


DEPARTMENT OF HEALTH AND HUMAN SERVICES
NATIONAL INSTITUTES OF HEALTH
National Institute of Environmental Health Sciences (NIEHS)
Department of Interior and Related Agencies Appropriations
Superfund-Related Activities

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NATIONAL INSTITUTES OF HEALTH
National Institute of Environmental Health Sciences

Organization Structure



NATIONAL INSTITUTES OF HEALTH

National Institute of Environmental Health Sciences
Department of Interior, Environment, and Related Agencies Appropriations
Superfund Related Activities

For necessary expenses for the National Institute of Environmental Health Sciences in carrying out activities set forth in section 311(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C.9660(a)) and section 126(g) of the Superfund Amendments and Reauthorization Act of 1986, \$77,349,000.

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Amounts Available for Obligation¹
(Dollars in Thousands)

Source of Funding	FY 2015 Actual	FY 2016 Enacted	FY 2017 President's Budget
Appropriation	\$77,349	\$77,349	\$77,349
Mandatory Appropriation: (non-add)			
<i>Type 1 Diabetes</i>	(0)	(0)	(0)
<i>Other Mandatory financing</i>	(0)	(0)	(0)
Rescission	0	0	0
Sequestration	0	0	0
FY 2015 First Secretary's Transfer	0	0	0
FY 2015 Second Secretary's Transfer	0	0	0
Subtotal, adjusted appropriation	\$77,349	\$77,349	\$77,349
OAR HIV/AIDS Transfers	0	0	0
National Children's Study Transfers	0	0	0
Subtotal, adjusted budget authority	\$77,349	\$77,349	\$77,349
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	\$77,349	\$77,349	\$77,349
Unobligated balance lapsing	-17	0	0
Total obligations	\$77,332	\$77,349	\$77,349

¹ Excludes the following amounts for reimbursable activities carried out by this account:
FY 2015 - \$9,346 FY 2016 - \$10,100 FY 2017 - \$10,100

**NATIONAL INSTITUTES OF HEALTH
FY 2017 Congressional Justification
Superfund**

Budget Mechanism - Total¹

(Dollars in Thousands)

MECHANISM	FY 2015 Actual		FY 2016 Enacted		FY 2017 President's Budget		FY 2017 +/- FY 2016	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
<u>Research Projects:</u>								
Noncompeting	20	\$35,689	21	\$34,088	16	\$21,789	-5	-\$12,299
Administrative Supplements	(19)	1,053	(23)	9,462	(6)	751	(-17)	-8,711
Competing:								
Renewal	4	7,442			8	19,344	8	19,344
New Supplements	1	160			7	1,375	7	1,375
Subtotal, Competing	5	\$7,602			15	\$20,719	15	\$20,719
Subtotal, RPGs	25	\$44,344	21	\$43,550	31	\$43,259	10	-\$291
SBIR/STTR	11	2,492	14	2,588	14	2,733		145
Research Project Grants	36	\$46,836	35	\$46,138	45	\$45,992	10	-\$146
<u>Research Centers:</u>								
Specialized/Comprehensive								
Clinical Research								
Biotechnology								
Comparative Medicine								
Research Centers in Minority Institutions								
Research Centers								
<u>Other Research:</u>								
Research Careers								
Cancer Education								
Cooperative Clinical Research								
Biomedical Research Support								
Minority Biomedical Research Support								
Other	25	26,398	30	26,773	30	26,900		127
Other Research	25	\$26,398	30	\$26,773	30	\$26,900		\$127
Total Research Grants	61	\$73,234	65	\$72,911	75	\$72,892	10	-\$19
<u>Ruth L. Kirchstein Training Awards:</u>	<u>FITPs</u>		<u>FITPs</u>		<u>FITPs</u>		<u>FITPs</u>	
Individual Awards								
Institutional Awards								
Total Research Training								
Research & Develop. Contracts <i>(SBIR/STTR) (non-add)</i> ²								
Intramural Research								
Res. Management & Support		4,115		4,438		4,457		19
<i>Res. Management & Support (SBIR Admin) (non-add)</i> ²								
<i>Office of the Director - Appropriation</i> ²								
Office of the Director - Other								
<i>ORIP/SEPA (non-add)</i> ²								
<i>Common Fund (non-add)</i> ²								
Buildings and Facilities								
<i>Appropriation</i>								
Type 1 Diabetes								
Program Evaluation Financing								
Cancer Initiative Mandatory Financing								
Other Mandatory Financing								
Subtotal, Labor/HHS Budget Authority		\$77,349		\$77,349		\$77,349		
Interior Appropriation for Superfund Res.								
Total, NIH Discretionary B.A.		\$77,349		\$77,349		\$77,349		
Type 1 Diabetes								
Proposed Law Funding								
Cancer Initiative Mandatory Financing								
Other Mandatory Financing								
Total, NIH Budget Authority		\$77,349		\$77,349		\$77,349		
Program Evaluation Financing								
Total, Program Level		\$77,349		\$77,349		\$77,349		

¹ All Subtotal and Total numbers may not add due to rounding.

² All numbers in italics and brackets are non-add.

Major Changes in the Fiscal Year 2017 Budget Request

Major changes by budget mechanism and/or budget program detail are briefly described below. The FY 2017 President's Budget for NIEHS Superfund is \$77.349 million, which is the same as the FY 2016 Enacted level.

From FY 2016 to FY 2017, there is a shift of research project grant dollars from noncompeting grants and administrative supplements to competing awards. Since 2006, the Superfund Research Program (SRP) has been on an annual review cycle. NIEHS will now begin soliciting applications every two and a half years. Awards will be made for up to five years in duration. These changes are being made to strengthen the breadth of the scientific portfolio and to improve efficiencies in the fiscal management of the program.

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Summary of Changes

(Dollars in Thousands)

FY 2016 Enacted				\$77,349
FY 2017 President's Budget				\$77,349
Net change				\$0
CHANGES	FY 2017 President's Budget		Change from FY 2016	
	FTEs	Budget Authority	FTEs	Budget Authority
<u>A. Built-in:</u>				
<u>1. Intramural Research:</u>				
a. Annualization of January 2016 pay increase & benefits		\$0		\$0
b. January FY 2017 pay increase & benefits		0		0
c. Two less days of pay		0		0
d. Differences attributable to change in FTE		0		0
e. Payment for centrally furnished services		0		0
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		0		0
Subtotal				\$0
<u>2. Research Management and Support:</u>				
a. Annualization of January 2016 pay increase & benefits		\$1,709		\$7
b. January FY 2017 pay increase & benefits		1,709		24
c. Two less days of pay		1,709		-13
d. Differences attributable to change in FTE		1,709		0
e. Payment for centrally furnished services		29		1
f. Increased cost of laboratory supplies, materials, other expenses, and non-recurring costs		2,719		0
Subtotal				\$19
Subtotal, Built-in				\$19

**NATIONAL INSTITUTES OF HEALTH
Superfund**

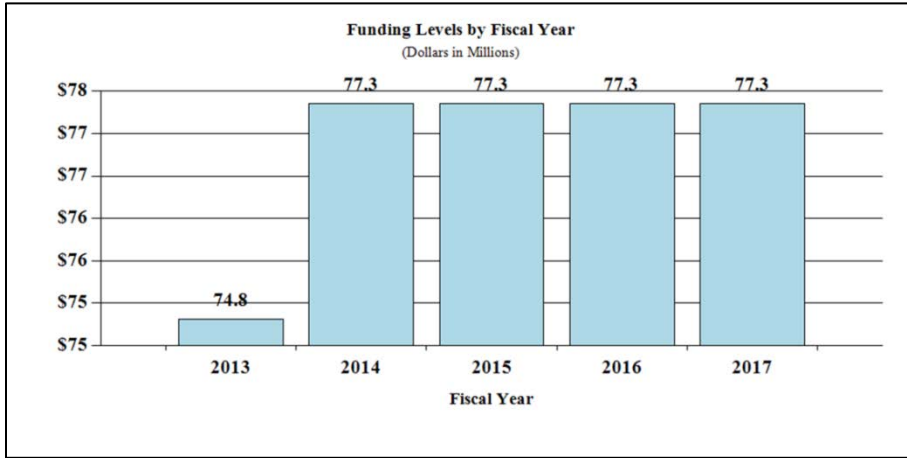
Summary of Changes - Continued

(Dollars in Thousands)

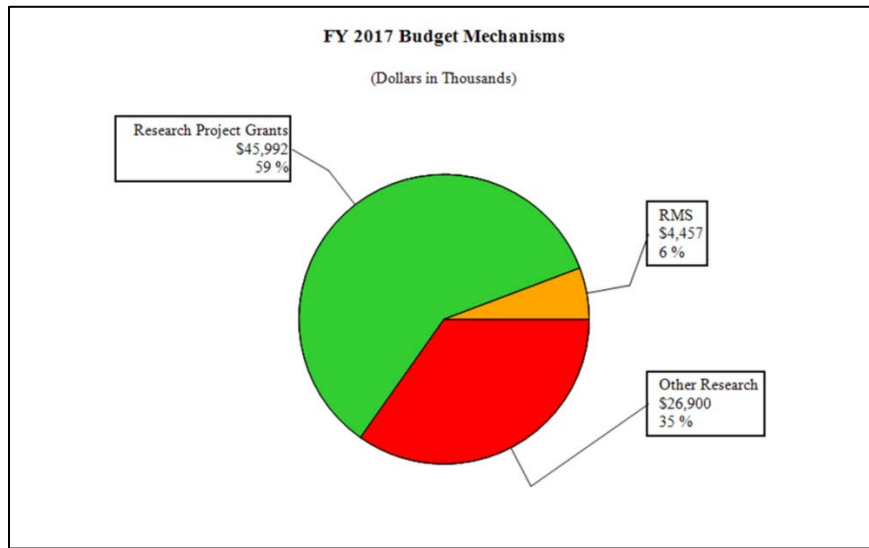
CHANGES	FY 2017 President's Budget		Change from FY 2016	
	No.	Amount	No.	Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	16	\$22,540	-5	-\$21,010
b. Competing	15	20,719	15	20,719
c. SBIR/STTR	14	2,733	0	145
Subtotal, RPGs	45	\$45,992	10	-\$146
2. Research Centers	0	\$0	0	\$0
3. Other Research	30	26,900	0	127
4. Research Training	0	0	0	0
5. Research and development contracts	0	0	0	0
Subtotal, Extramural		\$72,892		-\$19
6. Intramural Research	<u>FTEs</u> 0	\$0	<u>FTEs</u> 0	\$0
7. Research Management and Support	0	4,457	0	0
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	0	\$77,349	0	-\$19
Total changes				\$0

Fiscal Year 2017 Budget Graphs

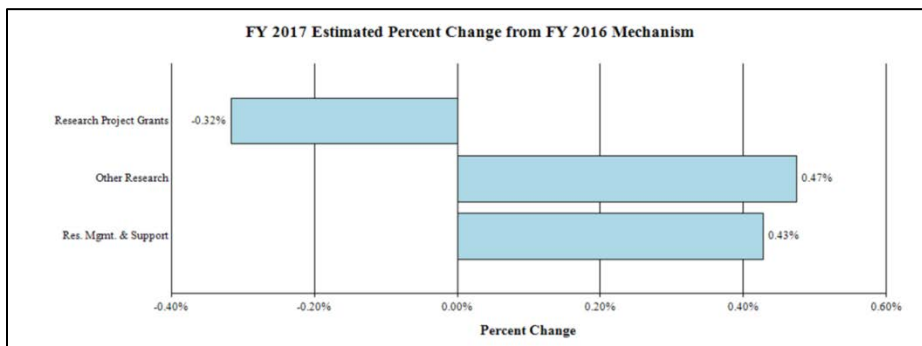
History of Budget Authority:



Distribution by Mechanism:



Change by Selected Mechanism:



**NATIONAL INSTITUTES OF HEALTH
Superfund**

Budget Authority by Activity¹
(Dollars in Thousands)

	FY 2015 Actual		FY 2016 Enacted		FY 2017 President's Budget		FY 2017 +/- FY2016	
	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>
<u>Extramural Research</u>								
<u>Detail</u>								
Superfund Research		\$46,787		\$46,479		\$46,479		\$0
Worker Training Program		26,447		26,432		26,413		-19
Subtotal, Extramural		\$73,234		\$72,911		\$72,892		-\$19
Intramural Research	0	\$0	0	\$0	0	\$0	0	\$0
Research Management & Support	0	\$4,115	0	\$4,438	0	\$4,457	0	\$19
TOTAL	0	\$77,349	0	\$77,349	0	\$77,349	0	\$0

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

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	FY 2016 Enacted	FY 2017 President's Budget
Environmental Protection Agency's Hazardous Substance Superfund	CERCLA Section 311(a)	42§9660 Section 9660(a)	Indefinite	Indefinite
	SARA Section 126(a)	42§9660 Section 9660(a)		
			\$77,349,000	\$77,349,000
Total, Budget Authority			\$77,349,000	\$77,349,000

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2007	\$79,108,000	\$79,414,000	\$78,414,000	\$79,117,000
Rescission				\$0
2008	\$78,434,000	\$79,117,000	\$78,434,000	\$78,775,000
Rescission				\$1,229,000
2009	\$77,546,000	\$78,074,000	\$77,546,000	\$78,074,000
Rescission				\$0
2010	\$79,212,000	\$79,212,000	\$79,212,000	\$79,212,000
Rescission				\$0
2011	\$81,763,000			\$79,212,000
Rescission				\$158,000
2012	\$81,085,000			\$79,054,000
Rescission				\$126,000
2013	\$78,928,000		\$78,928,000	\$78,927,514
Rescission				\$157,855
Sequestration				(\$3,961,618)
2014	\$79,411,000			\$77,349,000
Rescission				\$0
2015	\$77,349,000			\$77,349,000
Rescission				\$0
2016	\$77,349,000	\$77,349,000	\$77,349,000	\$77,349,000
Rescission				\$0
2017	\$77,349,000			

Justification of Budget Request

Superfund

Authorizing Legislation: Section 311(a) of the Comprehensive Environmental, Response, Compensation, and Liability Act of 1980, as amended, and Section 126(g) of the Superfund Amendments and Reauthorization Act of 1986.

Budget Authority (BA):

FY 2015 Actual	FY 2016 Enacted	FY 2017 President's Budget	FY 2017+ / - FY 2016
\$77,349,000	\$77,349,000	\$77,349,000	0

FTEs are included with the regular NIEHS appropriation.

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements and Other.

Director's Overview

The National Institutes of Health (NIH)/National Institute of Environmental Health Sciences (NIEHS) Hazardous Substance Basic Research and Training Program, or Superfund Research Program (SRP), and the NIH/NIEHS Superfund Worker Training Program (WTP) were created under the Superfund Amendments and Reauthorization Act (SARA) of 1986 to meet the need for innovative strategies and technologies to provide solutions to the magnitude and complexity of Superfund assessment and remediation. SRP fosters multidisciplinary research, fundamental creative discoveries, and innovative research strategies focused on solving problems related to Superfund sites. WTP provides health and safety training to hazardous waste cleanup workers and emergency responders. SRP and WTP address challenges posed by environmental contamination, such as health risks, prevention and intervention strategies, emergency response efforts, and cost-effective remediation related to hazardous waste found throughout the United States.

SRP funds scientific discovery through its ongoing support of translational research. For example, an SRP-funded small business, Blue Planet Strategies, developed and patented the Dynamic Electrolytic Mine Effluent Treatment (DEMET) technology, which uses electricity to effectively concentrate copper from waste generated as a result of mining operations. The concentrated product can then be used in conventional processing systems to recover copper.

Additionally, SRP strengthens and sustains community partnerships and training activities to reduce environmental public health risks. SRP-funded experts joined a community forum in Winston-Salem, North Carolina, to educate communities on two schools located over contaminated groundwater about the potential health effects of chemical exposures. After learning that harmful chemicals could be seeping into the air inside the schools, parents were naturally concerned about the effects of air quality on their children's health. During the meeting

with parents and school officials, grantees from SRP answered questions about the chemicals and the process of vapor intrusion into classrooms at the schools. This coordinated effort to provide technical assistance represents how well SRP functions as a research-focused, solution-oriented program. The SRP risk assessment information provided the school board critical information to protect the health of children.

Similarly, WTP continually seeks to cultivate a diverse, innovative, and productive group of trainees who are dedicated to protect themselves and their communities from exposure to hazardous materials encountered during hazardous waste operations, hazardous materials transportation, and environmental restoration of contaminated facilities or chemical emergency response, thereby supporting the NIH mission. WTP has a demonstrated track record of providing occupational safety and health education in developing and delivering high-quality training to workers who are involved in handling hazardous waste or who are involved in responding to emergencies concerning releases of hazardous materials. Since 1987, WTP has developed a strong network of non-profit organizations that are committed to protecting workers and their communities by delivering high-quality, peer-reviewed safety and health curricula. Between August 2014 and July 2015, WTP awardees conducted over 9,400 courses for over 167,000 workers. Since the inception of WTP, nearly three million workers have been trained with a focus on protecting our communities.

Overall Budget Policy:

The FY 2017 President's Budget request for NIEHS Superfund is \$77.349 million, which is the same as the FY 2016 Enacted level.

Program Descriptions and Accomplishments

SRP: Through an interdisciplinary and multidisciplinary research platform, SRP identifies, assesses, and evaluates the potential health effects of exposure to hazardous waste and develops innovative chemical, physical, and biological technologies for remediating sites contaminated by hazardous substances. Investigators from diverse fields study the underlying biological and environmental principles pertaining to some of the nation's most difficult environmental problems.

SRP research provides essential groundwork for tackling newly defined hazards or preventing complex chronic diseases such as cancer. The Oregon State University SRP Center provides an example of how the SRP investments yield rewards and benefits to public health. Scientists there have developed a mechanism-based classification of polycyclic aromatic hydrocarbon (PAH) mixtures to predict carcinogenic potential. PAH's are found throughout the environment and have potentially deleterious health effects. The Oregon SRP-funded researchers used a "source-to-outcome" model that predicts PAH interactions during tumorigenesis and illustrates how mode-of-action-based risk assessment could be employed for environmental PAH mixtures. For at least some PAH mixtures, the new method is not only quicker but produces more accurate cancer-risk assessments than are currently possible.

Understanding how early exposures to toxic substances affect disease progression is another area where SRP research is making progress. SRP-funded researchers at Dartmouth College led a

team that measured arsenic in a previously under-recognized source – common foods. Arsenic exposure is associated with a diverse range of health effects, including several types of cancer, cardiovascular disease, and lung disease. Researchers detected significant concentrations of arsenic in organic brown rice syrup, used as an alternative to high fructose corn syrup in many foods, including toddler formulas. Their research inspired further studies of arsenic in the diet, and they are continuing to identify and quantify dietary sources of arsenic to better reduce exposures.

SRP is also leveraging new technology and the power of computers to enable researchers to gain insights into heretofore unidentified relationships among genes, environment, and behavior that may help explain susceptibility to and progression of disease. A new study by SRP-funded researchers at Boston University and the NIEHS National Toxicology Program (NTP) has shown that computational models of short-term exposure to a chemical can predict long-term cancer risk. The study is a step toward simpler and cheaper tests to screen chemicals for cancer risk.

SRP also develops cost-effective approaches to detect, remove, and/or reduce the amount of toxic substances found in the environment. At the University of Kentucky (UK), SRP-funded environmental science researchers have developed technologies that utilize responsive, functionalized membranes with catalytic particles for high throughput remediation of groundwater contaminated with organic pollutants, such as polychlorinated biphenyls (PCBs) and trichloroethylene (TCE). The UK Superfund Research Center Research Translation Core has facilitated the licensing of these technologies to ULTURA in Oceanside, California, for industrial production and high throughput filtration module development. These types of functionalized filters will enable faster throughput groundwater remediation at sites such as the Paducah Gaseous Diffusion Plant, which is highly contaminated with TCE. This technology, made possible through SRP funding, has been shown to both completely degrade these organic pollutants and eliminate their toxic effects.

University of Iowa SRP researchers have launched a partnership to clean up PCBs using phytoremediation, a process in which plants are used to contain, degrade, or eliminate contaminants from soils and water. Working with the town of Altavista, Virginia, and Ecolotree Inc., a small business focusing on phytoremediation, scientists are using poplar trees to reduce exposures from a PCB-contaminated lagoon. They are also studying the processes that influence PCB containment and detoxification by the poplar trees, with the goal of minimizing airborne exposures and reducing health risks to the community. Researchers have also found that switchgrass, a plant native to central North America, can effectively remove PCBs from contaminated soil. When PCB-degrading bacteria are added, removal of PCBs from the soil can increase further. This phytoremediation method may be an efficient and sustainable strategy to removing PCBs from hazardous waste sites.

Nanomaterials made of cellulose – a natural polymer used mainly to produce paper – hold great promise in environmental remediation applications and water filtration membranes, according to Duke University SRP researchers. In a compilation of research findings, Duke SRP researchers outlined the physical and chemical properties, production costs, and current use of cellulose nanomaterials.

A significant goal for the SRP is to support research that will forge partnerships, generate training materials, and translate advances to communities that lead to improving the public's health. The SRP Community Engagement and Research Translation Cores at the University of Arizona (UA) have partnered with Arizona tribal community colleges to develop six educational modules focused on tribal mining and associated environmental and sociocultural impacts: Copper Mining and Processing; Reclamation and Remediation; Environmental Impacts; Sociocultural Impacts; Uranium; and Tribal Consultation. More recently, UA SRP researchers weighed in on the recent Gold King Mine Spill, which spilled approximately three million gallons of polluted mine waste water into a tributary of the Animas River in Colorado. UA SRP researchers also put together a brief, "Understanding the Gold King Mine Spill," to explain the extent of the accident, the effects of the spill, and what is being done to control it. This helps community members better understand the potential health and environmental risks to protect themselves and families.

The use of brownfields for urban agriculture can protect the environment and help families with lower socioeconomic status gain access to fresh fruits and vegetables, and, thus, support the fight against obesity. But the potential uptake of toxicants by edible plants in urban brownfields poses environmental public health risks. The SRP-funded University of California, San Diego (UCSD) Center has collaborated with the City of San Diego and the Environmental Protection Agency (EPA) to transform a vacant brownfield site into a community garden. Working with local residents, SRP-funded grantees at UCSD created an environmental learning center that provides residents with answers to their questions about toxicants, cumulative risk, and bioavailability. SRP grantees analyzed plant tissues from the community garden on the brownfield site using inductively coupled plasma-mass spectrometry to monitor metal accumulation in these plants. They are also analyzing how storm water retention structures at the community garden may impact the fate and transport of toxicants by measuring how soil contaminants change over time within the context of storm water management. Results of the site assessments and plant analysis will be presented to the community. Jointly, these efforts are bringing together key leaders from academia, private sector, government, and nonprofit organizations to critically examine urban agriculture's potential to increase food security in ways that also promote environmental public health and the greening of infrastructure for pollution prevention and bioremediation.

Budget Policy:

The FY 2017 President's Budget estimate for SRP is \$46.479 million, which is the same as the FY 2016 Enacted level.

Program Portrait: Our Water, Our Health

FY2016 Level:\$13.0 million

FY2017 Level:\$13.2 million

Change: +\$0.2 million

As states grapple with drought of epic proportions, as well as natural disasters that impact water quality, SRP takes a multi-disciplinary look at all aspects of water. SRP tackles health impacts of water contamination, develops solutions to reduce exposures, and applies innovative remediation technologies to protect water resources from the impact of hazardous substances.

A first step in public health research is identifying exposures that may cause harm. SRP-funded research at the Harvard School of Public Health provided insight into the implications of drinking water contaminants - such as lead, arsenic, and manganese – identifying neurotoxic risks of both low and high-dose exposures. At Boston University, SRP researchers have determined that early-life exposure to tetrachloroethylene (also known as perchloroethylene or “PERC”) in drinking water may increase the risk of epilepsy and certain types of cancer into adulthood. PERC is a solvent frequently used in dry cleaning solutions, adhesives, metal degreasers, and other commercial products. In another study, University of Arizona SRP-supported researchers found that *in utero* and early-life exposure to arsenic through drinking water was associated with poor lung function in children. Although several studies have reported more respiratory symptoms and diseases in people highly exposed to arsenic through drinking water, this is one of the first studies to look at early-life arsenic exposure and lung function in children. Based on the results of the study, the researchers say that controlling exposure to arsenic during critical early-life lung development may be important for reducing deficits in lung function tied to arsenic exposure.

Detection of contaminants is also an important part of protecting water resources. For example, SRP grantees are developing ways to measure lead, TCE, perchlorate, arsenic, and many other pollutants that include, for example, easy-to-use test strips for lead that can be applied to a number of exposure scenarios.

A subsequent step in the progression of public health research is to determine methods to prevent or reduce harmful exposures. At Columbia University, SRP-funded research has discovered ways to improve the cleanup of arsenic from contaminated aquifers at Superfund sites. This research suggests that a single injection of safe, inexpensive compounds into groundwater could form a barrier to trap dissolved arsenic for 10-20 years, greatly reducing the threat of groundwater contamination. SRP researchers continue to use lab and field experiments to increase the efficiency of their strategy to immobilize arsenic in aquifers and to better understand its long-term use.

University of California, Berkeley SRP researchers are developing a compact and inexpensive treatment system that has the potential to be employed for wellhead treatment or point-of-use treatment in situations where water is contaminated with organic chemicals. The system has numerous advantages over existing approaches because it can be operated without the need to replenish reagents or replace materials (e.g., as is the case with activated carbon). Additional research is being conducted to test the long-term performance of the system, incorporate sensors, and reduce the cost of the electrodes.

Microvi, an NIEHS SRP-funded Small Business, is developing a first-of-its-kind biological approach for 1,4-dioxane degradation. The technology, called MB-DX, uses microbes that degrade 1,4-dioxane effectively and reliably. The approach also overcomes common challenges to bioreactor performance, such as system stability and clogging. The company has successfully developed a prototype, which is now being scaled-up and piloted at a contaminated site in California. A suspected carcinogen, 1,4-dioxane is difficult to remove with conventional water treatment technologies.

WTP: The major objectives of WTP are to prevent work-related harm by training workers in how best to protect themselves and their communities from exposure to hazardous materials encountered during hazardous waste operations, hazardous materials transportation, environmental restoration, or chemical emergency response, and to undertake brownfields, construction, and environmental workforce development training for disadvantaged

communities. A variety of hazardous sites, such as those involved with chemical waste cleanup, remedial action, and transportation-related chemical emergency response, may pose severe health and safety concerns. These are often characterized by a multiplicity of substances present, the presence of unknown substances, and the general uncontrolled condition of the site. A major goal of WTP is to assist organizations in providing training and education programs in hazardous materials and disaster response.

To optimize its use of taxpayer funds, WTP manages resources through key partnerships across the Nation – with other Federal agencies, the private sector, and academic institutions. Through WTP training, municipalities’ capacity for response to everyday hazardous incidents is strengthened by collaborating with health departments, police, public safety, and fire fighters throughout the United States and with Tribal governments. The Midwest Consortium for Hazardous Waste Worker Training includes Lakeshore Technical College (LTC) in Cleveland, Wisconsin (WI). Regarding LTC training, a Boltonville Fire Department Emergency Responder stated, “On the evening of July 20, 2014, the Washington County Hazardous Materials response team was requested at the scene of a collision and derailment between two trains near the city of Slinger, WI. While there were fortunately no fatalities, the collision did result in the release of approximately 4,000 gallons of diesel fuel. The Emergency Response Technician training I received at LTC assisted me in responding, assessing the environment, and ensuring mitigation that was safe for responders and the environment.”

Another example of WTP training and partnerships is the Western Region University Consortium, led by the University of California, Los Angeles, which includes the University of Washington (UW). UW provided training and technical assistance, in conjunction with the EPA Region 10 Tribal Office, which effectively doubled the spill response capacity in the watershed region. This training included emergency response, hazardous materials transport, and oil spill cleanup, and was delivered in partnership with the Yukon River Inter-Tribal Watershed Council, an indigenous grassroots organization comprised of 52 tribes in the U.S./Alaska region and 14 First Nations in Canada, covering an estimated 321,500 square miles.

WTP-funded training is economically advantageous as workers are taught cost-effective preventive strategies, and the economic benefit of training that prevents or reduces the impact of a disaster can be substantial. WTP-funded Michigan State University training provided to members of an Emergency Response Team (ERT) at the Ford Kansas City Assembly Plant in Claymoco, Missouri, illustrates this fact. ERT donned Self-Contained Breathing Apparatus and entered a tunnel that ran underneath the plant to look for a leak in paint and solvent lines. During their investigation, they used air monitors to make sure the atmosphere was not flammable and found that approximately 200 gallons of solvent had leaked into the tunnel from one of the solvent lines causing the production line to stop. As a result of their training, the team was able to identify and isolate the leak allowing production to resume. They were able to save the Company \$100,000 in lost production time.

Since 1995, through WTP support, Rutgers (New Jersey/New York Hazardous Materials Worker Training Consortium) has graduated over 560 “at-risk” individuals from the New York-New Jersey metropolitan region under the Environmental Career Worker Training Program. The Program has a successful placement rate of 80 percent and boasts an average post-training wage

of over \$16 per hour. In the 2012 program year, they found a substantial increase in income for program graduates. Prior to enrollment, participants were earning an average of \$8.74 an hour, with an average annual income of less than \$10,000 and 50 percent of enrollees receiving public benefits. For that same cohort, the average placement wage post-program was \$17 an hour, with estimated annual earnings of \$30,000, resulting in a dramatic economic increase for the families served.

Budget Policy:

The FY 2017 President’s Budget estimate for WTP is \$26.413 million, which is a decrease of \$0.019 million or 0.1 percent compared to the FY 2016 Enacted level.

Program Portrait: Increasing the Nation’s Disaster Response Capabilities

FY2016 Level: \$0.5 million

FY2017 Level: \$0.6 million

Change: +\$0.1 million

Nationally, severe weather has impacted workers and their communities. WTP-funded trainers assist impacted communities following natural disasters by providing the latest information and training on best practices for the protection of volunteers, homeowners, and cleanup workers. The New Jersey/New York Hazardous Materials Worker Training Center, for example, is a leading provider of hazardous materials training in New Jersey. After Hurricane Sandy, the Center developed and implemented essential and high quality training across the state that afforded both public health professionals and homeowners prevention and protection strategies, especially related to mold awareness and remediation.

With WTP support, the United Steelworkers (USW) developed a cadre of 19 Special Emergency Response Trainers (SERTs). Of particular importance, they are now developing a new cadre of Spanish-speaking SERTs, adding a valuable skill set to the NIEHS WTP’s national disaster training capacity. This came after USW deployed SERTs for Hurricane Sandy and found that workers needed training in Spanish. There were virtually no Spanish-speaking Occupational Safety and Health Administration (OSHA)-authorized trainers readily available, even though there were nearly one million Spanish-speaking workers in the NY-NJ area. Since then, USW teamed up with “Make the Road New York” and the National Day Laborers Organizing Network to conduct a two-week OSHA course in Spanish. This produced 39 qualified worker trainers. The Assistant Secretary of Labor for OSHA said to the first graduating class of OSHA-authorized Spanish language trainers, “As the eyes and ears of OSHA, you help us protect your co-workers by letting OSHA know when employers may not be living up to their responsibilities.”

The WTP-supported Alabama Fire College Workplace Safety Training program extends training to fire, rescue, emergency medical, emergency management, and law enforcement agencies in the southeastern United States. In the last five-year cycle of grant funding (2010 to 2015), they held 29 classes. These classes give emergency responders skills that they can use on a moment’s notice in a natural disaster, such as the October flooding in South Carolina. In his letter of support for the Alabama Fire College WTP application, the Battalion Chief and Technical Rescue Coordinator for the Mt. Pleasant, SC, Fire Department (Charleston area) stated, “The Mt. Pleasant Fire Department has...been able to depend on high quality training at no cost to our department, in a period when budgets have been cut for specialty training. Your personnel have taught six confined space rescue (CSR) classes teaching approximately 60 Mt. Pleasant members and about 60 members of other local departments. The Charleston area is the home of 373,000 people, tens of thousands of businesses including a major seaport, covered by 14 fire departments. Your classes not only teach the fundamentals of the topics, but also make rescuers from each organization work together during mock scenarios. This helps with interdepartmental relationships. Without your help our department rescue program would not be as strong as it is currently. You provide a service that I cannot replace easily due to lack of funding.”

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Budget Authority by Object Class¹
(Dollars in Thousands)

	FY 2016 Enacted	FY 2017 President's Budget	FY 2017 +/- FY 2016
Total compensable workyears:			
Full-time employment	0	0	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	\$0	\$0	\$0
Average GM/GS grade	0.0	0.0	0.0
Average GM/GS salary	\$0	\$0	\$0
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$0	\$0	\$0
Average salary of ungraded positions	\$0	\$0	\$0
OBJECT CLASSES	FY 2016 Enacted	FY 2017 President's Budget	FY 2017 +/- FY 2016
Personnel Compensation			
11.1 Full-Time Permanent	\$1,060	\$1,068	\$8
11.3 Other Than Full-Time Permanent	211	212	2
11.5 Other Personnel Compensation	12	12	0
11.7 Military Personnel	0	0	0
11.8 Special Personnel Services Payments	0	0	0
11.9 Subtotal Personnel Compensation	\$1,283	\$1,293	\$10
12.1 Civilian Personnel Benefits	\$408	\$416	\$8
12.2 Military Personnel Benefits	0	0	0
13.0 Benefits to Former Personnel	0	0	0
Subtotal Pay Costs	\$1,691	\$1,709	\$18
21.0 Travel & Transportation of Persons	\$158	\$161	\$3
22.0 Transportation of Things	0	0	0
23.1 Rental Payments to GSA	0	0	0
23.2 Rental Payments to Others	0	0	0
23.3 Communications, Utilities & Misc. Charges	0	0	0
24.0 Printing & Reproduction	0	0	0
25.1 Consulting Services	\$49	\$49	\$1
25.2 Other Services	1,705	1,697	-8
25.3 Purchase of goods and services from government accounts	820	825	6
25.4 Operation & Maintenance of Facilities	\$0	\$0	\$0
25.5 R&D Contracts	0	0	0
25.6 Medical Care	0	0	0
25.7 Operation & Maintenance of Equipment	0	0	0
25.8 Subsistence & Support of Persons	0	0	0
25.0 Subtotal Other Contractual Services	\$2,573	\$2,571	-\$2
26.0 Supplies & Materials	\$0	\$0	\$0
31.0 Equipment	15	15	0
32.0 Land and Structures	0	0	0
33.0 Investments & Loans	0	0	0
41.0 Grants, Subsidies & Contributions	72,911	72,892	-19
42.0 Insurance Claims & Indemnities	0	0	0
43.0 Interest & Dividends	0	0	0
44.0 Refunds	0	0	0
Subtotal Non-Pay Costs	\$75,658	\$75,640	-\$18
Total Budget Authority by Object Class	\$77,349	\$77,349	\$0

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

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Salaries and Expenses
(Dollars in Thousands)

OBJECT CLASSES	FY 2016 Enacted	FY 2017 President's Budget	FY 2017 +/- FY 2016
Personnel Compensation			
Full-Time Permanent (11.1)	\$1,060	\$1,068	\$8
Other Than Full-Time Permanent (11.3)	211	212	2
Other Personnel Compensation (11.5)	12	12	0
Military Personnel (11.7)	0	0	0
Special Personnel Services Payments (11.8)	0	0	0
Subtotal Personnel Compensation (11.9)	\$1,283	\$1,293	\$10
Civilian Personnel Benefits (12.1)	\$408	\$416	\$8
Military Personnel Benefits (12.2)	0	0	0
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	\$1,691	\$1,709	\$18
Travel & Transportation of Persons (21.0)	\$158	\$161	\$3
Transportation of Things (22.0)	0	0	0
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	0	0	0
Printing & Reproduction (24.0)	0	0	0
Other Contractual Services:			
Consultant Services (25.1)	49	49	1
Other Services (25.2)	1,705	1,697	-8
Purchases from government accounts (25.3)	820	825	6
Operation & Maintenance of Facilities (25.4)	0	0	0
Operation & Maintenance of Equipment (25.7)	0	0	0
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	\$2,573	\$2,571	-\$2
Supplies & Materials (26.0)	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$2,732	\$2,733	\$1
Total Administrative Costs	\$4,423	\$4,442	\$19

**National Institutes of Health
Budget Request by Institute and Center**

(Dollars in Thousands)	FY 2015 Actual ¹	FY 2016 Enacted ¹	FY 2017 President's Budget ⁵
NCI.....	\$4,953,028	\$5,213,509	\$5,893,509
NHLBI.....	\$2,995,865	\$3,113,533	\$3,113,533
NIDCR.....	\$397,700	\$413,396	\$413,396
NIDDK ²	\$1,899,140	\$1,966,310	\$1,966,310
NINDS.....	\$1,604,607	\$1,695,180	\$1,695,180
NIAID.....	\$4,417,558	\$4,715,697	\$4,715,697
NIGMS ³	\$2,372,301	\$2,512,437	\$2,512,437
NICHD.....	\$1,286,869	\$1,338,348	\$1,338,348
NEI.....	\$676,764	\$707,998	\$707,998
NIEHS ⁴	\$744,682	\$770,882	\$770,882
NIA.....	\$1,197,523	\$1,598,246	\$1,598,246
NIAMS.....	\$521,528	\$541,662	\$541,662
NIDCD.....	\$405,207	\$422,936	\$422,936
NIMH.....	\$1,433,651	\$1,518,673	\$1,518,673
NIDA.....	\$1,015,705	\$1,050,550	\$1,050,550
NIAAA.....	\$447,153	\$467,445	\$467,445
NINR.....	\$140,852	\$145,912	\$145,912
NHGRI.....	\$498,677	\$513,227	\$513,227
NIBIB.....	\$327,243	\$343,506	\$343,506
NIMHD.....	\$270,969	\$280,680	\$280,680
NCCIH.....	\$124,062	\$129,941	\$129,941
NCATS.....	\$632,710	\$685,417	\$685,417
FIC.....	\$67,634	\$70,117	\$70,117
NLM.....	\$337,324	\$395,684	\$395,684
B&F.....	\$128,863	\$128,863	\$128,863
OD.....	\$1,413,734	\$1,571,200	\$1,716,200
TOTAL, NIH Program Level	\$30,311,349	\$32,311,349	\$33,136,349
Mandatory Type 1 Diabetes Research	-\$150,000	-\$150,000	-\$150,000
PHS Program Evaluation	-\$715,000	-\$780,000	-\$847,489
Cancer Initiative Mandatory Financing			-\$680,000
Other Mandatory Financing			-\$1,145,000
Interior Budget Authority	-\$77,349	-\$77,349	-\$77,349
Total, NIH Labor/HHS Budget Authority	\$29,369,000	\$31,304,000	\$30,236,511

¹Excludes Ebola-related funding.

²Includes Mandatory Type 1 Diabetes Research funding.

³Includes Program Evaluation financing of \$715 million in FY 2015, \$780 million in FY 2016, and \$847.5 million in FY 2017.

⁴Includes Interior Appropriation for Superfund research.

⁵Includes Mandatory financing.

NATIONAL INSTITUTES OF HEALTH

FY 2017 Congressional Justification

Budget Mechanism - Total¹

(Dollars in Thousands)	FY 2015 Actual ³		FY 2016 Enacted ³		FY 2017 President's Budget ⁴		FY 2017 +/- FY 2016	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	23,261	\$11,219,523	23,367	\$11,770,028	24,608	\$12,530,526	1,241	\$760,498
Administrative Supplements	(1,595)	193,500	(1,538)	183,451	(1,282)	153,882	(-256)	-29,569
Competing:								
Renewal	1,771	919,382	2,080	1,104,786	1,908	1,030,599	-172	-74,187
New	7,737	3,368,395	8,639	3,942,891	8,011	3,617,296	-628	-325,595
Supplements	32	22,921	34	15,331	27	11,700	-7	-3,630
Subtotal, Competing	9,540	\$4,310,698	10,753	\$5,063,008	9,946	\$4,659,596	-807	-\$403,412
Subtotal, RPGs	32,801	\$15,723,721	34,120	\$17,016,487	34,554	\$17,344,004	434	\$327,517
SBIR/STTR	1,578	717,951	1,720	804,487	1,886	862,616	166	58,129
Research Project Grants	34,379	\$16,441,672	35,840	\$17,820,973	36,440	\$18,206,620	600	\$385,646
Research Centers:								
Specialized/Comprehensive	1,093	\$1,879,582	1,151	\$1,883,688	1,139	\$1,862,491	-12	-\$21,197
Clinical Research	68	424,704	59	410,660	57	399,319	-2	-11,341
Biotechnology	97	171,994	96	173,457	84	151,600	-12	-21,857
Comparative Medicine	52	132,143	48	119,821	47	118,628	-1	-1,193
Research Centers in Minority Institutions	23	54,641	27	57,185	27	57,185	0	0
Research Centers	1,333	\$2,663,064	1,381	\$2,644,811	1,354	\$2,589,224	-27	-\$55,587
Other Research:								
Research Careers	3,593	\$608,205	3,700	\$632,270	3,700	\$641,318	0	\$9,049
Cancer Education	85	28,026	87	28,626	91	29,876	4	1,250
Cooperative Clinical Research	369	421,734	349	447,848	335	442,187	-14	-5,661
Biomedical Research Support	110	66,863	106	64,891	106	64,891	0	0
Minority Biomedical Research Support	278	103,446	283	107,398	282	106,858	-1	-540
Other	1,803	574,449	2,222	729,892	2,342	798,632	120	68,740
Other Research	6,238	\$1,802,722	6,747	\$2,010,924	6,856	\$2,083,762	109	\$72,838
Total Research Grants	41,950	\$20,907,458	43,968	\$22,476,709	44,650	\$22,879,605	682	\$402,896
Ruth L. Kirchstein Training Awards:								
	FITPs		FITPs		FITPs		FITPs	
Individual Awards	3,161	\$136,979	3,346	\$149,840	3,411	\$154,142	65	\$4,302
Institutional Awards	12,429	621,038	12,850	680,590	13,010	694,507	160	13,916
Total Research Training	15,590	\$758,017	16,196	\$830,430	16,421	\$848,649	225	\$18,218
Research & Develop. Contracts (SBIR/STTR) (non-add) ²	2,238 (122)	\$2,827,544 (71,236)	2,263 (128)	\$2,915,243 (80,582)	2,281 (149)	\$3,173,386 (90,960)	18 (21)	\$258,142 (10,378)
Intramural Research	6,912	\$3,410,354	6,956	\$3,581,878	6,956	\$3,614,558	0	\$32,681
Res. Management & Support Res. Management & Support (SBIR Admin) (non-add) ²	5,579 (1)	1,620,334 (4,362)	5,658 (3)	1,685,252 (7,333)	5,658 (3)	1,719,314 (3,794)	0 0	34,062 (-3,539)
Office of the Director - Appropriation ^{2,5}		(1,413,734)		(1,571,200)		(1,716,200)		(145,000)
Office of the Director - Other		573,430		599,625		644,625		45,000
ORIP/SEPA (non-add) ^{2,5}		(294,665)		(295,936)		(295,936)		0
Common Fund (non-add) ^{2,5}		(545,639)		(675,639)		(775,639)		(100,000)
Buildings and Facilities ⁶ Appropriation		136,863 128,863		144,863 128,863		178,863 128,863		34,000 0
Type 1 Diabetes ⁷		-150,000		-150,000		-150,000		0
Program Evaluation Financing ⁸		-715,000		-780,000		-847,489		-67,489
Cancer Initiative Mandatory Financing						-680,000		-680,000
Other Mandatory Financing						-1,145,000		-1,145,000
Subtotal, Labor/HHS Budget Authority		\$29,369,000		\$31,304,000		\$30,236,511		-\$1,067,489
Interior Appropriation for Superfund Research		77,349		77,349		77,349		0
Total, NIH Discretionary B.A.		\$29,446,349		\$31,381,349		\$30,313,860		-\$1,067,489
Type 1 Diabetes		150,000		150,000		150,000		0
Proposed Law Funding								
Cancer Initiative Mandatory Financing						680,000		680,000
Other Mandatory Financing						1,145,000		1,145,000
Total, NIH Budget Authority		\$29,596,349		\$31,531,349		\$32,288,860		\$757,511
Program Evaluation Financing		715,000		780,000		847,489		67,489
Total, Program Level		\$30,311,349		\$32,311,349		\$33,136,349		\$825,000

¹ All Subtotal and Total numbers may not add due to rounding.

² All numbers in italics and brackets are non-add.

³ Excludes Ebola related funding.

⁴ Includes mandatory financing.

⁵ Number of grants and dollars for the Common Fund, ORIP and SEPA components of OD are distributed by mechanism and are noted here as a non-add. The Office of the Director - Appropriations also is noted as a non-add since the remaining funds are accounted for under OD - Other.

⁶ Includes B&F appropriation and funds for facilities repairs and improvements at the NCI Federally Funded Research and Development Center in Frederick, Maryland.

⁷ Number of grants and dollars for mandatory Type 1 Diabetes are distributed by mechanism above; therefore, Type 1 Diabetes amount is deducted to provide subtotals only for the Labor/ HHS Budget Authority.

⁸ Number of grants and dollars for Program Evaluation Financing are distributed by mechanism above; therefore, the amount is deducted to provide subtotals only for the Labor/HHS Budget Authority.

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

Institutes and Centers	FY 2015 Actual	FY 2016 Enacted	FY 2017 President's Budget
NCI.....	2,998	3,029	3,029
NHLBI.....	917	926	926
NIDCR.....	232	234	234
NIDDK.....	631	637	637
NINDS.....	517	522	522
NIAID.....	1,952	1,972	1,972
NIGMS.....	181	183	183
NICHD.....	549	554	554
NEI.....	248	250	250
NIEHS.....	656	662	662
NIA.....	399	403	403
NIAMS.....	237	239	239
NIDCD.....	133	134	134
NIMH.....	536	541	541
NIDA.....	396	400	400
NIAAA.....	237	239	239
NINR.....	92	93	93
NHGRI.....	332	335	335
NIBIB.....	97	98	98
NCATS.....	129	130	130
NCCIH.....	72	73	73
NIMHD.....	63	64	64
FIC.....	61	62	62
NLM.....	803	811	811
OD.....	673	679	679
Central Services ¹	4,683	4,730	4,730
Total	17,824	18,000	18,000
<i>PHS Trust Fund (non-add)</i> ²	4	4	4
<i>CRADA (non-add)</i> ³	5	5	5
Grand Total	17,824	18,000	18,000

¹ Reflects FTE associated with Central Services positions whose payroll costs are covered from NIH Management Fund and NIH Service & Supply Fund resources.

² PHS Trust Fund positions are incorporated within the IC's Direct-funded civilian FTE and are treated as non-add values.

³ CRADA positions are distributed across multiple ICs and are treated as non-add values.