DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of Environmental Health Sciences (NIEHS)

Department of Interior and Related Agencies Appropriations

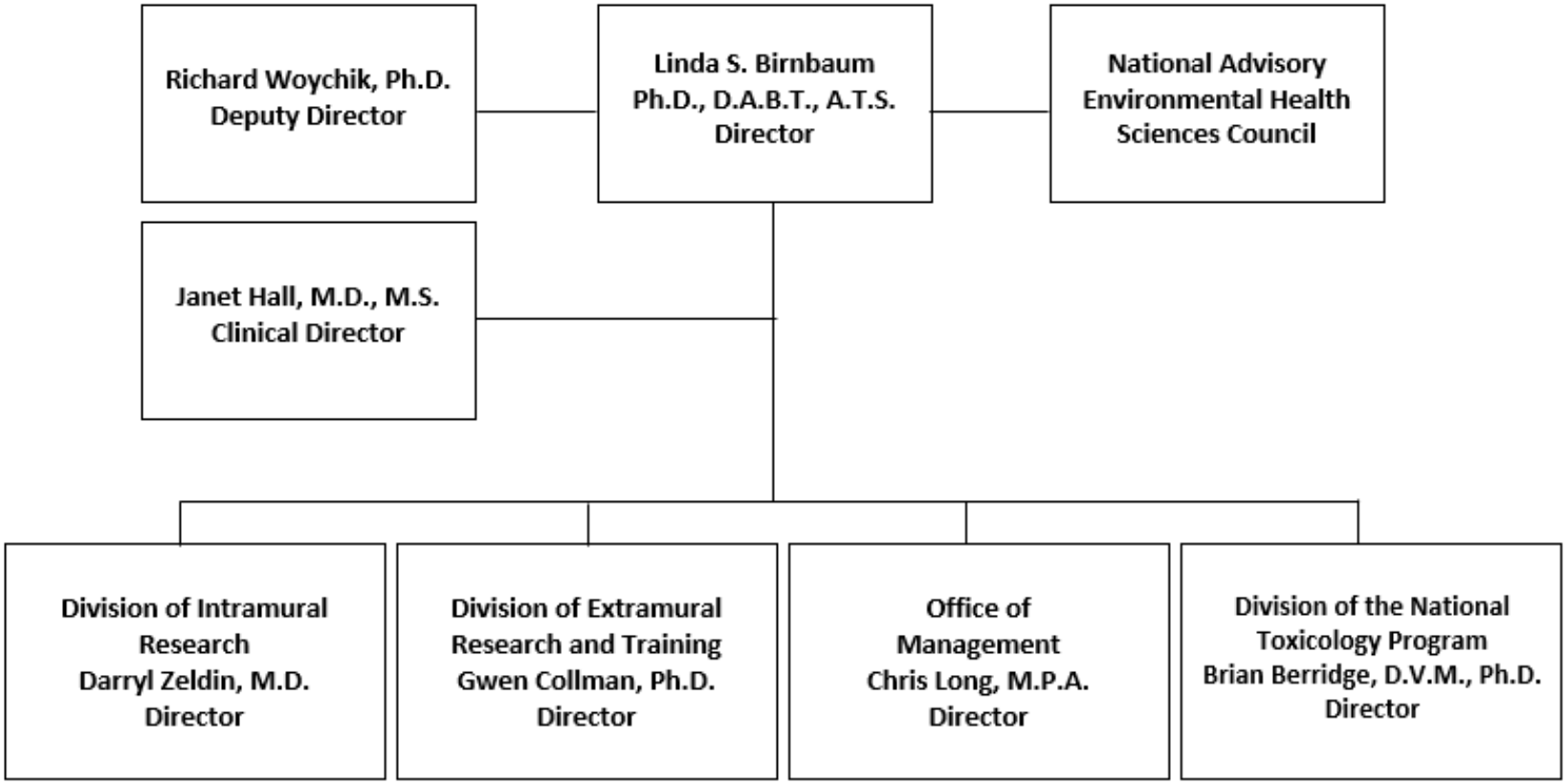
Superfund-Related Activities

FY 2020 Budget — Page No.

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, $66,581,000.

Note.—A full-year 2019 appropriation for this account was not enacted at the time the budget was prepared; therefore, the budget assumes this account is operating under the Continuing Appropriations Act, 2019 (Division C of P.L. 115–245, as amended). The amounts included for 2019 reflect the annualized level provided by the continuing resolution.

NATIONAL INSTITUTES OF HEALTH
Superfund

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

Source of Funding	FY 2018 Final	FY 2019 Annualized CR	FY 2020 President's Budget
Appropriation	$77,349	$77,349	$66,581
Mandatory Appropriation: (non-add)			
Type 1 Diabetes	*(0)*	*(0)*	*(0)*
Other Mandatory financing	*(0)*	*(0)*	*(0)*
Rescission	0	0	0
Sequestration	0	0	0
Secretary's Transfer	0	0	0
Subtotal, adjusted appropriation	$77,349	$77,349	$66,581
OAR HIV/AIDS Transfers	0	0	0
Subtotal, adjusted budget authority	$77,349	$77,349	$66,581
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$77,349	$77,349	$66,581
Unobligated balance lapsing	-7	0	0
Total obligations	$77,342	$77,349	$66,581

[1] Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
FY 2018 - $9,990 FY 2019 - $10,045 FY 2020 - $10,045

NATIONAL INSTITUTES OF HEALTH
Superfund

Budget Mechanism - Total[1]

(Dollars in Thousands)

MECHANISM	FY 2018 Final		FY 2019 Annualized CR		FY 2020 President's Budget		FY 2020 +/- FY 2019 Annualized CR	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	1	$180	1	$154	0	$0	-1	-$154
Administrative Supplements	*(3)*	293	*(0)*	0	*(0)*	0	*(0)*	0
Competing:								
Renewal	0	0	0	0	0	0	0	0
New	1	269	0	0	0	0	0	0
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	1	$269	0	$0	0	$0	0	$0
Subtotal, RPGs	2	$742	1	$154	0	$0	-1	-$154
SBIR/STTR	11	2,682	9	2,399	8	2,060	-1	-338
Research Project Grants	13	$3,424	10	$2,552	8	$2,060	-2	-$492
Research Centers:								
Specialized/Comprehensive	0	$0	0	$0	0	$0	0	$0
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative Medicine	18	43,276	18	43,909	15	37,718	-3	-6,191
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	18	$43,276	18	$43,909	15	$37,718	-3	-$6,191
Other Research:								
Research Careers	0	$0	0	$0	0	$0	0	$0
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	0	0	0	0	0	0	0	0
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	0	0	0	0	0	0	0
Other	30	26,564	30	26,449	28	22,808	-2	-3,641
Other Research	30	$26,564	30	$26,449	28	$22,808	-2	-$3,641
Total Research Grants	61	$73,264	58	$72,911	51	$62,587	-7	-$10,324
Ruth L Kirchstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	0	$0	0	$0	0	$0	0	$0
Institutional Awards	0	0	0	0	0	0	0	0
Total Research Training	0	$0	0	$0	0	$0	0	$0
Research & Develop. Contracts	0	$0	0	$0	0	$0	0	$0
(SBIR/STTR) (non-add)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*
Intramural Research	0	0	0	0	0	0	0	0
Res. Management & Support	0	4,085	0	4,438	0	3,994	0	-444
Res. Management & Support (SBIR Admin) (non-add)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*
Total, Superfund	0	$77,349	0	$77,349	0	$66,581	0	-$10,768

[1] All items in italics and brackets are non-add entries.

Major Changes in the Fiscal Year 2020 Budget Request

Major changes by budget mechanism and/or budget program detail are briefly described below. The FY 2020 President's Budget for NIEHS Superfund is $66.6 million, which is $10.8 million below the FY 2019 annualized CR level.

Research Project Grants (RPGs) (-$0.5 million; total $2.1 million):
NIEHS plans to support a total of 8 RPG awards in FY 2020. Noncompeting RPGs will decrease by 1 award and $0.2 million from the FY 2019 annualized CR level.

NATIONAL INSTITUTES OF HEALTH
Superfund

Summary of Changes

(Dollars in Thousands)

FY 2019 Annualized CR	$77,349
FY 2020 President's Budget	$66,581
Net change	-$10,768

CHANGES	FY 2020 President's Budget		Change from FY 2019 Annualized CR	
	FTEs	**Budget Authority**	**FTEs**	**Budget Authority**
A. Built-in:				
1. Intramural Research:				
a. Annualization of January 2019 pay increase & benefits		$0		$0
b. January FY 2020 pay increase & benefits		0		0
c. Paid days adjustment		0		0
d. Differences attributable to change in FTE		0		0
e. Payment for centrally furnished services		0		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		0		0
Subtotal				$0
2. Research Management and Support:				
a. Annualization of January 2019 pay increase & benefits		$1,755		$3
b. January FY 2020 pay increase & benefits		1,755		10
c. Paid days adjustment		1,755		0
d. Differences attributable to change in FTE		1,755		0
e. Payment for centrally furnished services		14		1
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		2,224		47
Subtotal				$61
Subtotal, Built-in				$61

NATIONAL INSTITUTES OF HEALTH
Superfund

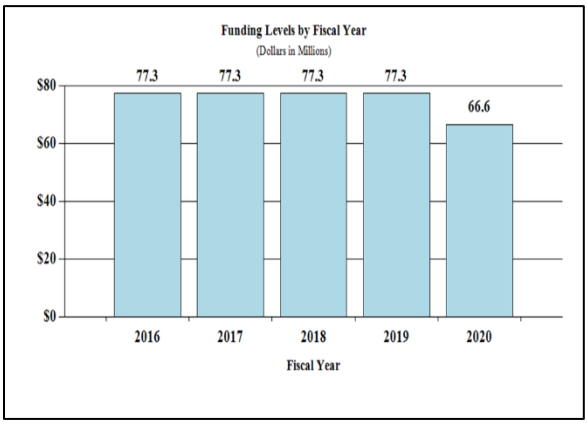
Summary of Changes - Continued

(Dollars in Thousands)

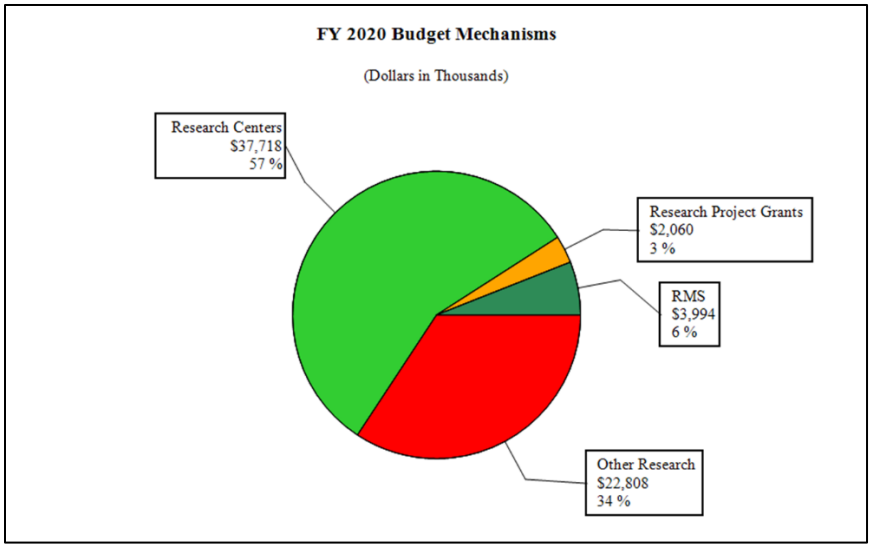
CHANGES	FY 2020 President's Budget		Change from FY 2019 Annualized CR	
	No.	Amount	No.	Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	0	$0	-1	-$154
b. Competing	0	0	0	0
c. SBIR/STTR	8	2,060	-1	-338
Subtotal, RPGs	8	$2,060	-2	-$492
2. Research Centers	15	$37,718	-3	-$6,191
3. Other Research	28	22,808	-2	-3,641
4. Research Training	0	0	0	0
5. Research and development contracts	0	0	0	0
Subtotal, Extramural		$62,587		-$10,324
	FTEs		FTEs	
6. Intramural Research	0	$0	0	$0
7. Research Management and Support	0	3,994	0	-505
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	0	$66,581	0	-$10,829
Total changes				-$10,768

Fiscal Year 2020 Budget Graphs

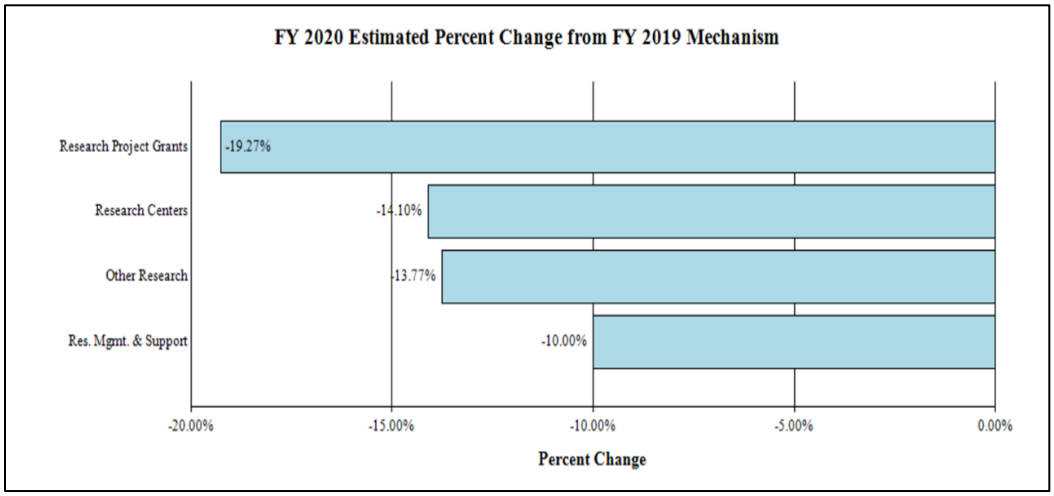
History of Budget Authority:



Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
Superfund

Budget Authority by Activity
(Dollars in Thousands)

	FY 2018 Final		FY 2019 Annualized CR		FY 2020 President's Budget		FY 2020 +/- FY 2019	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail								
Superfund Research		$46,724		$46,479		$39,636		-$6,843
Worker Training Program		26,540		26,432		22,951		-3,481
Subtotal, Extramural		**$73,264**		**$72,911**		**$62,587**		**-$10,324**
Intramural Research	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Research Management & Support	**0**	**$4,085**	**0**	**$4,438**	**0**	**$3,994**	**0**	**-$444**
TOTAL	**0**	**$77,349**	**0**	**$77,349**	**0**	**$66,581**	**0**	**-$10,768**

NATIONAL INSTITUTES OF HEALTH
Superfund

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation		FY 2019 Annualized CR		FY 2020 President's Budget
Environmental Protection Agency's Hazardous Substance Superfund	CERCLA Section 311(a)	42§9660 Section 9660(a)	Indefinite	$77,349,000	Indefinite	$66,581,000
	SARA Section 126(a)	42§9660 Section 9660(a)	Indefinite		Indefinite	
Total, Budget Authority				$77,349,000		$66,581,000

NATIONAL INSTITUTES OF HEALTH
Superfund

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
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	$77,349,000	$77,349,000	$77,349,000
Rescission				$0
2018	$59,607,000	$75,370,000		$77,349,000
Rescission				$0
2019[1]	$53,967,000	$80,000,000	$78,349,000	$77,349,000
Rescission				$0
2020	$66,581,000			

[1] Appropriation represents annualized CR level.

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 2018 Actual	FY 2019 Annualized CR	FY 2020 President's Budget	FY 2020+ / - FY 2019
BA	$77,349,000	$77,349,000	$66,581,000	-$10,768,000

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 Institute of Environmental Health Sciences (NIEHS), National Institutes of Health (NIH), Superfund-Related Activities seeks scientific solutions and training advancements to health and environmental problems associated with hazardous waste and disaster response. This program consists of two interdependent components: the Superfund Research Program (SRP) and the Worker Training Program (WTP).

Priorities for these two world-class components include, but are not limited to, novel technologies for better health protection and economic savings; increasing scientific data sharing; and incorporating biosafety and infectious disease response for workers.

In June 2018, SRP released "Assessing the Economic and Societal Benefits of SRP-Funded Research," which reinforced the economic benefits of new SRP technologies that confer not only better health protection, but also cost savings from the implementation of innovative cleanup strategies for hazardous waste sites. This assessment, which was the first stage in determining benefits and cost savings of SRP-funded research over the last 30 years, found that five technologies developed by SRP-funded projects have saved over $100 million in remediation costs.

Additionally, SRP is making strides in data sharing as well as increasing the transparency in science and leveraging data resources. This is demonstrated by the new requirement for data sharing in the Superfund Hazardous Substance Research and Training Program Request for Application that opened in July 2018.

One group of SRP grantees is discovering solutions for liver cancer, a disease that currently kills approximately 26,000 people in the United States annually.[1] One SRP-funded study highlights the importance of a family of molecules called CD44 proteins, which are located on the surface of cells. These investigators found that CD44 allows cells to override the body's natural protective response to DNA damage. The same researchers have also shown that chronic liver inflammation can promote cancer by suppressing one of the body's natural cancer-fighting mechanisms. This research explains the success of some cancer immunotherapy and suggests novel targets for new therapies.

WTP is actively integrating the best elements from its three-year Ebola Biosafety and Infectious Disease Response Training Program, funded by emergency Ebola treatment and prevention funds provided by Congress to HHS, into its upcoming five-year competitive renewal. Protecting workers from highly virulent diseases and incorporating biosafety training are the next frontier of hazardous waste worker training, protecting workers from all hazards that they may encounter at the job site. Workers at risk for exposure to infectious diseases are found in both health care and non-health care settings; for example, such workers include those who handle medical waste, airline employees, and first responders. Disaster cleanup workers also have an increased risk to vector-borne illnesses, such as in Puerto Rico after Hurricane Maria. Thus far, this new Program has trained about 23,000 workers in 37 states across the country.

Another key component of WTP is its hazardous waste training activities with Native Americans and Alaska Natives. From 2015 to 2017, WTP has provided training to over 100 Tribal Nations or Alaska Native Villages in nearly 30 states. From August 2016 to July 2017, WTP grantees trained more than 1,500 Native Americans and Alaska Natives, delivering more than 60 courses and nearly 13,000 contact hours.

For three decades, WTP has played a vital role in responses following disasters. As wildfires and mudslides occurred in California in 2017 and 2018, residents were warned not to sort through debris and ash until trained teams first removed the hazardous waste. WTP grantees responded by certifying workers for the required site cleanup actions, enabling these workers to help safely remove debris and household hazardous waste. Other classes, such as confined space safety and disaster site worker training, were organized to prepare workers to safely address wildfires. WTP grantees also trained California residents so that they could safely handle and clean up wildfire debris in their communities.

During the 2017 hurricane season involving Hurricanes Harvey, Irma, and Maria, WTP grantees assisted with cleanup efforts through disaster response and disaster train-the-trainer courses. Training on mold remediation, industrial safety, and mental health resilience is ongoing to help with recovery in the Houston area, Florida, and Puerto Rico. Grantees are helping workers and communities clean up and rebuild safely, address mental health resiliency issues after disaster, and build local capacity to deliver future trainings. WTP grantees are also delivering training in response to Hurricanes Florence and Michael.

[1] Centers for Disease Control and Prevention. Internet: www.cdc.gov/cancer/liver/index.htm. Accessed: November 6, 2018.

Overall Budget Policy:
The FY 2020 President's Budget request for NIEHS Superfund is $66.6 million, a decrease of $10.8 million or 13.9 percent compared with the FY 2019 annualized CR level.

Program Descriptions and Accomplishments

NIH/NIEHS Superfund Research Program (SRP)

The Superfund Research Program (SRP) is a university-based, multidisciplinary, translational research program that supports multi-project grants, graduate and postdoctoral training programs, individual research grants, and Small Business Innovation Research. SRP is a world-class program that seeks solutions to the complex health and environmental issues associated with the nation's hazardous waste sites with the overarching goal of improving public health.

SRP-funded researchers are conducting studies on dust particles from abandoned uranium mines that may have health impacts on nearby Navajo communities. Scientists at one SRP Center have shown that exposure to particles less than 10 micrometers in diameter (PM10) from an old uranium mine, compared to PM10 from an area not impacted by a mine, led to pulmonary and cardiac toxicity in mice, as well as higher levels of inflammation and oxidative stress in cells. This means that this contaminated dust could be damaging to the lungs and heart, and scientists are continuing further research on the potential health effects of inhalation exposures on Navajo communities who could be breathing this dust every day. In addition, other SRP-funded scientists identified research gaps among children and adolescents of American Indian/Alaska Native (AI/AN) heritage regarding heart, lung, and sleep disorders. Researchers using available data from large population-based studies confirmed a high prevalence of cardiovascular disease exists among AI/AN youth, prompting the recommendation to encourage cardiovascular screening during pediatric care.

SRP is funding grantees who are advancing our understanding of the health effects from natural disasters such as hurricanes and wildfires. For example, based on an ongoing SRP-funded partnership between a university and community groups and residents, researchers conducted a study to assess domestic exposure to polycyclic aromatic hydrocarbons (PAHs) among residents of Houston, Texas, after Hurricane Harvey. PAHs are complex environmental toxicants and exposure to them has been linked to adverse health outcomes including cancer. Some Houston residents have been exposed to a range of PAHs and SRP researchers have compared pre- and post-concentrations of PAHs in these neighborhoods. Their work indicates that community residents likely have higher exposure to PAHs due to the flooding after Hurricane Harvey. SRP grantees are continuing their work involving community members and policymakers to help develop interventions to reduce domestic exposure to, and prevent negative health outcomes from, PAHs.

Other work in Texas after Hurricane Harvey is being conducted by SRP grantees to help Houstonians recover from the flooding. These scientists have developed silicone wristbands that are a simple, quick, and effective way to identify exposures that residents encountered after Harvey. The wristbands are a passive sampling device, which can detect over 1,500 different chemicals. The individualized information provided by the wristbands is important for finding ways to mitigate exposures in the future and help with potential interventions. The result is an

individualized exposure assessment that will better elucidate potential hazards resulting from the disaster on both a personal and community level.

SRP grantees are also working to help Puerto Rico in the aftermath of Hurricanes Maria and Irma. Building on partnerships formed as part of an epidemiology study in Puerto Rico, SRP grantees developed educational materials aimed at preventing harmful exposures following the hurricanes' devastation, with a particular emphasis on drinking water. In addition, SRP-supported researchers are examining the impact of Hurricane Maria on polychlorinated biphenyl (PCB) redistribution in and around Guánica Bay, Puerto Rico. They are also assessing changes in community exposure to PCBs through inhalation and consumption of contaminated seafood and fish so that prevention and intervention strategies can be developed.

Wildfires have become a dangerous public health event that not only endanger lives and communities but also properties, businesses, and public lands. SRP grantees studying wildfires are using cutting-edge technology to determine the contaminants involved in the air before and after these disasters. These grantees, using remotely sensed data, ground-based *in situ* measurements, and modeling, found that particulate matter for an entire region is increased during years when wildfires are greatest, and resuspended dust moves additional pollutants into the air thus creating greater risk of exposure. They also found that transport of wildfire plumes significantly impacted downwind states, with higher levels of fine soil and course particulate matter at the downwind state (Arizona) as compared to the source of the fires (California).

Budget Policy:
The FY 2020 President's Budget estimate for SRP is $39.6 million, which is a decrease of $6.8 million or 14.7 percent compared with the FY 2019 annualized CR level.

Program Portrait: Drinking Water Aquifers—Clean Water for All Americans

FY2019 Level: $13.2 million
FY2020 Level: $13.2 million
Change: +$0.0 million

Water is a fundamental human need. Clean water is vital to our health, communities, and economy. Therefore, it is critical that our water remain clean for all Americans. SRP grantees are working on many fronts to help protect this vital resource.

In an innovative study carried out on the Navajo Nation, SRP-funded grantees employed a special clustering method to identify patterns of arsenic, uranium, lead, manganese, and selenium in water sources. Results from this work indicate that certain water sources have a potential for human toxicity; furthermore, because similar contaminants grouped together, the approach may be useful for identifying mixtures in water sources, spatially evaluating the clusters, and helping inform toxicological research investigating mixtures.

For more than six years, a Nebraska-based startup company has worked to perfect oxidant-paraffin candles, a chemical-wax cylinder containing oxidizing compounds that transform toxic chemicals, like vinyl chloride (VC), trichloroethylene (TCE), and perchloroethylene (PCE), into harmless carbon dioxide and chloride. Recently, the company received Phase II funding from SRP, which has allowed the company to improve the candles, simplify the technology, and continue to develop commercial products that can provide a less expensive alternative to treating contaminated groundwater.

Other SRP grantees conducted a study involving private wells in New Jersey to determine how many well owners took protective actions to monitor and remove arsenic. Exposure to naturally occurring arsenic in groundwater is a public health concern, particularly for households served by unregulated private wells. While nearly all well owners have had their water tested, this study found that not all current well owners understood the implications of their arsenic results. Findings suggest that additional effort, resources, and support are needed to ensure homebuyers understand and act on test results at the time they are performed, which will help protect their health.

Per- and polyfluoroalkyl substances (PFAS) are a group of synthetic chemicals that include perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), GenX, and many other chemicals, which are found throughout the environment including in drinking water. PFAS persist in the environment and there is evidence that exposure to PFAS can lead to adverse human health effects. SRP grantees are diligently investigating how best to monitor, evaluate, and safeguard public health from these chemicals. SRP-funded researchers are working with communities to understand how their water may be impacted by PFAS. These SRP grantees, working with private well owners in Cape Cod, Massachusetts, are testing the influence of PFAS-contaminated groundwater on residents' drinking water and fish. In addition, summaries of the findings will be presented to Cape Cod residents in reports and in public meetings. Other SRP grantees are working with a small, rural community in Cary, North Carolina, where elevated levels of several perfluorinated compounds were discovered in drinking water impacting hundreds of thousands of people. Collaborations with the SRP scientists have helped discern the chemical source and led to improved filtration and enhanced water monitoring.

SRP grantees are developing solutions for PFAS-impacted water. A small business grantee is developing new high-affinity polymers derived from corn to remove PFAS from water. The new technology uses an efficient and low-cost material that captures thousands of contaminants, including PFAS. Another SRP small business project is developing a technology to expedite removal of PFAS from soil and groundwater. The treated water is then returned to the groundwater injection wells for continued flushing, which incorporates remediation and reuse of water. Finally, an SRP grantee, under controlled laboratory conditions and using special techniques, has been able to successfully transform some PFAS into less toxic byproducts. Taken together, these SRP-funded PFAS remediation technologies have the potential to outperform conventional treatment processes and provide effective solutions for impacted communities to access clean and safe water.

NIH/NIEHS Worker Training Program (WTP)

WTP provides the nation with a workforce trained in the safe handling of hazardous materials and waste. This includes thousands of workers employed at Superfund sites. This vital training is conducted in all regions of the country and for all relevant target populations through a network of non-profit organizations. These organizations are committed to protecting workers and their communities by creating and delivering high-quality, peer-reviewed safety and health curricula. WTP has built a national workforce ready to handle hazardous materials and environmental concerns and to clean up hazardous waste and debris after disasters.

WTP funding granted about 9,200 courses that were provided to more than 150,000 workers with over 1.3 million contact hours from August 1, 2017 to July 31, 2018. More than 3.3 million workers have been enrolled in training courses since program inception in 1987. The most contact hours in 2018 were in Superfund cleanup courses, followed by General Industry and General Construction Safety. This demonstrates that the majority of contact hours for workers are in courses responsive to Superfund cleanup requirements or health and safety requirements on job sites. This training is the result of the support that WTP has established among a national network of more than 100 academic institutions, labor-based safety programs, and other non-profit organizations that deliver high-quality, peer-reviewed safety and health curricula to hazardous waste workers and emergency responders in every region of the United States. These

courses have established national benchmarks for quality worker safety and health training, including a strong emphasis on peer instructors and hands-on instruction.

Thousands of contaminated sites exist nationally due to hazardous waste being dumped, left out in the open, or otherwise improperly managed. These sites include manufacturing facilities, processing plants, landfills, and mining sites. A key objective of WTP is to fund organizations to develop and deliver training that gives workers skills and knowledge on how to safely protect themselves and their communities from hazardous waste and unknown contaminates, such as those at Superfund sites. Workers who received training from WTP grantees worked at or have gone on to secure jobs at Superfund sites across the country. Some examples are:

- Picatinny Arsenal (Rockaway Township, New Jersey);
- USS Lead (East Chicago, Indiana; training conducted in partnership with the Environmental Protection Agency (EPA));
- Midnite Mine (Wellpinit, Washington);
- B.F. Goodrich (Calvert City, Kentucky); and
- Baytown Township Ground Water Plume (Baytown Township, Minnesota).

Many WTP grantees provide training for federal and state agency workers, to fill their health and safety training needs on environmental remediation, emergency response, and other topics related to hazardous waste, hazardous worksites, and disaster preparedness.

For example, members of the Midwest Consortium for Hazardous Waste Worker Training have provided training for several federal agencies. This includes training for the National Park Service in confined space entry and rescue; the EPA with eight-hour site cleanup refresher training, as well as 40-hour site cleanup training with the EPA Job Training Initiative at the USS Lead site. Other federal agencies who have received WTP training include the U.S. Geological Survey, the Bureau of Land Management, the Bureau of Indian Affairs, the Department of Veterans Affairs, the National Guard, the Bureau of Prisons, and the National Aeronautics and Space Administration.

WTP also supports training for military personnel and local first responders. For example, the Community College Consortium for Health and Safety Training collaborates with a community college on hazardous waste training for servicemembers in Kansas and Oklahoma who are transitioning into civilian jobs after separating from military service. In another example, the New Jersey/New York Hazardous Materials Worker Training Center has funded the New Jersey State Police for over 25 years, to provide extensive hazardous materials training to the entire state emergency management community. Training delivered in 2018 included confined space awareness, emergency response incident command, and hazardous materials technician courses. The training addresses the requirements for employees who would respond to hazardous materials and weapons of mass destruction incidents.

Budget Policy:
The FY 2020 President's Budget estimate for WTP is $23.0 million, which is a decrease of $3.5 million or 13.2 percent compared with the FY 2019 annualized CR level.

Program Portrait: Opioids—Prevention of Occupational Exposure, and Workforce Training on Use and Abuse

FY2019 Level: $0.1 million
FY2020 Level: $0.4 million
Change: +$0.3 million

NIEHS WTP is at the forefront of addressing the opioid crisis from the worker health and safety perspective, exploring this next frontier in worker health and safety. Emergency medical services (EMS) providers, firefighters, environmental cleanup workers, families of users, coworkers, health care providers, and law enforcement personnel are among those who may encounter toxic exposures from illicitly-manufactured drugs during their daily work. In addition, blue-collar workers, in the construction, manufacturing, and service industries, have been identified as a primary vulnerable population for both potentially harmful opioid exposure and potentially deadly opioid use and abuse. Keeping workers safe and healthy is a key aspect of reducing the opioid problem as initial research indicates that workplace injuries and illnesses are trigger events for opioid use and abuse in the construction and manufacturing sectors.

WTP has responded with effective and innovative training to help contain the opioid crisis. For example, law enforcement encounters involving the lethal drug fentanyl have increased since 2013 by more than 700 percent. This increase spurred the development of a WTP awareness-level training tool that can be used by any worker who may come into contact with these substances such as EMS, law enforcement, crime lab workers, and other response and cleanup workers. The training objectives include recognizing occupations with potential exposure to opiates, the signs of exposure and treatment post-exposure, protective measures for workers, and methods for decontamination and cleanup.

Several WTP grantees in key Midwestern states and elsewhere have developed more comprehensive safety training courses for responders who may be involved in emergency medical responses and drug lab discovery or cleanup.

WTP sponsored a workshop in October 2018 titled, "Opioid-Related Hazards in the Workplace: Developing a Training Framework to Address Exposure, Use, and Prevention." During this workshop, WTP grantees, partners, and federal stakeholders discussed the current opioids issue, and the threat it poses to workers in various occupations. As a result of the workshop, WTP is enhancing its training framework to further respond to the complex issue and address the crisis from multiple aspects of prevention for, and assistance to, workers and communities.

Moving forward, WTP is continuing to deploy the existing training course with various worker populations. WTP is undertaking the work in collaboration with the National Institute on Drug Abuse, the National Institute for Occupational Safety and Health, and other government agencies as they refine their understanding of the epidemic and increase their response. WTP is coordinating its training efforts with these partners as well as sharing best practices.

Through these efforts, WTP is helping prevent injuries, illness, and fatalities due to opioids. WTP training helps bring about critical and precautionary measures such as targeted personal protective equipment with job hazard analysis, specific cleanup standards, and public health protective policies.

NATIONAL INSTITUTES OF HEALTH
Superfund

Budget Authority by Object Class[1]

(Dollars in Thousands)

		FY 2019 Annualized CR	FY 2020 President's Budget	FY 2020 +/- FY 2019
Total compensable workyears:				
	Full-time equivalent	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 2019 Annualized CR**	**FY 2020 President's Budget**	**FY 2020 +/- FY 2019**
	Personnel Compensation			
11.1	Full-Time Permanent	1,061	1,065	4
11.3	Other Than Full-Time Permanent	226	227	1
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**	**$1,299**	**$1,304**	**$5**
12.1	Civilian Personnel Benefits	443	452	8
12.2	Military Personnel Benefits	0	0	0
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$1,742**	**$1,755**	**$13**
21.0	Travel & Transportation of Persons	275	248	-28
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	0	0	0
25.2	Other Services	1,367	1,137	-231
25.3	Purchase of goods and services from government accounts	1,046	848	-199
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**	**$2,414**	**$1,984**	**-$430**
26.0	Supplies & Materials	6	6	0
31.0	Equipment	1	1	0
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	72,911	62,587	-10,324
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	**$75,607**	**$64,826**	**-$10,781**
	Total Budget Authority by Object Class	**$77,349**	**$66,581**	**-$10,768**

[1] FTEs are included with the regular NIEHS appropriation.

NATIONAL INSTITUTES OF HEALTH
Superfund

Salaries and Expenses

(Dollars in Thousands)

OBJECT CLASSES	FY 2019 Annualized CR	FY 2020 President's Budget	FY 2020 +/- FY 2019
Personnel Compensation			
Full-Time Permanent (11.1)	$1,061	$1,065	$4
Other Than Full-Time Permanent (11.3)	226	227	1
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)	**$1,299**	**$1,304**	**$5**
Civilian Personnel Benefits (12.1)	$443	$452	$8
Military Personnel Benefits (12.2)	0	0	0
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$1,742**	**$1,755**	**$13**
Travel & Transportation of Persons (21.0)	$275	$248	-$28
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)	0	0	0
Other Services (25.2)	1,367	1,137	-231
Purchases from government accounts (25.3)	1,046	848	-199
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	**$2,414**	**$1,984**	**-$430**
Supplies & Materials (26.0)	$6	$6	$0
Subtotal Non-Pay Costs	**$2,695**	**$2,237**	**-$457**
Total Administrative Costs	**$4,437**	**$3,993**	**-$444**

National Institutes of Health
Budget Request by Institute and Center

(Dollars in Thousands)	FY 2018 Final	FY 2019 Enacted	FY 2020 President's Budget
NCI	$5,943,706	$6,143,892	$5,246,737
NHLBI	$3,374,283	$3,488,335	$3,002,696
NIDCR	$446,683	$461,781	$397,493
NIDDK[1]	$2,113,453	$2,179,823	$1,897,235
NINDS	$2,145,030	$2,274,413	$2,026,031
NIAID	$5,268,307	$5,523,324	$4,754,379
NIGMS[2]	$2,781,024	$2,872,780	$2,472,838
NICHD	$1,457,226	$1,506,458	$1,296,732
NEI	$770,493	$796,536	$685,644
NIEHS[3]	$826,727	$852,056	$733,435
NIA	$2,571,502	$3,083,410	$2,654,144
NIAMS	$585,283	$605,065	$520,829
NIDCD	$458,893	$474,404	$408,358
NIMH	$1,754,434	$1,870,296	$1,630,422
NIDA	$1,374,374	$1,419,844	$1,296,379
NIAAA	$508,407	$525,591	$452,419
NINR	$157,662	$162,992	$140,301
NHGRI	$556,764	$575,579	$495,448
NIBIB	$376,730	$389,464	$335,244
NIMHD	$304,396	$314,679	$270,870
NCCIH	$141,684	$146,473	$126,081
NCATS	$760,710	$806,373	$694,112
FIC	$75,555	$78,109	$67,235
NLM	$427,546	$441,997	$380,463
B&F	$128,863	$200,000	$200,000
OD	$1,914,345	$2,112,675	$1,926,144
NIRSQ[4]	---	---	$255,960
TOTAL, NIH Program Level	**$37,224,080**	**$39,306,349**	**$34,367,629**
Special Type 1 Diabetes Research	-$150,000	-$150,000	-$150,000
PHS Program Evaluation	-$922,871	-$1,146,821	-$741,000
Interior Approp. (Superfund Research)[5]	-$77,349	-$77,349	-$66,581
Total, NIH Labor/HHS Budget Authority	**$36,073,860**	**$37,932,179**	**$33,410,048**

[1] Includes Type 1 Diabetes Research mandatory funding of $150.0 million in FY 2018, FY 2019, and FY 2020.

[2] Includes Program Evaluation financing of $922.9 million in FY 2018, $1,146.8 million in FY 2019, and $741.0 million in FY 2020.

[3] Includes Interior Appropriation allocation for Superfund Research activities of $77.3 million in FY 2018, $77.3 million in FY 2019, and $66.6 million in FY 2020.

[4] Figures for FY 2020 reflect the proposed consolidation of Agency for Healthcare Research and Quality activities into NIH as the National Institute for Research on Safety and Quality (NIRSQ).

[5] Amount for FY 2019 reflects the Annualized CR level at the time the budget estimates were prepared.

NATIONAL INSTITUTES OF HEALTH

FY 2020 Congressional Justification

Budget Mechanism Total[1,2,3]

(Dollars in Thousands)[1,2,3]	FY 2018 Final[4]		FY 2019 Enacted[5]		FY 2020 President's Budget[6]		FY 2020 +/- FY 2019	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	25,858	$13,776,726	27,492	$14,677,360	28,760	$14,536,572	1,268	-$140,788
Administrative Supplements[3]	*(2,743)*	483,035	*(2,695)*	506,430	*(1,858)*	361,166	*(-837)*	-145,264
Competing	11,461	$5,943,802	11,675	$6,311,423	7,894	$3,725,852	-3,781	-$2,585,571
Subtotal, RPGs	37,319	$20,203,562	39,167	$21,495,213	36,654	$18,623,590	-2,513	-$2,871,623
SBIR/STTR	2,035	1,001,946	2,222	1,084,179	1,911	921,133	-311	-163,046
Research Project Grants	39,354	$21,205,508	41,389	$22,579,392	38,565	$19,544,723	-2,824	-$3,034,669
Research Centers:								
Specialized/Comprehensive	1,003	$1,813,976	1,079	$1,908,419	924	$1,547,608	-155	-$360,811
Clinical Research	68	417,709	66	421,640	64	362,000	-2	-59,640
Biotechnology	91	159,963	91	160,916	80	138,518	-11	-22,398
Comparative Medicine	67	129,881	79	133,759	67	115,233	-12	-18,526
Research Centers in Minority Institutions	21	61,478	20	63,407	20	54,594	0	-8,814
Research Centers	1,250	$2,583,007	1,335	$2,688,141	1,155	$2,217,953	-180	-$470,188
Other Research:								
Research Careers	4,040	$747,017	4,161	$780,492	3,792	$708,160	-369	-$72,332
Cancer Education	76	21,182	85	24,857	81	23,614	-4	-1,243
Cooperative Clinical Research	229	409,660	278	497,025	243	411,324	-35	-85,701
Biomedical Research Support	118	85,524	112	73,696	95	62,825	-17	-10,872
Minority Biomedical Research Support	283	101,245	294	104,359	228	81,111	-66	-23,248
Other	2,064	1,081,442	2,066	1,009,259	1,805	922,686	-261	-86,572
Other Research	6,810	$2,446,070	6,996	$2,489,688	6,244	$2,209,720	-752	-$279,968
Total Research Grants	47,414	$26,234,584	49,720	$27,757,221	45,964	$23,972,395	-3,756	-$3,784,825
Ruth L Kirchstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	3,500	$161,753	3,697	$173,134	3,335	$157,779	-362	-$15,355
Institutional Awards	12,697	694,093	12,969	715,821	11,657	644,094	-1,312	-71,727
Total Research Training	16,197	$855,845	16,666	$888,955	14,992	$801,873	-1,674	-$87,082
Research & Develop. Contracts	2,212	$3,072,532	2,177	$3,132,619	1,862	$2,795,430	-315	-$337,189
(SBIR/STTR) (non-add)[3]	*(85)*	*(60,608)*	*(98)*	*(74,336)*	*(79)*	*(64,122)*	*(-19)*	*(-10,214)*
Intramural Research		$3,996,276		$4,129,550		$3,633,805		-$495,745
Res. Management & Support		1,816,210		1,898,356		1,739,376		-158,979
Res. Management & Support (SBIR Admin) (non-add)[3]		*(0)*		*(5,172)*		*(3,559)*		*(-1,613)*
Office of the Director - Appropriation[3,7]		*(1,914,345)*		*(2,112,675)*		*(1,926,144)*		*(-186,531)*
Office of the Director - Other		1,024,420		1,204,300		1,144,168		-60,132
ORIP (non-add)[3,7]		*(289,209)*		*(289,209)*		*(249,009)*		*(-40,200)*
Common Fund (non-add)[3,7]		*(600,716)*		*(619,166)*		*(532,967)*		*(-86,199)*
Buildings and Facilities[8]		146,863		218,000		214,000		-4,000
Appropriation[3]		*(128,863)*		*(200,000)*		*(200,000)*		*(0)*
Type 1 Diabetes[9]		-150,000		-150,000		-150,000		0
Program Evaluation Financing[9]		-922,871		-1,146,821		-741,000		405,821
Subtotal, Labor/HHS Budget Authority		**$36,073,860**		**$37,932,179**		**$33,410,048**		**-$4,522,131**
Interior Appropriation for Superfund Research[10]		77,349		77,349		66,581		-10,768
Total, NIH Discretionary Budget Authority		**$36,151,209**		**$38,009,528**		**$33,476,629**		**-$4,532,899**
Type 1 Diabetes		150,000		150,000		150,000		0
Total, NIH Budget Authority		**$36,301,209**		**$38,159,528**		**$33,626,629**		**-$4,532,899**
Program Evaluation Financing		922,871		1,146,821		741,000		-405,821
Total, Program Level		**$37,224,080**		**$39,306,349**		**$34,367,629**		**-$4,938,720**

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

2 Includes 21st Century Cures Act funding and excludes Ebola-related and supplemental financing.

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

4 Includes $63.3 million of 21st Century Cures, $428.9 million of Opioids, and $123.7 million of Type 1 Diabetes funding not obligated in FY 2018, and carried over into FY 2019. Numbers of grants and dollars for carryover are distributed by mechanism.

5 Reflects transfer of $5.0 million to the HHS OIG.

6 Includes the proposed consolidation of Agency for Healthcare Research and Quality activities into NIH as the National Institute for Research on Safety and Quality (NIRSQ), distributed by mechanism.

7 Number of grants and dollars for the Common Fund and ORIP components of OD are distributed by mechanism and are noted here as non-adds. Office of the Director - Appropriation is the non-add total of these amounts and the funds accounted for under OD - Other.

8 Includes B&F appropriation and monies allocated ($18.0 million in FY 2018, $18.0 million in FY 2019, and $14.0 million in FY 2020) pursuant to appropriations acts provisions that funding may be used for facilities repairs and improvements at the NCI Federally Funded Research and Development Center in Frederick, Maryland.

9 Number of grants and dollars for mandatory Type 1 Diabetes (T1D) and NIGMS Program Evaluation financing are distributed by mechanism above; therefore, T1D and Program Evaluation financing amounts are deducted to provide subtotals for Labor/HHS Budget Authority.

10 This activity was under a Continuing Resolution at the time the budget estimates were prepared.

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

Institutes and Centers	FY 2018 Actual	FY 2019 Estimate	FY 2020 Estimate
NCI	2,952	3,035	3,035
NHLBI	901	962	962
NIDCR	228	235	235
NIDDK	630	660	660
NINDS	504	532	532
NIAID	1,935	1,963	1,963
NIGMS	173	184	184
NICHD	539	560	560
NEI	259	273	273
NIEHS	630	662	662
NIA	416	435	435
NIAMS	221	238	238
NIDCD	129	140	140
NIMH	550	563	563
NIDA	355	382	382
NIAAA	227	238	238
NINR	94	96	96
NHGRI	330	349	349
NIBIB	98	102	102
NCATS	172	167	167
NCCIH	68	73	73
NIMHD	72	68	68
FIC	58	61	61
NLM	700	741	741
OD	764	781	781
NIRSQ[4]	---	---	238
Central Services:			
OD - CS	794	841	841
CC	1,857	1,844	1,844
CSR	409	417	417
CIT	233	257	257
ORS	517	539	539
ORF	721	707	707
Subtotal Central Services[1]	**4,531**	**4,605**	**4,605**
PHS Trust Fund (non-add)[2]	*4*	*4*	*4*
CRADA (non-add)[3]	*5*	*5*	*5*
PCOR Trust Fund[4]	---	---	7
Total	**17,536**	**18,105**	**18,350**

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

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

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

[4] Figures for FY 2020 reflect the proposed consolidation of Agency for Healthcare Research and Quality activities into NIH as the National Institute for Research on Safety and Quality (NIRSQ).