Superfund-Related Activities: The Superfund Research Program and the Worker Training Program

CONGRESSIONAL JUSTIFICATION
FY 2022

Department of Health and Human Services
National Institutes of Health

National Institute of Environmental Health Sciences

DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of Environmental Health Sciences (NIEHS)

Department of the Interior, Environment, and Related Agencies Appropriations

NIEHS Superfund-Related Activities

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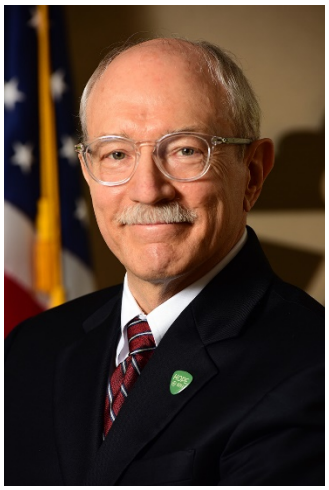
Cover: Alaskan Native graduate (right) of the RACEJT program in Alaska, performing fieldwork on the job. An NIEHS grantee provides hazardous waste worker and confined space training under RACEJT, which is conducted in partnership with other organizations, including the U.S. Environmental Protection Agency (EPA). Photo courtesy of Integrity Environmental.

Director's Overview



Rick Woychik, Ph.D., NIEHS Director

The National Institute of Environmental Health Sciences (NIEHS), National Institutes of Health (NIH), Superfund-Related Activities seek 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).

NIEHS Superfund-Related Activities support research and training for emergency response and disasters. The work of SRP and WTP programs are essential for completing cleanup actions at Superfund sites by providing effective and practical training to workers and developing innovative and cost-effective remediation technologies.

The Superfund Program has acted quickly to confront and help during the coronavirus disease 2019 (COVID-19) pandemic. SRP Centers across the country are contributing their expertise to respond to COVID-19, from increasing testing capacity and improving personal protective equipment to creating online tools and outreach materials. SRP researchers are fighting COVID-19 through activities from basic research, to intervention technologies, to risk communication. Similarly, WTP's national network of trainers and experts has proved critical in protecting first responders and other front-line workers during the COVID-19 pandemic. For example, in March 2020, WTP acted quickly by highlighting how to protect front-line workers involved in COVID during a national virtual workshop and by releasing online training tools and resources.

Both Programs have continued their work with vulnerable and minority populations in the U.S. New studies from Northeastern University's SRP Center, Puerto Rico Test site for Exploring Contamination Threats (PROTECT), found links between poor birth outcomes and exposure to environmental chemicals, including metals and flame retardants. Findings from one study provide further support for the need to reduce lead exposure as much as possible among pregnant women. Likewise, WTP grantees are assisting vulnerable and health disparate populations by delivering critical health and safety training. WTP has called upon its partnerships with organizations to provide training and job readiness skills to a variety of groups such as Black, Latinx, Native American/Alaska Native, and low-income worker populations.

The NIEHS Superfund-Related Activities has yielded significant cost savings, through both SRP and WTP, while providing additional societal benefits. For example, a recent analysis of the SRP showed that five case studies of SRP-funded remediation and detection technologies had a net savings estimated at over $100.0 million compared to conventional technologies. The analysis identified added societal benefits such as creation of small businesses, land and water reuse, sustainable technologies, exposure reduction, and university-industry partnerships. A component of the WTP program, the Environmental Career Worker Training Program (ECWTP), that specializes in recruitment and training of unemployed and underemployed people has had an estimated cumulative total value added of $1.79 billion from 1995 through 2013, or roughly $100.0 million annually. Among its many benefits, ECWTP trainees receive higher earnings and employment rates with increases in government revenues and reduction of government payments in the form of higher taxes and lower social assistance costs, respectively.

The $2.0 million increase in SRP funding in FY 2020 has helped accelerate our understanding of health effects of per- and polyfluoroalkyl substances (PFAS), including interactions with COVID-19, new exposure pathways, and the development of novel, rapid PFAS testing methodologies. In addition, SRP awarded both a new small business research grant for a novel PFAS capture technology applicable for drinking water, and a time-sensitive research grant to characterize risks of PFAS in seafood tissue near a U.S. military base.

WTP has allotted funding from the $10.0 million in Coronavirus Preparedness and Response Supplemental Appropriations Act of 2020 (P.L. 116-123) for worker-based training to prevent and reduce COVID-19 exposure of hospital employees, emergency first responders, and other workers who are at high risk. Through supplemental projects and COVID-19-specific funding added to annual grants, all WTP grantees funded under the Hazardous Waste Worker Training Program are providing training to essential and returning worker populations across the United States and its territories. Additionally, several WTP Small Business Innovation Research Project grants are developing innovative technologies that include delivery of COVID-19 skills development and health and safety knowledge on virtual platforms. Other activities funded with these appropriations include the development of a large selection of online training tools and resources available on the WTP COVID-19 webpage, such as COVID-19 awareness and essential worker curricula, technical webinars, and a workplace checklist.

Overall Budget Policy: The FY 2022 President's Budget request for NIEHS Superfund is $83.5 million, an increase of $2.0 million or 2.5 percent compared with the FY 2021 Enacted level.

National Institute of Environmental Health Sciences

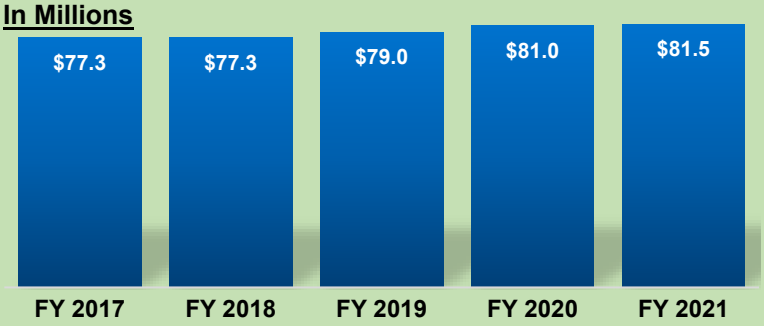
Superfund-Related Activities

Overview of the Program

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). The Superfund Amendments and Reauthorization Act (SARA) of 1986 created SRP and WTP within NIEHS.

Superfund Appropriations History

In Millions



FY 2022 President's Budget: $83.5 million

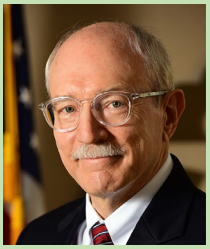
Program Highlights:

SRP:

- Discovered new mechanisms involved in liver cancer, suggesting novel targets for new therapies
- Scientists developed poplar trees to remove trichloroethylene (TCE) from groundwater, saving an estimated $9.5 million
- Grantees linked low levels of PCBs to obesity-associated atherosclerosis and discovered that diets high in vitamin E and healthy omega-3 fatty acids can reduce cell damage caused by PCBs
- SRP-supported small businesses have commercialized PFAS water filtration units and are testing a mobile PFAS-destruction unit to clean up soil and water

WTP:

- 2020: trained over 138,000 workers in more than 8,000 courses for over 1 million contact hours
- Trained thousands of workers for recovery from U.S. natural and man-made disasters, including:
  - World Trade Centers, western wildfires, and Hurricanes Katrina, Sandy, Harvey, and Florence
- Since FY1995, over 13,000 workers have been trained in the Environmental Careers Worker Training Program (ECWTP) with an average 70 percent employment rate



Rick Woychik, Ph.D., was named Director of NIEHS in June 2020. He received his Ph.D. from Case Western University and postdoctoral training at Harvard Medical School.

Facts and Figures

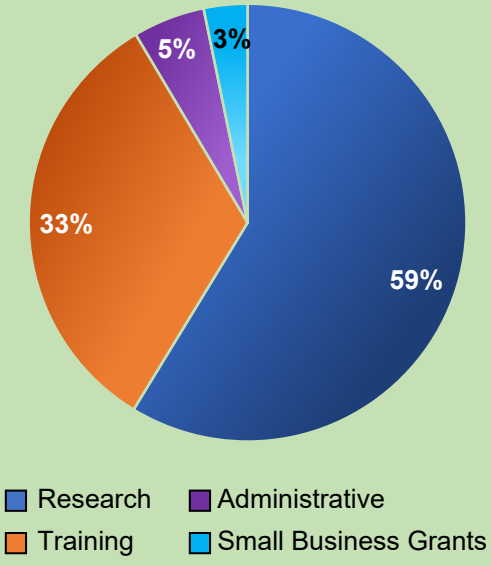
SRP:

- 3345 Principal Investigators (PIs)
- 50 grants (Average, FY17-FY19)
- Awarded grants to over 1,300 researchers at 150 institutions and small businesses
- Grantees have patented over 160 inventions
- 6 Full-Time Equivalent employees (FTEs)

WTP:

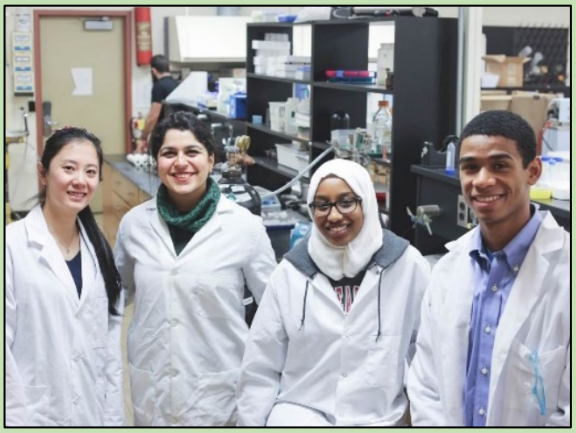
- Trained 3.6 million workers since 1987
- ECWTP: Annual investment of $3.5 million generates a $100 million
- 6 FTEs, 20 PIs, 17 grants

FY19 Total Funding, $79 million



Recent Accomplishments - SRP

- Researchers developed a therapeutic sorbent technology that can be added to food or water and ingested by humans and animals to reduce harmful contaminant exposures, such as PFAS and GenX.
- Grantees have coordinated and developed online tools such as a vulnerability index that identifies areas most susceptible to COVID-19.
- Remediation of 1,4 dioxane using a powerful oxidant to break down contaminants; and use of an electrochemical system that degrades perchloroethylene (PCE) in groundwater.



Research trainees at the Northeastern SRP Center (Courtesy of Northeastern SRP Center)

Recent Accomplishments - WTP

- COVID-19 response – funded innovative efforts to provide virtual or physically distanced in-person training to essential and returning workers.
- Developed training tools and training courses for the opioid epidemic, focused on workers who face significant risk of injury and occupational exposure to opioids.
- Ebola Biosafety and Infectious Disease Response Training Program - created and delivered infection control practices and hazard recognition training to over 36,000 workers.

NJ Fire fighter trainees during a HazMat Operations class (Courtesy of Intl. Assn. of Fire Fighters)

Future Initiatives

SRP: The SRP 2020-2025 Strategic Plan calls for a focus on issues of high relevance, fostering innovation, and building broad partnerships with stakeholders from technology end-users to impacted communities. Future efforts will explore precision approaches for prevention that consider individual variability in genes, environment, and lifestyle. For example, new SRP centers will work to uncover interactions between health, disease, and environmental exposures among underserved communities. An innovative sustainable remediation program has also been launched to address emerging contaminants (e.g. PFAS and 1,4-dioxane) and form partnerships with potential end-users.

WTP: The WTP is committed to creating a national workforce that can protect themselves, co-workers, and communities from environmental hazards. The Program is supporting grantees under a new five-year funding program, including bringing on new partners who will continuing training a large variety of workers across the United States Additionally, WTP funding provides a large workforce with training on how to effectively and safely work during national emergencies such as COVD-19, the western wildfires, and the opioid epidemic. The WTP will also continue reaching vulnerable populations to give them skills that lead to successful employment and encourage grantees to enhance racial justice and equity aspects of worker training.

Major Changes in the Fiscal Year 2022 Budget Request

Major changes by budget mechanism and/or budget program detail are briefly described below. The FY 2022 President's Budget for NIEHS Superfund is $83.5 million, which is $2.0 million above the FY 2021 Enacted level.

Research Project Grants (-$0.5 million, total $5.2 million)
Research project grants to be awarded on a competing basis in FY 2021 will receive noncompeting continuation awards in FY 2022. No additional competing RPGs are anticipated to be awarded in FY 2022.

Research Center Grants (+$1.6 million, total $45.1 million)
NIEHS plans to support a total of 21 Research Center awards in the area of Comparative Medicine in FY 2022.

Other Research (+$0.9 million, total $28.6 million)
NIEHS plans to fund an additional 5 research grants over the FY 2021 Enacted Level to offer continued support the Human Health Exposure Analysis Resource (HHEAR) program in FY 2022,

NATIONAL INSTITUTES OF HEALTH
Superfund

Budget Mechanism - Total[1]

(Dollars in Thousands)

MECHANISM	FY 2020 Final		FY 2021 Enacted		FY 2022 President's Budget		FY 2022 +/- FY 2021 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	0	$0	1	$123	10	$2,582	9	$2,459
Administrative Supplements	*(0)*	0	*(0)*	0	*(0)*	0	*(0)*	0
Competing:								
Renewal	0	0	0	0	0	0	0	0
New	1	246	10	2,510	0	0	-10	-2,510
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	1	$246	10	$2,510	0	$0	-10	-$2,510
Subtotal, RPGs	1	$246	11	$2,633	10	$2,582	-1	-$51
SBIR/STTR	12	3,194	9	3,096	9	2,603	0	-493
Research Project Grants	13	$3,440	20	$5,729	19	$5,185	-1	-$544
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	21	45,360	20	43,529	21	45,093	1	1,564
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	21	$45,360	20	$43,529	21	$45,093	1	$1,564
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	23	28,109	23	27,688	28	28,595	5	906
Other Research	23	$28,109	23	$27,688	28	$28,595	5	$906
Total Research Grants	57	$76,909	63	$76,946	68	$78,872	5	$1,926
Ruth L Kirschstein 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	4,091	0	4,554	0	4,668	0	114
SBIR Admin. (non-add)	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*	*(0)*
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, Superfund	0	$81,000	0	$81,500	0	$83,540	0	$2,040

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

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

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, [$81,500,000]*$83,540,000.*

(Department of the Interior, Environment, and Related Agencies Appropriations Act, 2021.)

NATIONAL INSTITUTES OF HEALTH
Superfund

Summary of Changes

(Dollars in Thousands)

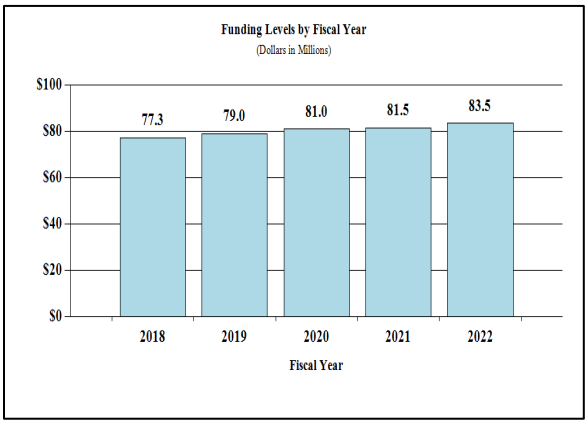
FY 2021 Enacted	$81,500
FY 2022 President's Budget	$83,540
Net change	$2,040

CHANGES	FY2021 Enacted		FY 2022 President's Budget		Built-In Change from FY 2021 Enacted	
	FTEs	Budget Authority	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:						
1. Intramural Research:						
a. Annualization of January 2021 pay increase & benefits		$0		$0		$0
b. January FY 2022 pay increase & benefits		0		0		0
c. Paid days adjustment		0		0		0
d. Differences attributable to change in FTE		0		0		0
e. Payment for centrally furnished services		0		0		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		0		0		0
Subtotal				$0		$0
2. Research Management and Support:						
a. Annualization of January 2021 pay increase & benefits		$1,984		$2,045		$5
b. January FY 2022 pay increase & benefits		1,984		2,045		56
c. Paid days adjustment		1,984		2,045		0
d. Differences attributable to change in FTE		1,984		2,045		0
e. Payment for centrally furnished services		8		8		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		2,562		2,615		51
Subtotal						$112
Subtotal, Built-in						$112

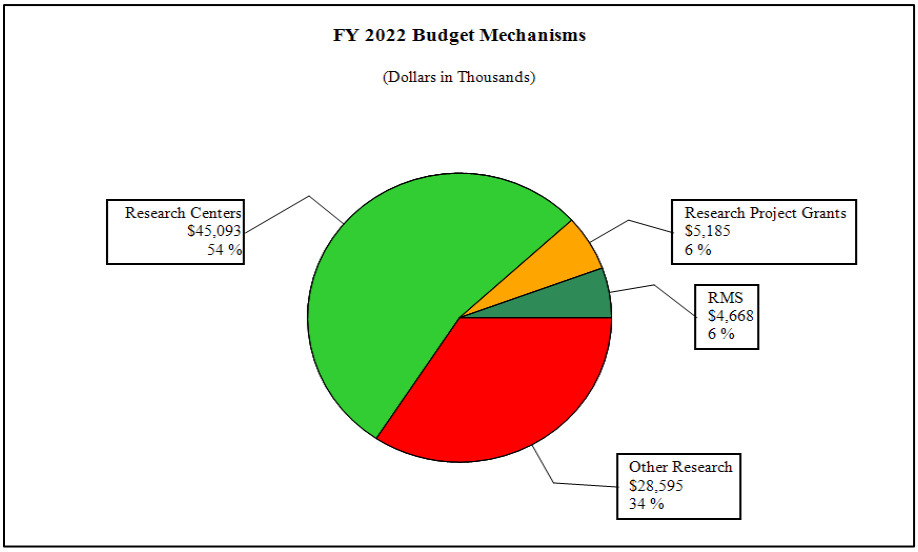
CHANGES	FY2021 Enacted		FY 2022 President's Budget		Program Change from FY 2021 Enacted	
	No.	Amount	No.	Amount	No.	Amount
B. Program:						
1. Research Project Grants:						
a. Noncompeting	1	$123	10	$2,582	9	$2,459
b. Competing	10	2,510	0	0	-10	-2,510
c. SBIR/STTR	9	3,096	9	2,603	0	-493
Subtotal, RPGs	20	$5,729	19	$5,185	-1	-$544
2. Research Centers	20	$43,529	21	$45,093	1	$1,564
3. Other Research	23	27,688	28	28,595	5	906
4. Research Training	0	0	0	0	0	0
5. Research and development contracts	0	0	0	0	0	0
Subtotal, Extramural		$76,946		$78,872		$1,926
	FTEs		FTEs		FTEs	
6. Intramural Research	0	$0	0	$0	0	$0
7. Research Management and Support	0	4,554	0	4,668	0	2
8. Construction		0		0		0
9. Buildings and Facilities		0		0		0
Subtotal, Program	0	$81,500	0	$83,540	0	$1,928
Total built-in and program changes						$2,040

Fiscal Year 2022 Budget Graphs

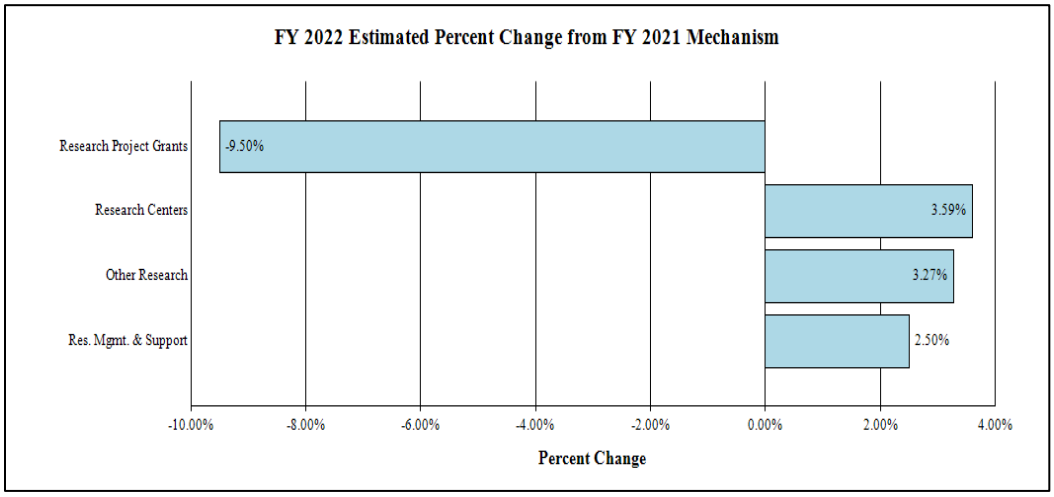
History of Budget Authority:



Distribution by Mechanism:



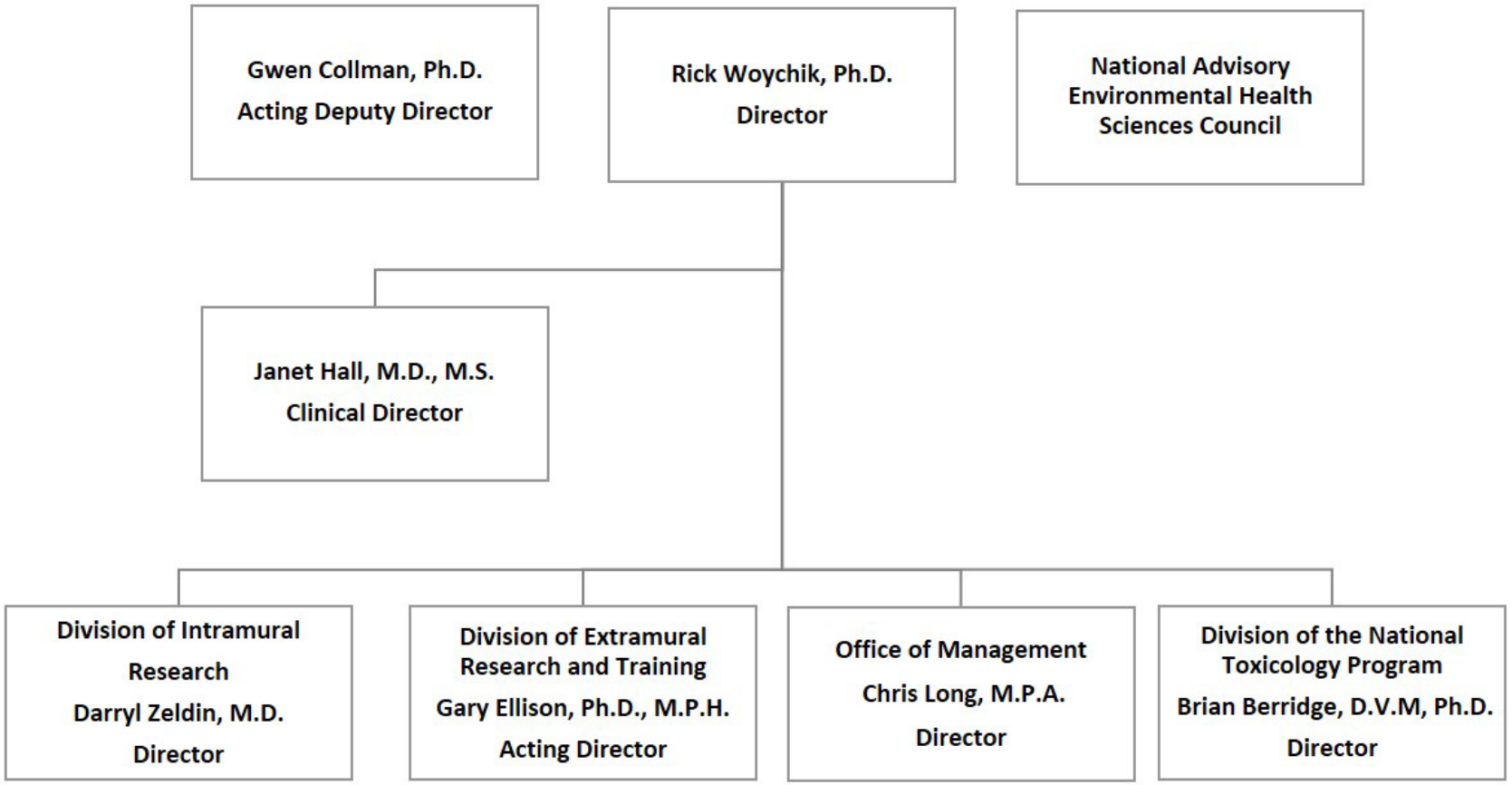
Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH

National Institute of Environmental Health Sciences

Organization Structure



NATIONAL INSTITUTES OF HEALTH
Superfund

Budget Authority by Activity[1]
(Dollars in Thousands)

	FY 2020 Final		FY 2021 Enacted		FY 2022 President's Budget		FY 2022 +/- FY 2021 Enacted	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail								
Superfund Research		$50,388		$50,261		$51,267		$1,006
Worker Training Program		26,521		26,685		27,605		920
Subtotal, Extramural		**$76,909**		**$76,946**		**$78,872**		**$1,926**
Intramural Research	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Research Management & Support	**0**	**$4,091**	**0**	**$4,554**	**0**	**$4,668**	**0**	**$114**
TOTAL	**0**	**$81,000**	**0**	**$81,500**	**0**	**$83,540**	**0**	**$2,040**

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

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 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
BA	$81,000,000	$81,500,000	$83,540,000	+$2,040,000

FTEs are included with the regular NIEHS appropriation.

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

Program Descriptions and Accomplishments

NIH/NIEHS Superfund Research Program (SRP)

Science in Service to Society

SRP funds university-based grants to support basic biological, environmental, and engineering processes aimed at finding real and practical solutions to human health challenges associated with exposures to hazardous substances. SRP provides practical, scientific solutions to protect our health, environment, and communities.

SRP: Answering the call/Addressing public health needs with great urgency

The SRP has been answering the call to address public health needs with great urgency by mobilizing its grantees to combat COVID-19. SRP-funded researchers at the University of Alabama at Birmingham (UAB) and partners at the Oak Ridge National Laboratory are creating tools for rapid production of face masks and shields that are made of reusable, biodegradable materials. The team created injection molds that will help produce millions of face masks for health care workers. These tools are expected to help produce more than 300,000 masks each week. In addition, an SRP grantee at Boston University is developing a plan for universal COVID-19 testing, contact tracing, and infection control for the Rosebud Sioux Tribal Nation in South Dakota.

PFAS researcher engaging with community
Credit: URI SRP

Another public health need that the SRP is addressing is PFAS. SRP-funded scientists and engineers are using innovative approaches to understand the health effects of PFAS, a large group of compounds found in fire suppression foams, industrial facilities, military sites, and everyday products. They also are exploring how PFAS move and change in the environment and how to remediate them to better protect human health. For example, scientists at the University of Rhode Island's SRP Center have reported links between early-life PFAS exposure and immune dysfunction and metabolic abnormalities. This work is helping to establish underlying pathways to better assess how PFAS contribute to obesity and weakened immune systems.

In two recent studies, researchers at the University of Kentucky SRP Center demonstrated that they could effectively remove hazardous substances, including trichloroethylene (TCE) and perfluorooctanoic acid (PFOA), from water using specialized membranes. These membranes, which can both trap and degrade contaminants, are likely to be more cost-effective than existing methods.

SRP: Closing the gap in health disparities

SRP funded grantees are continuing work across the nation to help alleviate disparities by working with disenfranchised populations, including Native American groups. Scientists at the University of New Mexico (UNM) SRP Center are conducting studies on dust particles from abandoned uranium mines that may have health impacts on nearby Navajo communities. They have shown dust particles near an old uranium mine in Arizona led to pulmonary and cardiac toxicity in mice not observed in control-area dust. Looking for solutions to these exposures, another UNM project works with Navajo communities to study whether supplemental zinc reduces immunotoxicity from exposure to uranium and arsenic. The outcomes from this research are expected to elucidate how certain toxic metals create health problems such as autoimmune disease while testing an intervention that may alleviate the toxic exposure.

SRP research trainees at a Superfund Site
Credit: The U Arizona

SRP funded work at Massachusetts Institute of Technology (MIT) led to implementation of a drinking water testing study with the Passamaquoddy Tribe in Maine. This successful research collaboration between MIT and the Passamaquoddy community was both a capacity-building and trust-building success. Tribal households received results for lead and arsenic levels in their drinking water with recommendations for how to reduce their exposures. This study laid the groundwork for a future partnership with SRP Passamaquoddy colleagues to address additional water quality concerns such as N-nitrosodimethylamine (NDMA), an emerging contaminant of concern.

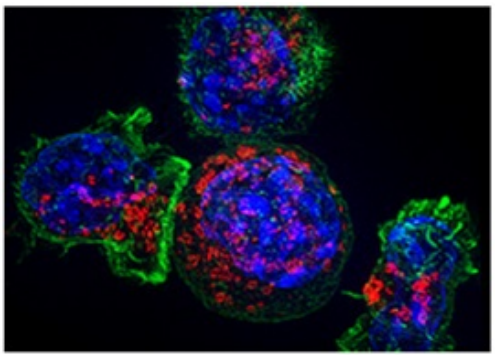
A new online tool combines environmental and health data to identify communities vulnerable to negative effects of environmental exposures and other stressors in the Houston region. The tool called HGBEnviroScreen was developed by the Texas A&M SRP Center and helps communities understand how environmental factors like flooding and air pollution can affect their health. Information from HGBEnviroScreen can provide insights into which environmental factors would benefit most from improved planning, policy, and action in order to reduce future vulnerability, especially in historically disadvantaged communities.

SRP: Years of basic science allowed us to respond effectively

The SRP research infrastructure, community networks, and experience in responding to national emergencies (such as hurricanes and Zika) have allowed the SRP to respond effectively to continuing and emerging threats and emergencies. SRP Centers across the country are contributing their expertise to respond to the COVID-19 pandemic. From increasing testing capacity and improving personal protective equipment to creating online tools and outreach materials, SRP researchers are fighting COVID-19. Additionally, by leveraging SRP's infrastructure to rapidly respond to and understand interactions between COVID-19 and environmental contaminants, SRP grantees are helping to ensure vital research occurs to better protect human health. SRP grantees are building on existing, strong partnerships with communities all over the nation to understand how to reach vulnerable populations. They are also applying robust laboratory models to understand mechanisms by which environmental exposures exacerbate COVID infection.

SRP basic research has also led to important health-protective policy changes. Benzene, a widely used, high production volume chemical, can cause a variety of illnesses, including cancer. UC Berkeley SRP Center research on benzene carcinogenicity led to changes in benzene regulation that are estimated to reduce benzene cancer risk by 43 percent across the United States while producing $6 billion of health benefits annually from particulate matter reductions.

At the SRP Center at Brown University, an innovative graphene-based film has been developed that helps shield people from disease-carrying mosquitoes. The research findings could lead to new protective methods against mosquitoes, without the environmental or human health effects of other chemical-based repellants.



Cytotoxic T cells surround a cancer cell, center
Credit: National Institutes of Health

SRP: Importance of continued investment in the future

The potential for future SRP research advances is extraordinary, as past advances have led to discoveries relevant to a variety of fields. In one example, SRP grantees at Texas A&M University developed a therapeutic sorbent technology that can bind to hazardous chemicals in the body after exposure, reducing their uptake and bioavailability. Built on decades of research to remove chemicals from the environment, these broad-acting "enterosorbent" materials can be added to food or water and ingested by humans and animals to reduce harmful contaminant exposures following natural disasters, chemical spills, and other emergencies. As a result of a now-completed SRP-funded small business grant, Microvi, Inc., has commercialized its water remediation technology, called Denitrovi. The Denitrovi technology uses a biological process to remove nitrates, producing no byproducts and safely releasing nitrogen gas into the atmosphere. The technology offers significant advantages over traditional methods – it is easy to operate, costs less, requires less energy, and produces less waste.

SRP research has provided significant benefits to our nation and has improved human health. Its many contributions to public health and research over the years illustrate that continued funding for the SRP is an investment in our future.

For example, SRP grantees have made important connections between environmental exposures and health. A University of Kentucky SRP Center study was the first to link exposure to low levels of PCBs to obesity-associated atherosclerosis. Their research also found that antioxidant nutrients such as vitamin E and healthy omega-3 fatty acids can reduce cell damage caused by

PCBs and other pollutants by interfering with oxidative stress and proinflammatory signaling pathways. Additionally, the team discovered that diets rich in flavonoids from fruits and vegetables can reduce the risk for PCB-associated type 2 diabetes. As a result, the researchers developed and implemented a nutrition program to increase fruit and vegetable consumption, thereby reducing the potential health impacts of PCB exposure.

SRP grantees have also led the way in applying sophisticated genomics tools to understand how microbial communities interact with different contaminants. These advanced approaches have identified bacterial communities that can be used as a remediation tool, sustainably destroying contaminants in groundwater, soil, and sediments. These approaches have also helped explore how exposure to potentially hazardous chemicals can alter the human microbiome and affect our health. SRP's continued research in microbial systems shows potential for future environmental remediation as well as health interventions.

Budget Policy: The FY 2022 President's Budget request for SRP is $51.3 million, an increase of $1.0 million or 2.0 percent compared with the FY 2021 Enacted level.

Superfund Research Program

Effect of Exposures on the Immune Response

Exploring how environmental contaminants affect the immune system can reveal why some people may be more susceptible to immune-related diseases and infections. SRP grantees at the University of North Carolina, for instance, are working to determine if arsenic exposures, which affect hundreds of millions of people worldwide, are increasing the severity of COVID-19 infections.

At the Louisiana State University SRP Center, researchers have found a potential mechanism that explains the respiratory inflammation and oxidative stress observed when exposed to a component of particulate matter (PM) known as environmentally persistent free radicals. This finding could lead to intervention strategies for PM-associated diseases, such as cardiovascular disease.

SRP grantees conducting immune research
Credit: LSU SRP

To better understand how PFAS impacts pathogen response, SRP grantees at North Carolina State University use several model systems to study how PFAS affect immune suppression including B cell development and antibody production. Another SRP research team at the University of Rhode Island is exploring the link between PFAS exposure profiles, immune dysfunction, and metabolic abnormalities in an established cohort from the Faroe Islands. Preliminary findings suggest that PFAS alter adipokine hormones, which help regulate metabolic and immune processes.

At the University of California, San Diego SRP Center, researchers explore inflammatory responses in autoimmune diseases. They found that modifying the activity of a protein called REV-ERB alpha, they can manipulate the activity of T-helper cells. This provides an opportunity to reduce inflammation and could lead to treatments for certain autoimmune diseases.

SRP researchers at UAB are examining how certain heavy metals exacerbate lower respiratory tract infections and lung injury in a community of low socio-economic status. The team studies the involvement of lung macrophages, which have a critical role in host defense to respiratory pathogens. This research may provide a potential therapeutic target to reduce the damage seen in these chronic lung diseases.

NIH/NIEHS Worker Training Program (WTP)
Science in Service to Society

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. WTP funds training conducted in all regions of the country through a network of non-profit organizations. These organizations are committed to protecting workers and their communities by creating and delivering high quality safety and health curricula. The program has built a national workforce that can protect themselves, co-workers, and communities from environmental hazards as well as responding to natural and man-made disasters.

WTP: Answering the call/Addressing public health needs with great urgency

In 2020, approximately 8,000 courses were provided to 138,000 workers for over 1 million contact hours. More than 3.6 million workers have been enrolled in training courses since WTP's inception. Training in courses such as incident command, emergency preparedness, and first aid/CPR allows communities to respond effectively when incidents happen such as chemical spills, fires, explosions, tornadoes, and infectious disease outbreaks.

Recipients of WTP grants lead training to prepare workers in safe handling of hazardous materials and disaster response in their communities and businesses. In Michigan, at the Ford New Model Program Development Center, an employee was able to extinguish a fire in a paper shredder truck as a result of their WTP Emergency Response training. This allowed the company to keep shipments moving to the facility and saved thousands of dollars in lost time. In other examples, a Minnesota Department of Transportation (MnDOT) employee used their WTP training to help remediate a spill of asbestos-contaminated water that had been released by a contractor along a busy interstate, while another MnDOT employee used their training to help contain a ditch full of a gasoline additive when a semi-truck hit a railcar.

WTP Trainees at a car assembly plant in Ohio
Credit: Midwest Consortium for Hazardous Waste Worker Training

As part of its mandate, WTP trains workers how to respond to wildfires. During 2020, a number of WTP grantees have been involved in responding to wildfires along the West Coast. In Oregon a WTP-funded training manager was deployed who served as a team manager and conducted search and recovery operations. Other grantees involved in the wildfire response includes the National Day Laborer Organizing Network, through the United Steelworkers' Tony Mazzochi Center, which developed training for community fire prevention and protection for both workers and homeowners, and the International Association of Fire Fighters who were involved in firefighting and response support.

WTP: Closing the Gap in Health Disparities

WTP is working to close the gap in health disparities. The health equity curriculum at the University of California Los Angeles, Labor and Occupational Safety and Health Program (UCLA LOSH) developed under WTP funding helps students recognize and address social determinants of occupational health and safety equity and the impact of institutionalized discrimination at work. The course is designed to help graduate-level students recognize worker health inequities and identify ways they can be eliminated. The curriculum has been viewed over 1,000 times from the UCLA LOSH website since it was uploaded in October 2016.

NY Saint Regis Mohawk Tribe during HAZWOPER training
Credit: Alabama Fire College Workplace Safety Training

WTP has continued to fund training for Native Americans. For instance, members of the Umatilla and Cayuse tribes in Oregon recently completed OSHA 510 and 500 construction and trainer development courses. The members are now able to facilitate OSHA 10- and 30-hour training that supports a safe and healthful work environment, including avoiding job site hazards. As a result, these two tribes now have their own health and safety training capacity for the first time.

For decades WTP's Environmental Career Worker Training Program (ECWTP) has been diversifying the workforce. Since 1995, the ECWTP has trained 13,000 workers from diverse backgrounds and has developed a decades-long community-based capacity to continue these programs. By helping to increase sustainable employment opportunities, promote economic development, address health disparities, and advance environmental justice, the program has transformed the lives of trainees, families, and communities traditionally overburdened by economic distress and ongoing, multiple exposures to hazardous environmental conditions.

Students participate in HAZWOPER training, Cypress Mandela Training Center, CA
Credit: ICWUC Center for Worker Health and Safety Education

WTP funding has built health and safety training expertise across minority populations through the International Chemical Workers Union Council Center (ICWUC) that includes the Coalition of Black Trade Unionists, the Labor Council for Latin American Advancement, the National Council for Occupational Safety and Health, and the Cypress Mandela Training Center. One partner organization said, "The ICWUC Center for Worker Health and Safety Education has been a vital ally in the fight for environmental justice. The trainings offered, the coalition it has built, and the impact it has had cannot be measured in words, but the impact has spread beyond borders."

Bringing job skills to remote Native Alaskan communities has long been a priority of WTP. For instance, the University of Washington (UW), under Western Region Universities Consortium (WRUC), has formed a new partnership with the Alaska Forum Environmental Training and Apprenticeship Program (ETAP). The AK Forum ETAP provides industry-recognized trainings and job placement assistance to support a workforce that meets the requirements of employers offering environmental and natural resource-related jobs across the state. Skilled environmental workers are needed throughout remote native Alaskan communities, where new resource developments, resource management projects, contaminated backhaul sites, illegal dump areas, solid waste management issues, and other environmental services are creating new employment opportunities. Recently, the UW and the AK Forum collaborated and conducted a 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) and 8-hour HAZWOPER refresher training in Nome, Alaska.

WTP: Years of training allowed us to respond effectively

The WTP Ebola Biosafety and Infectious Disease Response training program built federal capacity for biosecurity, biopreparedness, and rapid response to emerging infectious diseases and developed an infrastructure of trainers and organizations who can be a resource during emergencies. The investment in the Ebola training program provided a sound foundation for WTP to respond to COVID-19. It established trainers around the country with expertise on infectious disease who were prepared to tailor existing materials to the new pathogen and train a variety of worker sectors.

KY Nursing students participate in infectious disease training
Credit: Duke Infectious Disease Response Training program

The core component of WTP, the Hazardous Waste Worker Training Program, initiated in 1987, provides occupational safety and health training for workers who may be engaged in activities related to hazardous waste removal, containment, or chemical emergency response. More than three million workers have been trained since its inception. Decades of teaching workers about safely engaging in hazardous materials provided the support to ensure trainees can effectively respond to cleanup of Superfund and National Priority List sites.

WTP: Importance of continued investment in the future

WTP began a new five-year funding cycle on August 1, 2020. With this new cycle and ongoing funding, the program can invest in new communities, bring in new partner organizations to reach more worker sectors and more racially diverse populations, and direct more funds to enhance infectious disease expertise. For example, under the ECWTP, grantees will be providing construction, environmental remediation, and job skills to new communities in Roxbury, Massachusetts; Indianapolis, Indiana; San Juan Puerto, Rico; Orlando, Florida; and Native Alaskan tribal groups. New grantee partners for this funding cycle include the Los Angeles Black Worker Center, the Association of Occupational and Environmental Clinics, and the Migrant Clinicians Network.

ECWTP Construction skills training
Credit: NJ/NY Hazardous Materials Worker Training Center

Worker Training Program

The Environmental Career Worker Training Program (ECWTP) – 25 Years of Training Success!

The ECWTP empowers underrepresented individuals with training that increases their employment opportunities and promotes engagement in community improvement efforts. ECWTP grantees collaborate with an extensive network of nonprofits, unions, academic institutions, and employers. Since 1995, ECWTP has provided job training to more than 13,000 workers in underserved communities in more than 25 states, teaching the skills necessary to obtain employment in environmental cleanup and construction fields. ECWTP graduates are 59 percent more likely to obtain jobs that lead to careers and receive higher wages.

ECWTP student learning construction skills
Credit: CPWR-The Center for Construction Research and Training

Student interviews from ECWTP graduates illustrate a powerful transformative effect on their lives. Graduates have recounted how ECWTP training granted them the ability to gain a good job leading to a stable career, increased support for their families, and even starting their own business. The following two examples illustrate ECWTP success.

A graduate of ECWTP training was earning minimum wage, had unstable housing, and had been previously incarcerated. After he completed an ECWTP training program, his life changed dramatically. He is now a journeyman and recently reported that he earns over $100,000, has purchased a home, and has paid for his child's education. As a result of WTP training, he has a stable life and a solid future.

Another recipient of WTP training became a small-town mayor in Maryland. She also works with an economic development corporation as its Latino Business Liaison. After graduating from the ECWTP training, she worked as an assistant for the Alice Hamilton Occupational Health Center which provided training and research advocacy services in occupational safety and health and pollution prevention. ECWTP training also provided her with a launching point to complete her bachelor's degree.

For 25 years the ECWTP has been improving communities and changing lives for the better.

Budget Policy: The FY 2022 President's Budget request for WTP is $27.6 million, an increase of $0.9 million or 3.4 percent compared with the FY 2021 Enacted level.

Research Management and Support (RMS):
The RMS allocation provides administrative, logistical, and scientific support in the review, award, and monitoring of SRP research grants and WTP training grants. Other RMS functions include program planning, coordination, and evaluation, as well as liaison with other Federal agencies, stakeholders, and the public. For example, RMS supported SRP staff in the development of the new SRP Strategic Plan through research, data collection, and organizational support. RMS support also funded research translation efforts to communicate research findings to a larger audience. RMS also supports the National Clearinghouse for Worker Safety and Health Training, a national resource for curricula, technical reports, and weekly news that provides technical assistance to hazardous waste workers, WTP staff, program awardees, and the public; this resource included specific activities in 2020 on disaster response coordination for COVID-19.

Budget Policy: The FY 2021 President's Budget request is $4.7 million, an increase of $0.1 million or 2.5 percent compared with the FY 2021 Enacted level.

NATIONAL INSTITUTES OF HEALTH
Superfund

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
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[1]	$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	$53,967,000	$80,000,000	$78,349,000	$79,000,000
Rescission				$0
2020	$66,581,000	$80,000,000	$81,000,000	$81,000,000
Rescission				$0
2021	$73,688,000	$83,000,000	$81,500,000	$81,500,000
Rescission				$0
2022	$83,540,000			

[1] Budget Estimate to Congress includes mandatory financing.

NATIONAL INSTITUTES OF HEALTH
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Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2021 Amount Authorized	FY 2021 Enacted	2022 Amount Authorized	FY 2022 President's Budget
Environmental Protection Agency's Hazardous Substance Superfund	CERCLA Section 311(a)	42§9660 Section 9660(a)	Indefinite	$81,500,000	Indefinite	$83,540,000
	SARA Section 126(a)	42§9660 Section 9660(a)	Indefinite		Indefinite	
Total, Budget Authority				$81,500,000		$83,540,000

NATIONAL INSTITUTES OF HEALTH
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Amounts Available for Obligation[1]

(Dollars in Thousands)

Source of Funding	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Appropriation	$81,000	$81,500	$83,540
Secretary's Transfer	0	0	0
OAR HIV/AIDS Transfers	0	0	0
Subtotal, adjusted budget authority	$81,000	$81,500	$83,540
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$81,000	$81,500	$83,540
Unobligated balance lapsing	-7	0	0
Total obligations	$80,993	$81,500	$83,540

[1] Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
FY 2020 - $9,948 FY 2021 - $16,053 FY 2022 - $12,000

NATIONAL INSTITUTES OF HEALTH
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Budget Authority by Object Class[1]

(Dollars in Thousands)

		FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021 Enacted
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, Commissioned Corps (42 U.S.C. 207)	$0	$0	$0
	Average salary of ungraded positions	$0	$0	$0
	OBJECT CLASSES	**FY 2021 Enacted**	**FY 2022 President's Budget**	**FY 2022 +/- FY 2021**
	Personnel Compensation			
11.1	Full-Time Permanent	1,220	1,248	28
11.3	Other Than Full-Time Permanent	215	220	5
11.5	Other Personnel Compensation	21	21	0
11.7	Military Personnel	0	0	0
11.8	Special Personnel Services Payments	0	0	0
11.9	**Subtotal Personnel Compensation**	**$1,456**	**$1,489**	**$33**
12.1	Civilian Personnel Benefits	528	556	28
12.2	Military Personnel Benefits	0	0	0
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$1,984**	**$2,045**	**$61**
21.0	Travel & Transportation of Persons	58	59	1
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	1	1	0
24.0	Printing & Reproduction	0	0	0
25.1	Consulting Services	32	33	1
25.2	Other Services	1,053	1,074	21
25.3	Purchase of goods and services from government accounts	1,418	1,448	30
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**	**$2,503**	**$2,555**	**$52**
26.0	Supplies & Materials	8	8	0
31.0	Equipment	0	0	0
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	76,946	78,872	1,926
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	**$79,516**	**$81,495**	**$1,979**
	Total Budget Authority by Object Class	**$81,500**	**$83,540**	**$2,040**

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

NATIONAL INSTITUTES OF HEALTH
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Salaries and Expenses

(Dollars in Thousands)

OBJECT CLASSES	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation			
Full-Time Permanent (11.1)	$1,220	$1,248	$28
Other Than Full-Time Permanent (11.3)	215	220	5
Other Personnel Compensation (11.5)	21	21	0
Military Personnel (11.7)	0	0	0
Special Personnel Services Payments (11.8)	0	0	0
Subtotal Personnel Compensation (11.9)	**$1,456**	**$1,489**	**$33**
Civilian Personnel Benefits (12.1)	$528	$556	$28
Military Personnel Benefits (12.2)	0	0	0
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$1,984**	**$2,045**	**$61**
Travel & Transportation of Persons (21.0)	$58	$59	$1
Transportation of Things (22.0)	0	0	0
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	1	1	0
Printing & Reproduction (24.0)	0	0	0
Other Contractual Services:			
Consultant Services (25.1)	32	33	1
Other Services (25.2)	1,053	1,074	21
Purchases from government accounts (25.3)	1,418	1,448	30
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	**$2,503**	**$2,555**	**$52**
Supplies & Materials (26.0)	$8	$8	$0
Subtotal Non-Pay Costs	**$2,570**	**$2,623**	**$53**
Total Administrative Costs	**$4,554**	**$4,668**	**$114**

National Institutes of Health
Budget Request by Institute and Center

(Dollars in Thousands)[1]	FY 2020 Final[6]	FY 2021 Enacted[6]	FY 2022 President's Budget[7]
NCI	$6,440,438	$6,558,805	$6,733,302
NHLBI	$3,625,258	$3,664,703	$3,845,681
NIDCR	$477,679	$484,843	$516,197
NIDDK[2]	$2,265,146	$2,281,931	$2,360,748
NINDS	$2,446,577	$2,510,913	$2,783,300
NIAID	$5,876,195	$6,067,071	$6,245,926
NIGMS[3]	$2,937,218	$2,991,417	$3,096,103
NICHD[4]	$1,797,780	$1,837,972	$1,942,117
NEI	$823,325	$835,521	$858,535
NIEHS[5]	$883,598	$896,168	$1,020,647
NIA	$3,545,869	$3,899,926	$4,035,591
NIAMS	$624,889	$634,286	$680,186
NIDCD	$490,692	$498,073	$511,792
NIMH	$2,042,966	$2,105,902	$2,213,574
NIDA	$1,457,724	$1,480,309	$1,852,503
NIAAA	$546,696	$554,882	$570,165
NINR	$172,363	$174,936	$199,755
NHGRI	$604,118	$616,012	$632,973
NIBIB	$404,638	$410,726	$422,039
NIMHD	$335,812	$391,586	$652,244
NCCIH	$151,877	$154,079	$184,323
NCATS	$832,888	$855,421	$878,957
FIC	$80,827	$84,013	$96,322
NLM	$456,911	$462,138	$474,864
OD[4]	$2,163,516	$2,283,867	$2,394,859
ARPA-H	---	---	$6,500,000
B&F	$200,000	$200,000	$250,000
Total, NIH Program Level	**$41,685,000**	**$42,935,500**	**$51,952,703**
Special Type 1 Diabetes Research	-$150,000	-$150,000	-$141,450
PHS Program Evaluation	-$1,230,821	-$1,271,505	-$1,271,505
Interior Approp. (Superfund Research)	-$81,000	-$81,500	-$83,540
Total, NIH Labor/HHS Budget Authority	**$40,223,179**	**$41,432,495**	**$50,456,208**

[1] Includes funding derived by transfer from the NIH Innovation Account under the 21st Century Cures Act.

[2] Includes Type 1 Diabetes mandatory funding as shown later in the table.

[3] Includes Program Evaluation financing as shown later in the table.

[4] FY 2020 and FY 2021 levels for OD and NICHD are adjusted for comparability with the proposed transfer of ECHO and INCLUDE to NICHD in FY 2022.

[5] Includes Interior Appropriations for Superfund Research activities as shown later in the table.

[6] Amounts for FY 2020 and FY 2021 reflect directive transfer of $5.0 million from OD to the HHS Office of Inspector General, and HIV/AIDS transfers across ICs under the authority of the Office of AIDS Research.

[7] Reflects directive transfer of $5.0 million from OD to the HHS Office of Inspector General.

NATIONAL INSTITUTES OF HEALTH

FY 2022 Congressional Justification

Budget Mechanism - Total[1,2,3]

(Dollars in Thousands)[1,2,3]	FY 2020 Final[7,8]		FY 2021 Enacted[7,8]		FY 2022 President's Budget[7,9]		FY 2022 +/- FY 2021	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	28,415	$15,903,452	29,040	$16,402,139	29,718	$17,350,182	678	$948,043
Administrative Supplements[3]	*(2,723)*	555,090	*(2,573)*	509,636	*(2,388)*	456,192	*(-185)*	-53,443
Competing	11,395	$6,395,871	11,189	$6,492,703	12,664	$7,191,779	1,475	$699,075
Subtotal, RPGs	39,810	$22,854,413	40,229	$23,404,478	42,382	$24,998,153	2,153	$1,593,675
SBIR/STTR	1,833	1,127,734	1,854	1,154,534	1,961	1,229,604	107	75,069
Research Project Grants	41,643	$23,982,147	42,083	$24,559,013	44,343	$26,227,757	2,260	$1,668,744
Research Centers:								
Specialized/Comprehensive	999	$1,937,294	1,063	$2,036,557	1,104	$2,132,854	41	$96,297
Clinical Research	70	432,804	67	419,359	66	418,554	-1	-805
Biotechnology	73	125,526	64	102,802	59	93,653	-5	-9,149
Comparative Medicine	48	138,385	51	141,435	52	141,514	1	79
Research Centers in Minority Institutions	21	74,111	22	78,386	25	86,000	3	7,614
Research Centers	1,211	$2,708,120	1,267	$2,778,539	1,306	$2,872,575	39	$94,036
Other Research:								
Research Careers	4,461	$835,776	4,558	$862,683	4,761	$896,618	203	$33,935
Cancer Education	59	14,878	83	20,939	85	21,439	2	500
Cooperative Clinical Research	272	498,295	265	501,540	268	508,255	3	6,715
Biomedical Research Support	125	89,486	131	91,397	130	90,994	-1	-403
Minority Biomedical Research Support	286	98,392	257	88,594	190	66,696	-67	-21,898
Other	2,127	1,273,872	2,265	1,431,756	2,454	1,512,570	189	80,814
Other Research	7,330	$2,810,700	7,559	$2,996,908	7,888	$3,096,571	329	$99,663
Total Research Grants	50,184	$29,500,967	50,909	$30,334,460	53,537	$32,196,903	2,628	$1,862,443
Ruth L Kirchstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	3,919	$186,323	4,005	$196,857	4,106	$209,440	101	$12,584
Institutional Awards	13,089	720,929	13,550	755,007	13,843	809,755	293	54,748
Total Research Training	17,008	$907,252	17,555	$951,864	17,949	$1,019,196	394	$67,332
Research & Develop. Contracts	2,304	$3,295,504	2,355	$3,362,683	2,521	$3,561,276	166	$198,593
(SBIR/STTR) (non-add) [3]	*(109)*	*(71,684)*	*(116)*	*(76,634)*	*(121)*	*(82,267)*	*(5)*	*(5,632)*
Intramural Research		$4,460,682		$4,548,996		$4,695,985		$146,989
Res. Management & Support		1,979,165		2,090,554		2,184,166		93,612
Res. Management & Support (SBIR Admin) (non-add) [3]		*(7,762)*		*(10,128)*		*(10,116)*		*(-11)*
Office of the Director - Appropriation [3,4]		*(2,163,516)*		*(2,283,867)*		*(2,394,859)*		*(110,992)*
Office of the Director - Other		1,230,430		1,335,443		1,431,636		96,194
ORIP (non-add) [3,4]		*(293,976)*		*(299,885)*		*(304,684)*		*(4,798)*
Common Fund (non-add) [3,4]		*(639,111)*		*(648,539)*		*(658,539)*		*(10,000)*
ARPA-H		0		0		6,500,000		6,500,000
Buildings and Facilities[5]		230,000		230,000		280,000		50,000
Appropriation [3]		*(200,000)*		*(200,000)*		*(250,000)*		*(50,000)*
Type 1 Diabetes[6]		-150,000		-150,000		-141,450		8,550
Program Evaluation Financing[6]		-1,230,821		-1,271,505		-1,271,505		0
Subtotal, Labor/HHS Budget Authority		**$40,223,179**		**$41,432,495**		**$50,456,208**		**$9,023,713**
Interior Appropriation for Superfund Research		81,000		81,500		83,540		2,040
Total, NIH Discretionary Budget Authority		**$40,304,179**		**$41,513,995**		**$50,539,748**		**$9,025,753**
Type 1 Diabetes		150,000		150,000		141,450		-8,550
Total, NIH Budget Authority		**$40,454,179**		**$41,663,995**		**$50,681,198**		**$9,017,203**
Program Evaluation Financing		1,230,821		1,271,505		1,271,505		0
Total, Program Level		**$41,685,000**		**$42,935,500**		**$51,952,703**		**$9,017,203**

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

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

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

4 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.

5 Includes B&F appropriation and monies allocated pursuant to appropriations acts provisions such that funding may be used for facilities repairs and improvements at the NCI Federally Funded Research and Development Center in Frederick,

6 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.

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

8 Amounts are adjusted for comparability with the proposed transfer of ECHO and INCLUDE from OD to NICHD in FY 2022.

9 Reflects Type 1 Diabetes Research sequestration of $8.55 million.

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

Institutes and Centers	FY 2020 Actual	FY 2021 Estimate	FY 2022 Estimate
NCI	2,993	3,090	3,193
NHLBI	817	962	962
NIDCR	230	247	252
NIDDK	632	666	666
NINDS	525	549	607
NIAID	1,969	2,051	2,051
NIGMS	171	184	184
NICHD[1]	520	561	602
NEI	269	282	282
NIEHS	625	662	672
NIA	438	478	520
NIAMS	219	238	238
NIDCD	130	140	140
NIMH	548	577	589
NIDA	363	388	388
NIAAA	219	238	238
NINR	85	96	111
NHGRI	334	351	370
NIBIB	92	102	102
FIC	59	61	61
NIMHD	66	71	107
NCCIH	71	79	90
NCATS	187	239	277
NLM	647	741	741
OD[1]	875	952	975
ARPA-H	---	---	50
Central Services:			
OD - CS	792	841	851
CC	1,883	1,995	2,035
CSR	409	422	427
CIT	227	257	257
ORS	512	539	539
ORF	716	726	726
Subtotal Central Services[2]	**4,539**	**4,780**	**4,835**
PHS Trust Fund (non-add) [3]	*4*	*4*	*4*
CRADA (non-add) [4]	*6*	*6*	*6*
Total	**17,623**	**18,785**	**19,303**

[1] Includes transfer of 11 ECHO FTEs from OD to NICHD in FY 2022.

[2] Reflects FTE associated with Central Services positions whose payroll costs are financed from the NIH Management Fund and the NIH Service and Supply Fund.

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

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