



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



CONGRESSIONAL JUSTIFICATION
FY 2024

Department of Health and Human Services
National Institutes of Health

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

NIEHS Superfund-Related Activities (NIEHS-SF)

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General Notes

1. Tables in this document do not include supplemental funding, other than the Amounts Available for Obligation table.
2. Detail in this document may not sum to the subtotals and totals due to rounding.

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Director's Overview

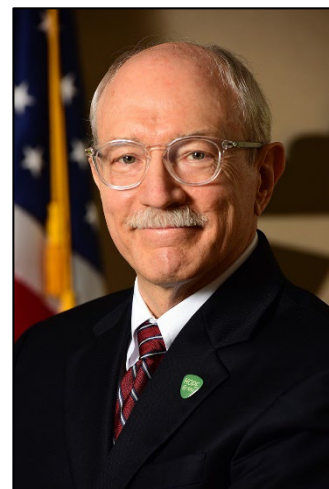
The NIH, NIEHS Hazardous Substance Basic Research and Training Program, or Superfund Research Program (SRP) and Worker Training Program (WTP), were created under the Superfund Amendments and Reauthorization Act (SARA) of 1986 to meet the need for innovative strategies and technologies to provide solutions to the magnitude and complexity of Superfund assessment and remediation. SRP and WTP are interdependent and collectively referred to as the “NIEHS Superfund Program.”

These two programs complement each other, in creating a healthier nation, providing economic benefits, and better preparing us to assist our partners in facing and solving a wide array of environmental health and cleanup issues. The SRP fosters multidisciplinary research, fundamental creative discoveries, and innovative research strategies focused on solving problems related to Superfund sites through university-based grants on basic biological, environmental, and engineering processes. To achieve SRP's central goal of understanding and breaking the link between chemical exposures and disease, teams of diverse professionals develop, test, and implement unique, solution-oriented approaches to address complex environmental health issues. These teams use the SRP systems approach that elucidates the complex interactions between factors that contributes to or protect against environmental insults while building a foundation for researchers to address difficult emerging environmental health problems.

WTP provides health and safety training for workers who may be involved in handling hazardous materials or in responding to emergency releases of hazardous materials. Since 1987, WTP has funded a network of nonprofit organizations that conduct training in every U.S. state and territory. The program is committed to creating a national workforce that can protect themselves and communities from environmental hazards. More than four million workers have been trained since its inception. These workers gain new skills on how to safely handle, remove, and contain hazardous waste.

The NIEHS SRP and WTP constitute a shared effort to improve human health and the environment through reducing or eliminating the harmful health effects from hazardous environmental exposures.

The NIEHS Superfund Program has the infrastructure in place — e.g., research, training, and communication — to protect and promote health, ensuring health at all stages of life for all people. For example, SRP grantees at the University of New Mexico studied metal exposures in Navajo communities and micronutrient intake on developmental outcomes. They found that adverse effects of metals during pregnancy may start during infancy, but micronutrients can neutralize some negative health effects of toxic metals. Continuing research will assess potential risk posed by abandoned mines and waste sites across the Navajo Nation on children's developmental growth and trajectories, which may lead to better early screening along with intervention strategies.



Rick Woychik, Ph.D., NIEHS Director

Similarly, through the years, long-term investments by the NIEHS Superfund Program have moved fundamental research, training, and partnerships to beneficial applications that ultimately foster prevention and intervention strategies. A novel bioremediation technology, funded by SRP, for cleaning up per- and polyfluoroalkyl substances (PFAS) has been developed by Texas A&M AgriLife researchers. The technology has commercial application potential that could dispose of PFAS, thereby protecting human health and the ecosystem in a non-toxic, more cost-effective way.

By leveraging partnerships through established programs to train workers and researchers, SRP and WTP are also inspiring the next generation of researchers and workers. Through WTP funding, the Sustainable Workplace Alliance (SWA) provides training to employers and employees in areas such as Hazardous Waste Operations, hazardous materials (HazMat) transportation, and emergency response. The training also introduces young workers to careers and key skill sets, as it does with SWA's partnership with the Puerto Rico Army Explorers (PRAE). PRAE is a non-profit career exploration program focusing on public service. The program exposes its members to career opportunities in the military, law enforcement agencies, or emergency services. SWA provides first aid, CPR, and emergency preparedness training to program participants.

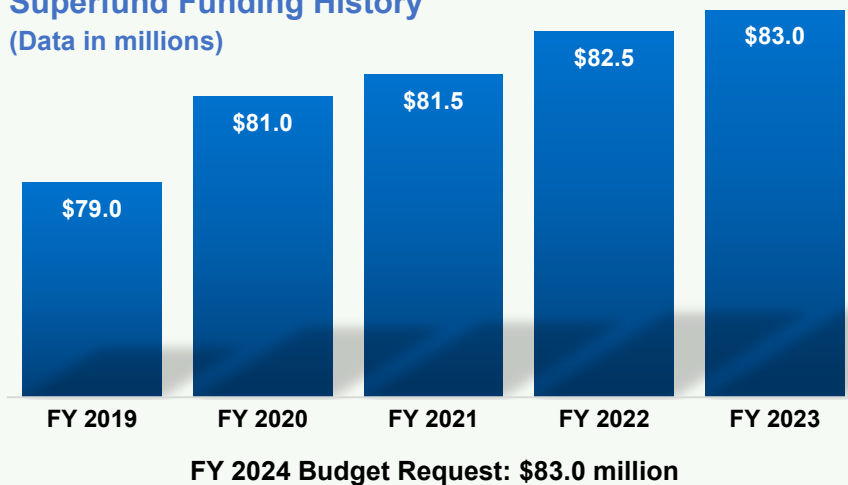


Puerto Rico Army Explorers receiving first aid training. Photo courtesy of Sustainable Workplace Alliance.

Overview of the Program

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

Superfund Funding History (Data in millions)



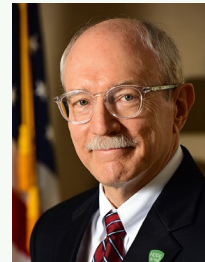
Recent Accomplishments

SRP:

- Developed a new water filter that can remove PFAS from drinking water and discovered a method to break down PFAS into smaller, non-toxic molecules.
- Created comprehensive tools to understand and address exposures to mixtures during climate-related disaster events.
- Improved methods for comparing and quantifying PCBs in air that help remediation at Superfund sites and in schools.
- Created a new portable device to detect lead in tap water.

WTP:

- Trained workers on continuing and emerging health and safety hazards such as asbestos, anhydrous ammonia, PFAS, lead, electrical, and trenches.
- Implemented lessons learned from COVID-19 into broader pandemic preparedness training/resources.
- Held a workshop on preparing workers for the impacts of climate change.
- Continuing to expand employment opportunities for formerly incarcerated individuals through the ECWTP.



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:

- 39 funded grants in FY 2022
- Awarded grants to over 1,300 researchers at over 120 institutions and small businesses
- Grantees have patented over 200 inventions and published more than 12,300 research articles

WTP:

- 21 funded grants in FY 2022
- Trained over 3.7 million workers since 1987
- Environmental Careers Worker Training Program (ECWTP): Annual investment of \$3.5 million generates a \$100 million return
- Trained over 100,000 workers who face potential COVID-19 exposure





Program Highlights:

SRP: Investigating links between PFAS exposure and health effects including COVID-19 susceptibility.



WTP: 2022: Trained over 138,000 workers in approximately 8,700 courses for 1.2 million contact hours.

Future Initiatives

SRP is expanding existing research and training infrastructure and leveraging multidisciplinary partnerships to address the effects of emerging challenges including climate change. Scientists are sharing and integrating data and analytical methods to answer new environmental health questions and better understand the exposome, which is a new approach for a comprehensive evaluation of environmental exposures. In addition, SRP is broadening research on how exposures combine to create health disparities and determining the best ways to communicate environmental health risks to the public. SRP is continuing to facilitate multidisciplinary collaborations and leveraging team science approaches to find solutions to complex environmental problems.

WTP is committed to creating a national workforce that can protect themselves, co-workers, and communities from environmental hazards. Trainees will gain the skills needed for jobs that engage in environmental cleanup, infrastructure building, and disaster response. The program's grantees continue to broaden partnerships that expand training opportunities, such as with small businesses, worker centers, and community organizations. WTP will also continue reaching vulnerable populations to give them skills that lead to successful employment and to support their health and safety needs under the continuing COVID-19 pandemic, opioid crisis, national emergencies, climate-related disasters, and wildfires.

SRP: Developing cost-effective remediation strategies that immobilize metals and prevent degradation of community water.



WTP: Trained thousands of workers for recovery from disasters, such as World Trade Centers, wildfires, and Hurricane Sandy. Provided new training resources on urban flooding, wildfires, and climate change.

SRP: Understanding how some components of our diets worsen effects pollutants, and how good nutrition can protect health.



WTP: ECWTP selected for White House Justice40 pilot program; has an average 70 percent employment rate.



SRP: Discovered potential therapy more effective at reducing inflammation and inflammatory pain compared to traditional drugs, including opioids.



Major Changes in the Budget Request

Major changes by budget mechanism and/or budget program detail are briefly described below. The FY 2024 President's Budget level for NIEHS Superfund is \$83.0 million, unchanged from the FY 2023 Enacted level.

Research Project Grants (-\$1.5 million; total \$2.3 million):

NIEHS Superfund plans to support a total of 9 RPG awards in FY 2024, excluding SBIR/STTR awards. Research project grants awarded on a competing basis in FY 2023 will receive noncompeting continuation in FY 2024. No additional competing RPGs are anticipated to be awarded in FY 2024.

Research Center Grants (+\$1.6 million; total \$45.2 million):

NIEHS Superfund plans to support a total of 23 Research Center awards in the area of Comparative Medicine in FY 2024, an increase of 1 award compared to the FY 2023 Enacted level.

BUDGET MECHANISM TABLE

NATIONAL INSTITUTES OF HEALTH

Superfund

Budget Mechanism*

(Dollars in Thousands)

Mechanism	FY 2022 Final		FY 2023 Enacted		FY 2024 President's Budget		FY 2024 +/- FY 2023	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
Research Projects:								
Noncompeting	10	\$2,582	10	\$2,652	9	\$2,240	-1	-\$412
Administrative Supplements	(3)	\$93	(3)	\$138	(2)	\$100	-(1)	-\$38
Competing:								
Renewal	0	\$0	0	\$0	0	\$0	0	\$0
New	2	\$465	2	\$1,088	0	\$0	-2	-\$1,088
Supplements	0	\$0	0	\$0	0	\$0	0	\$0
Subtotal, Competing	2	\$465	2	\$1,088	0	\$0	-2	-\$1,088
Subtotal, RPGs	12	\$3,139	12	\$3,877	9	\$2,340	-3	-\$1,538
SBIR/STTR	9	\$2,603	9	\$2,651	9	\$2,651	0	\$0
Research Project Grants	21	\$5,742	21	\$6,529	18	\$4,991	-3	-\$1,538
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	22	\$43,860	22	\$43,545	23	\$45,179	1	\$1,634
Research Centers in Minority Institutions	0	\$0	0	\$0	0	\$0	0	\$0
Research Centers	22	\$43,860	22	\$43,545	23	\$45,179	1	\$1,634
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	28	\$28,326	28	\$28,321	25	\$28,117	-3	-\$204
Other Research	28	\$28,326	28	\$28,321	25	\$28,117	-3	-\$204
Total Research Grants	71	\$77,928	71	\$78,395	66	\$78,287	-5	-\$108
Ruth L. Kirschstein Training Awards:	FITPs		FITPs		FITPs		FITPs	
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	\$4,612	0	\$4,640	0	\$4,748	0	\$108
SBIR Admin. (non-add)		(\$0)		(\$0)		(\$0)		(\$0)
Construction		\$0		\$0		\$0		\$0
Buildings and Facilities		\$0		\$0		\$0		\$0
Total, Superfund	0	\$82,540	0	\$83,035	0	\$83,035	0	\$0

* All items in italics and brackets are non-add entries.

NATIONAL INSTITUTES OF HEALTH

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, \$83,035,000. (*Department of the Interior, Environment, and Related Agencies Appropriations Act, 2023.*)

[NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES]

[For an additional amount for "National Institute of Environmental Health Sciences", \$2,500,000, to remain available until expended, for necessary expenses 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 related to the consequences of major disasters declared pursuant to the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. 5121 et seq.) in 2022.] (*Disaster Relief Supplemental Appropriations Act, 2023.*)

SUMMARY OF CHANGES

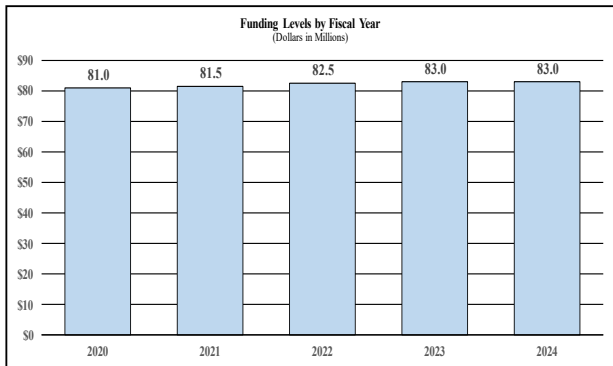
NATIONAL INSTITUTES OF HEALTH
Superfund

Summary of Changes
(Dollars in Thousands)

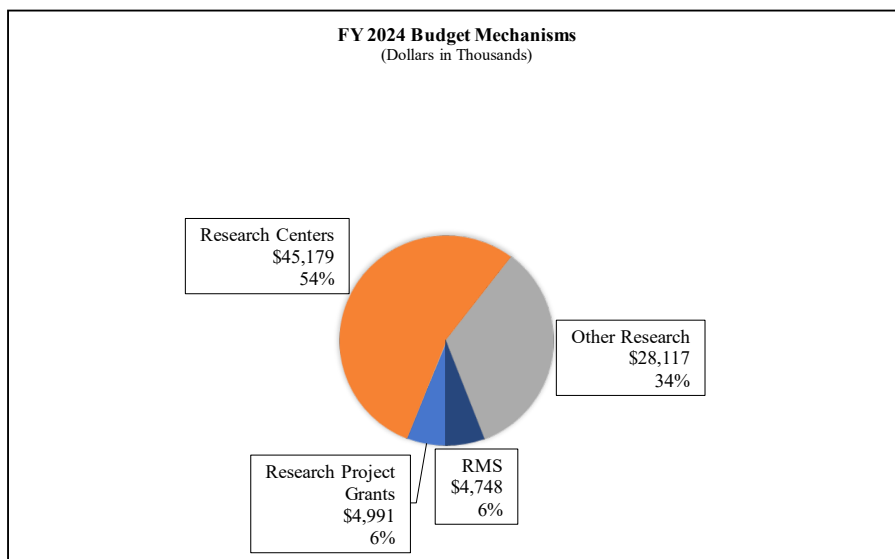
FY 2023 Enacted	\$83,035
FY 2024 President's Budget	\$83,035
Net change	\$0

CHANGES	FY 2023 Enacted		FY 2024 President's Budget		Built-In Change from FY 2023 Enacted	
	FTEs	Budget Authority	FTEs	Budget Authority	FTEs	Budget Authority
A. Built-in:						
1. Intramural Research:						
a. Annualization of FY 2023 pay and benefits increase		\$0		\$0		\$0
b. FY 2024 pay and benefits increase		\$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
2. Research Management and Support:						
a. Annualization of FY 2023 pay and benefits increase		\$2,040		\$2,149		\$22
b. FY 2024 pay and benefits increase		\$2,040		\$2,149		\$78
c. Paid days adjustment		\$2,040		\$2,149		\$8
d. Differences attributable to change in FTE		\$2,040		\$2,149		\$0
e. Payment for centrally furnished services		\$0		\$0		\$0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		\$2,600		\$2,599		\$61
Subtotal						\$169
Subtotal, Built-in						\$169
CHANGES	FY 2023 Enacted		FY 2024 President's Budget		Program Change from FY 2023 Enacted	
	No.	Amount	No.	Amount	No.	Amount
B. Program:						
1. Research Project Grants:						
a. Noncompeting	10	\$2,790	9	\$2,340	-1	-\$450
b. Competing	2	\$1,088	0	\$0	-2	-\$1,088
c. SBIR/STTR	9	\$2,651	9	\$2,651	0	\$0
Subtotal, RPGs	21	\$6,529	18	\$4,991	-3	-\$1,538
2. Research Centers	22	\$43,545	23	\$45,179	1	\$1,634
3. Other Research	28	\$28,321	25	\$28,117	-3	-\$204
4. Research Training	0	\$0	0	\$0	0	\$0
5. Research and development contracts	0	\$0	0	\$0	0	\$0
Subtotal, Extramural		\$78,395		\$78,287		-\$108
6. Intramural Research	0	\$0	0	\$0	0	\$0
7. Research Management and Support	0	\$4,640	0	\$4,748	0	-\$61
8. Construction		\$0		\$0		\$0
9. Buildings and Facilities		\$0		\$0		\$0
Subtotal, Program	0	\$83,035	0	\$83,035	0	-\$169
Total built-in and program changes						\$0

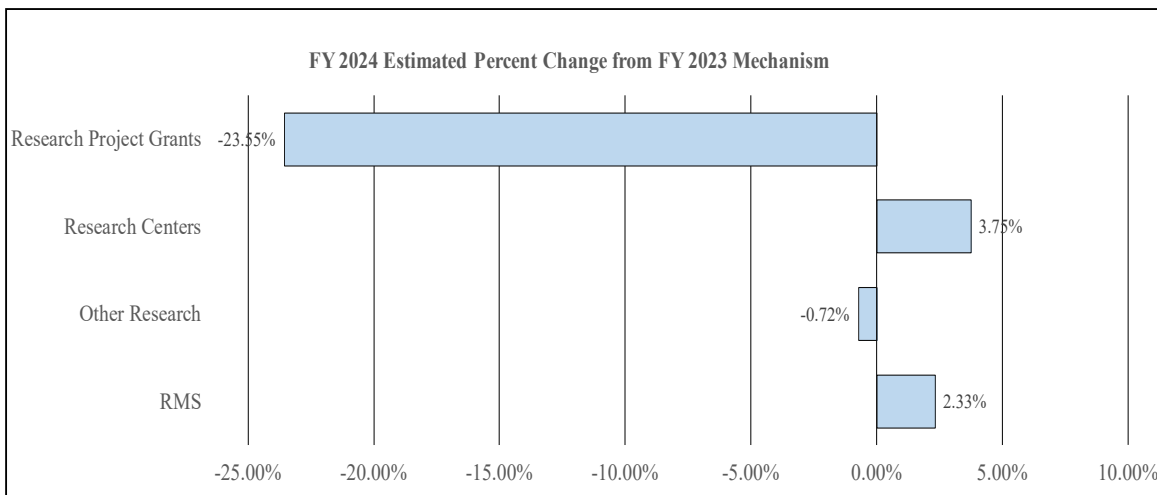
History of Budget Authority:



Distribution by Mechanism:

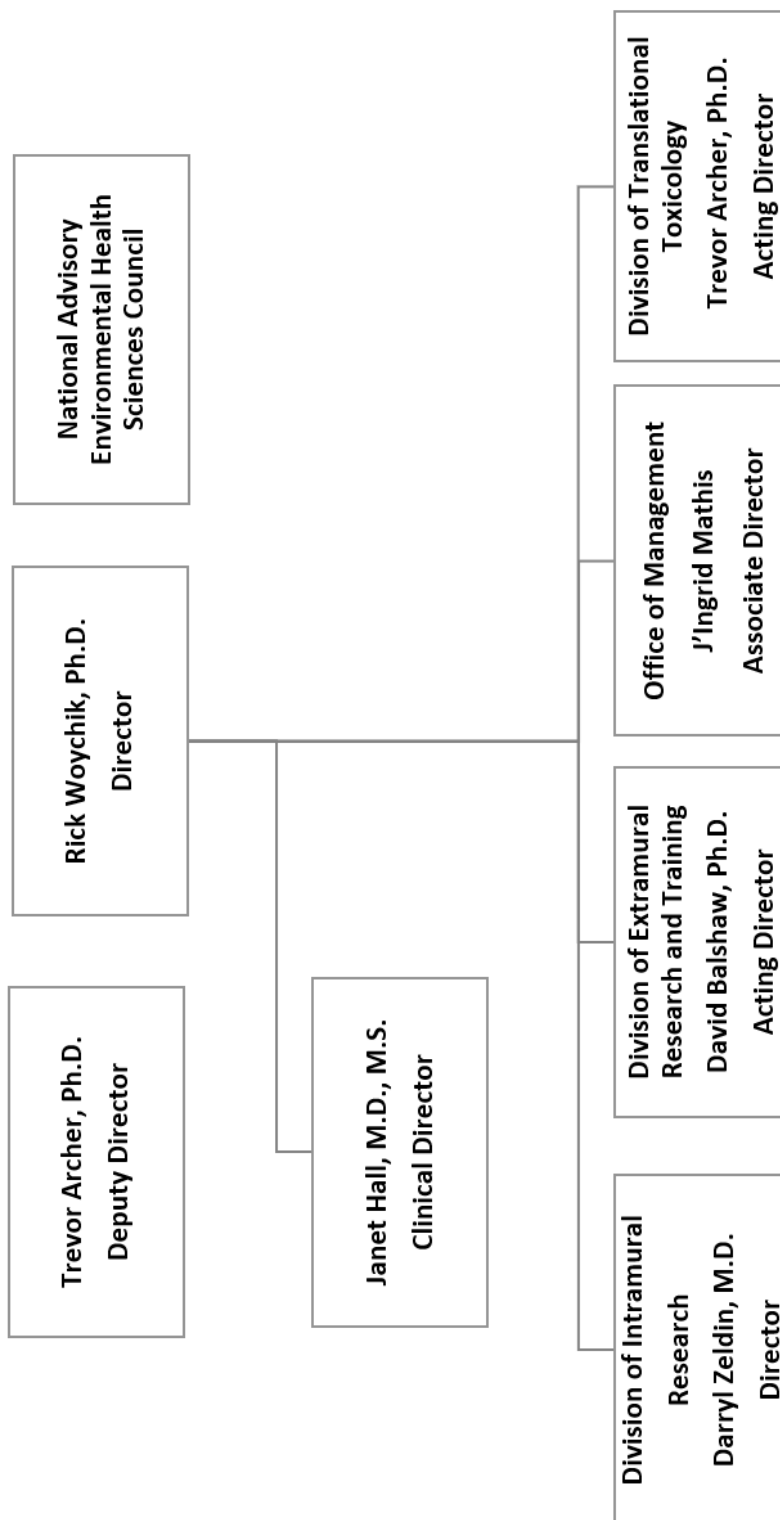


Change by Selected Mechanisms:



ORGANIZATION CHART

NATIONAL INSTITUTES OF HEALTH
National Institute of Environmental Health Sciences
Organization Structure



BUDGET AUTHORITY BY ACTIVITY TABLE

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Budget Authority by Activity *
(Dollars in Thousands)

	FY 2022 Final		FY 2023 Enacted		FY 2024 President's Budget		FY 2024 +/- FY 2023 Enacted	
	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>	<u>FTE</u>	<u>Amount</u>
<u>Extramural Research</u>								
<u>Detail</u>								
Superfund Research		\$50,653		\$51,109		\$51,012		-\$97
Worker Training Program		\$27,275		\$27,286		\$27,275		-\$11
Subtotal, Extramural		\$77,928		\$78,395		\$78,287		-\$108
Intramural Research	0	\$0	0	\$0	0	\$0	0	\$0
Research Management & Support	0	\$4,612	0	\$4,640	0	\$4,748	0	\$108
TOTAL	0	\$82,540	0	\$83,035	0	\$83,035	0	\$0

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

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 2022 Final	FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
BA	\$82,540,000	\$83,035,000	\$83,035,000	+\$0

FTEs are included with the regular NIEHS appropriation.

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

Overall Budget Policy: The FY 2024 President’s Budget request for NIEHS Superfund is \$83.0 million, unchanged from the FY 2023 Enacted level.

Program Descriptions

NIH/NIEHS Superfund Research Program (SRP)

Turning Discovery into Health: Science for Everyone by Everyone

SRP funds university-based grants to support basic biological, environmental, and engineering research 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: Ensuring Health at All Stages of Life for All People

An important part of the work by SRP researchers is ensuring health at all stages of life for everyone. For example, SRP scientists at the Northeastern University SRP Center are studying exposures that affect early life. They used a data mining approach and found connections that suggest exposure to a diverse array of chemicals contributes to racial disparities in preterm birth and that multiple chemicals drive these effects. Consequently, this work helps to prioritize chemicals for further study that may



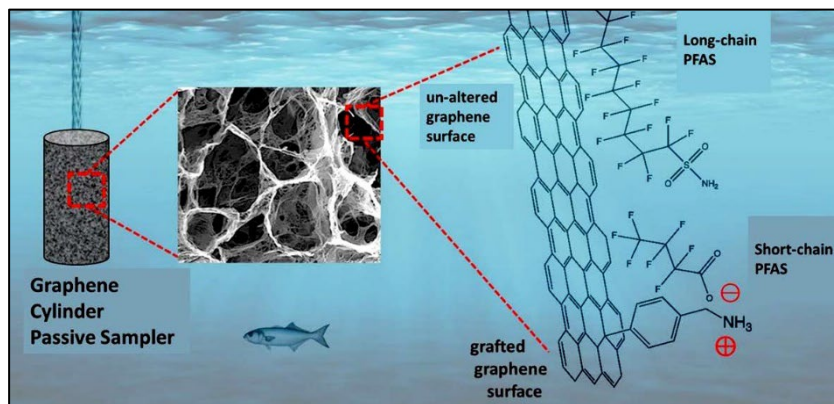
lead to a reduction of adverse exposures in the fight against preterm birth disparities.

Exposure to arsenic affects millions of people globally and SRP researchers at University of California, Berkeley have found that arsenic exposure in early life may accelerate aging. This important work lays the foundation for future research that might help determine how age acceleration from early life environmental exposures could be curtailed or prevented.

SRP: Developing Targeted Preventions and Cures

Per- and polyfluoroalkyl substances, or PFAS, are a large class of synthetic chemicals used in a variety of industrial and consumer products, such as firefighting foam and food packaging, and are associated with a range of adverse health effects. For years, SRP grantees have been conducting studies on PFAS to determine health effects and working to find prevention or intervention strategies to reduce or eliminate exposures.

Researchers from the SRP-funded centers at the University of Rhode Island (URI) and Brown University developed a new type of passive sampling device for PFAS. Their new tool overcomes many limitations to traditional approaches, such as detecting short-chain PFAS and low concentrations of the chemicals in water. Until now, effectively monitoring PFAS at low, environmentally relevant concentrations was difficult.



Sampling device, developed by URI and Brown University researchers. Becanova et al., 2021, Environ Sci Nano.

In addition, scientists at SRP URI Center have found that new types of PFAS can cause biological changes in liver cells. This study indicates that replacement PFAS, and PFAS still in use, can induce cellular changes that may have adverse human health effects that need further study.

SRP also works to develop targeted strategies that will ultimately reduce disparities. University of New Mexico Metals Exposure and Toxicity Assessment on Tribal Lands (METALS) SRP grantees in collaboration with Navajo EPA and community groups are working to develop the safest and best location to dispose abandoned uranium mine wastes from the Northeast Church Rock Mine, the largest underground uranium mine on the Navajo Nation. The analysis uses METALS data to inform uranium waste remediation regulatory policy and integrates health and environmental datasets generated by METALS in a risk prediction model.

Another example of SRP-funded research aiming to reduce disparities is the Northeastern University SRP Center. Scientists found differences in drinking water contamination before and after Hurricane Maria hit Puerto Rico in 2017. The team analyzed over 200 trace contaminants and found higher concentrations of arsenic, PFAS, pesticides, along with other chemicals, in

samples collected after the hurricane. This research helps lay the foundation to improve water resource management and quality after a hurricane.

SRP: Inspiring the Next Generation of Scientists

For years, the SRP has been inspiring the next generation of scientists by supporting more than 2,500 trainees. Trainees gain experience in multi- and cross-disciplinary training, networking, and solution-oriented research in a highly collaborative environment.

The SRP objective to train the next generation of scientists led to the establishment of an award honoring the late K.C. Donnelly, Ph.D., a longtime SRP grantee who worked tirelessly to improve understanding of environmental exposures. Through the annual awards, trainees work side-by-side with researchers in other areas of expertise to learn new methods and techniques, tackling difficult scientific questions.



K.C. Donnelly 2022 awardees.
Image courtesy of MDB, Inc.

SRP: Promoting the Public Good



University of Arizona researcher involved in a phytostabilization project. Photo courtesy of University of Arizona.

The SRP mission contains a core component of promoting the public good. To illustrate, SRP grantees at the University of Arizona found that rising temperatures associated with climate change may decrease vegetation and microbial density in desert ecosystems, which could negatively impact ecosystem sustainability. The team is exploring how to promote vegetation in these environments that will stabilize mining wastes and prevent the transport of contaminants.

Long-term exposure to polychlorinated biphenyls (PCBs) mixtures in school air may adversely affect the nervous and immune systems, according to an SRP-funded study in rats. Although PCBs were banned in the United States in the late 1970s, air in older schools may be contaminated with PCBs released from building materials. This study contributes to knowledge of the health effects of long-term PCB inhalation, which are poorly understood. According to the authors, results indicate that an exposure level similar to

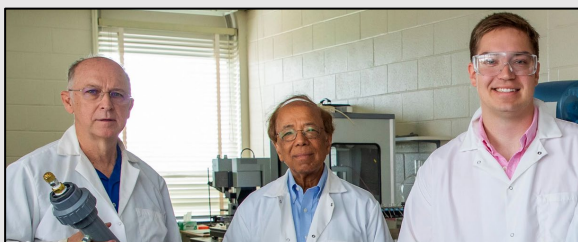
concentrations reported for some older schools may be close to the lowest dose in which airborne PCB exposure induces adverse health effects. In addition to studying health effects, researchers at the SRP-funded Center at the University of Iowa have also developed methods to better quantify PCBs in air, including at Superfund sites and in schools.

Superfund Research Program

SRP: Supporting Communities' Capacity to Respond to Pandemics and Disasters

The ongoing COVID-19 pandemic has exposed challenges to public health systems and highlighted the crucial importance of community capacity to respond not only to pandemics but also to disasters, particularly given the looming climate crisis. Using SRP ingenuity, leadership, and infrastructure, supporting communities before, during, and after pandemics and disasters continues to be crucial.

At the University of Kentucky SRP Center, researchers created new membranes that can deactivate SARS-CoV-2 on contact, preventing the spread of COVID-19. The membranes combine nanotechnology with antiviral substances, creating a material that can capture coronavirus-sized particles and effectively neutralize them. According to the team, masks made from this new material could block up to 98% of virus particles, outperforming the gold standard N95 masks.



Drs. Mills, Bhattacharyya, and Ormsbee: antiviral membrane study. Courtesy, UK SRP Center.

When Hurricane Harvey hit Texas, SRP researchers at the Texas A&M University quickly mobilized to evaluate human health hazards in a Houston neighborhood. Collaborating with community partner, Texas Environmental Justice Advocacy Services, they identified opportunities to build community resilience as well as sampled soil and water. Researchers compared the soil and water samples to pre-hurricane samples and established polycyclic aromatic hydrocarbon spatial trends to inform future studies. Similarly, in the aftermath of Hurricane Florence, SRP researchers at Duke University and North Carolina State University developed a mapping tool showing potential sources of contamination. The purpose of the map is to raise awareness about chemical contaminants that may have entered the environment during a flood, thereby raising community awareness in order to help reduce or prevent harmful exposures.

SRP-funded investigators at the University of California, Berkeley developed a new strategy to treat contaminated urban stormwater by coating sand with manganese oxide to effectively degrade pollutants. According to the researchers, their approach works over longer periods of time and is more cost-effective than regular stormwater treatment systems.

SRP: Fundamental Research to Tackle the Undiscovered

Sharing and integrating data to make new discoveries is one way SRP uses fundamental research in novel ways. SRP scientists at Columbia, University of California, Berkeley, and the University of New Mexico used an innovative method to combine their geoscience and biomedical data across three populations to better understand arsenic (As) exposure sources. Health risk estimates are primarily based on exposure to As in drinking water. The researchers compared As amounts that people ingest and found that the levels of As they excrete in urine were inconsistent. They observed that considering As intake from other exposure sources in water, food, and dust specific to each population significantly improved the match between As intake and excretion. For example, they identified that indoor dust likely plays a significant role in As exposure in the Navajo Nation.

MIT researchers, funded by SRP, have identified molecular details about how N-nitrosodimethylamine, or NDMA, a byproduct of several manufacturing processes and water chlorination, causes cancer in mice and how it supports an association found in a Massachusetts health department study. The team found that a



UNM trainees conduct research in the lab for phytoremediation project. Photo courtesy of University of New Mexico.

molecule in mice called alkyladenine DNA glycosylase (AAG) affects susceptibility to disease caused by NDMA. AAG has an enormous impact on whether cells will survive DNA damage and whether they will eventually develop mutations and cancer. Since the amount of AAG each person has can vary widely, this work illustrates how important individual susceptibility is in relation to environmental exposure and disease. Finding these associations may eventually lead to intervention or prevention strategies.

Budget Policy: The FY 2024 President’s Budget request for the Superfund Research Program (SRP) is \$51.0 million, a decrease of -\$0.1 million or -0.2 percent compared with the FY 2023 Enacted level.

Worker Training Program

Turning Discovery into Health: Science for Everyone by Everyone

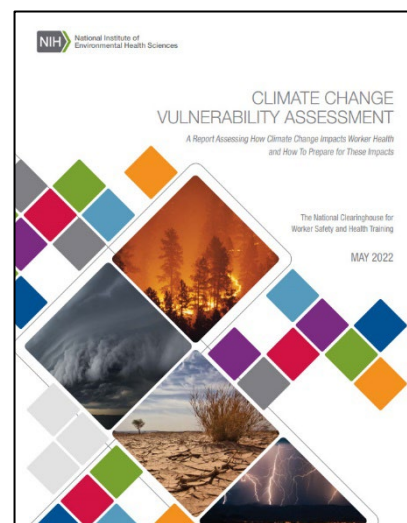
WTP provides the nation with a workforce trained in the safe handling of hazardous materials (HazMat) and waste. This includes thousands of workers employed at Superfund sites. WTP funds training conducted in all regions of the country through a network of non-profit organizations. These organizations 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 respond to natural and man-made disasters.

WTP: Ensuring Health at All Stages of Life for All People

Climate change affects us all at every stage of life. WTP grantees have been training workers people across the United States to help protect life and health as well as safeguard communities due to climate change impacts.

In 2022, WTP provided important strategies and approaches that will help grantees throughout the United States better prepare, handle, and clean up disasters related to climate change. For instance,

- In May, the WTP Spring Awardee Meeting and Workshop was held to share strategies regarding mitigating occupational hazards related to climate change; impart case studies and approaches; and provide information on occupational climate vulnerability assessments.
- Also in 2022, WTP updated its Climate Change Vulnerability Assessment Report that discusses how climate change vulnerabilities may affect WTP grantees and workers. The goal of the report is to help better plan for health impacts, make programmatic changes due to predicted climate changes, and identify best strategies to mitigate these hazards.



Climate Change
Vulnerability Assessment

Wildfires have ravaged many U.S. communities and over the coming century this may become worse due to climate change. To help, WTP updated their Wildfire Training Tool for grantees who deliver training on the wildland-urban interface, wildfire smoke safety, and disaster preparedness. The tool provides essential instruction on how to protect against and control hazards associated with the response, assessment, and cleanup activities associated with wildfires.

In California, WTP annually funds training for more than 6,700 workers in approximately 400 health and safety courses. These courses include preparing workers to respond to disasters and handle related hazardous materials. For example, in response to the Mendocino, Carr, and Camp wildfires, the International Brotherhood of Teamsters (IBT) trained workers in long-term cleanup operations using funding from the Disaster Relief Act of 2019.



OAI, Inc. partners with the Kentucky Division of Fire Prevention and Kentucky Emergency Management for HazMat training. Photo courtesy of OAI, Inc.

Another type of natural disaster that may be on the rise due to climate change is tornadoes. WTP grantee Opportunity, Advancement, Innovation (OAI), Inc., along with the Kentucky Division of Fire Prevention and Kentucky Emergency Management, is working to bring HazMat training to rural areas. Trainees such as first responders, law enforcement personnel, and community responders applied the training to manage the mile-wide Western Kentucky tornado that caused catastrophic damage over a hundred miles in the state in 2021.

Flooding is also exacerbated by climate change, becoming more common due to the rising number of hurricanes and other extreme weather events. In response to how these events can overwhelm urban systems' capacity for excess water, WTP developed resources on urban flooding, with training information for grantees on personal protective equipment and how to prevent hazards and harmful exposures.

WTP: Developing Targeted Training

WTP has training that focuses on specific groups or exposures, such as training for the U.S. military and reserve forces, including consortia based out of universities, community colleges, and labor unions. WTP grantee IBT delivers annual hazardous waste training to workers at Fort Liberty. Similarly, the Community Colleges Consortium for Health and Safety Training (CCCHST) provides a HazMat worker training program for military families. This WTP training helps military personnel with specific jobs that they may have on base such as ammunition cleanup, and it provides trainees skills and qualifications they need to obtain employment after the military.

WTP also provides training specifically for American Indians and Alaska Natives. Over the decades, the Alabama Fire College (AFC) Workplace Safety Program has provided safety and health training to American Indian tribes across the country. In Oregon, AFC reached many tribes through training at the Native American Fish and Wildlife Society regional conference. The Confederated Tribes of Umatilla Indian Reservation is also a key training partner, with a representative from the tribe providing guidance and feedback on the program's advisory board. Other tribes in Oregon have benefitted from WTP-funded training, such as the Coquille Indian Tribe, the Confederated Tribes of Warm Springs, the Confederated Tribes of Siletz Indians, the Nez Perce Tribe, and the Burns Paiute Tribe.

Arizona State University (ASU), part of the Western Region Universities Consortium (WRUC), funded by WTP, offered courses to Native Americans in New Mexico and Arizona, as part of a program coordinated with the U.S. Department of the Interior, Bureau of Indian Affairs (BIA), through the Navajo Region Division of Environmental and Safety Management. ASU is the only provider of Hazardous Waste Operations and Emergency Response training, as well as other key HazMat courses for BIA, in this region.

Another WRUC collaboration involves Zender Environmental Health and Research Group, which supports ECWTP recruitment, training, and employment opportunities. Zender manages the Rural Alaska Community Education Job Training (RACEJT) Program, which provides training for residents in remote Alaska Native Villages to conduct environmental remediation work in their villages. In 2022, the program had a job placement rate of 71 percent.



IBT annual hazardous waste training at Fort Liberty. Photo courtesy of IBT.



RACEJT graduates, part of the WRUC ECWTP. Photo courtesy of WRUC.

Specialized training targeting specific chemical exposures, such as PFAS, is also part of the WTP curriculum. Providing specialized training on PFAS protects workers and communities from these toxic chemicals and helps inform workers or communities when they may be at high risk of exposure. Through CCCHST, Columbus State Community College in Columbus, OH, has been conducting training on the topic of PFAS for their environmental students, water/wastewater programs, and community partners.

WTP: Inspiring the Next Generation of Workers

Through WTP grantee the New England Consortium, the Massachusetts Coalition for Occupational Health and Safety (MassCOSH) trained 21 youth leaders in the Teens Lead @ Work (TL@W). TL@W provides an empowering environment where teens serve as peer leaders and learn to identify hazards and understand their right to safety, health, and justice at school, work, and in the community. The program builds bridges among Boston teens of many different backgrounds in the fight for young worker rights. MassCOSH trained youth to be trainers and then these youth conducted training for 126 teens on topics ranging from COVID-19 health and safety to workplace bullying.

WTP: Promoting the Public Good

Training workers and providing information for the health and safety of our society is at the heart of the WTP mission. A beacon of hope and global unity, the 2022 World Games in Birmingham, Alabama, an 11-day multi-sport event, attracted over 25,000 fans and athletes from over 100 countries generating over \$250 million for the city. In a display of promoting the public good, WTP grantee AFC Workplace Safety Training program assisted local first responders with planning and coordination to keep attendees and participants safe and healthy.

Other WTP grantees also work to promote the public good, such as the International Association of Fire Fighters (IAFF), which has demonstrated a strong training relationship with HazMat technical teams at many fire departments, including Anchorage, Alaska. IAFF conducts emergency response and HazMat training in communities nationwide, including those that are rural,

Worker Training Program

Promoting Meaningful Employment and Justice40 Through the Environmental Career Worker Training Program

The WTP Environmental Career Worker Training Program (ECWTP) provides training to increase opportunities for individuals from disadvantaged and underserved communities to obtain careers in environmental cleanup, construction, hazardous waste removal, and emergency response. Since 1995, the ECWTP has provided pre-employment and health and safety training to thousands of people from underserved communities nationwide. An economic impact study showed that **an annual federal investment of \$3.5 million in the ECWTP generated a \$100 million return.** ECWTP was selected as a participant in the White House Justice40 Initiative to ensure that federal agencies deliver 40 percent of the overall benefits of climate, clean energy, affordable and sustainable housing, clean water, and other investments to disadvantaged communities. US DHHS highlighted ECWTP as one of the department's notable programs covered by Justice40.



BuildingWorks students. Photo courtesy of Atlantic Center for Occupational Health and Safety.

In Pensacola, FL, ECWTP funded Historically Black Colleges and Universities Consortium partners with Unity in the Family Ministry, whose mission is to work with underserved communities through social justice, economic development, and job training. Unity in the Family Ministry works with employers and contractors in the cleanup and restoration industry. In 2022, the program had a job placement rate of 100 percent.

Another ECWTP grantee, the Atlantic Center for Occupational Health and Safety in New York (NY) and New Jersey (NJ) partners with BuildingWorks and the NY City District Council of Carpenters to help trainees move into a unionized apprenticeship, gaining skills to build a long-term career in construction trades. A 2015-2019 study of the graduates showed that, prior to the program, the active carpenters had average annual earnings of \$11,641. After ECWTP funded training, their annual earnings are more than \$90,000, resulting in an average increase of \$80,000 for each family served.

remote, or do not have the resources found in larger urban centers. “The hands-on experience with the very knowledgeable instructors was extremely beneficial,” said a trainee. “I felt that they were able to dramatically increase our knowledge, skills, and abilities.”



IAFF provides an 80-hour HazMat technician course in Anchorage, Alaska.
Photo courtesy of IAFF.

OAI, Inc. partners with RecycleForce and Build4Success in Indianapolis, Indiana through the WTP’s Environmental Career Worker Training Program. Together, the program provides transitional jobs as well as comprehensive assistance services to help previously incarcerated citizens overcome barriers to employment and get their lives back on track. After the technical and life skills training provided through WTP funding, in 2022, 100 percent of program graduates were placed in jobs.

WTP: Tackling the Undiscovered

In worker health and safety training, the “undiscovered” can mean preparing for future unknown hazards or managing the effects of new hazards. In 2022, as part of WTP’s COVID-19 Recovery Center program, the International Chemical Workers Union Council partnered with Health Professionals and Allied Employees (HPAE) and its parent union, the American Federation of Teachers, to develop a training program. The program provided free virtual training sessions that addressed the emotional and mental strain for workers in healthcare, construction, hospitality, and other industries. The program was lauded as providing personalized and comprehensive mental health support and education to New Jersey healthcare workers and community members, helping them better cope with and recover from the traumatic situations they experienced during the pandemic.

Through the WTP Small Business Innovative Research (SBIR) program, grantee Charles River Analytics, in partnership with WTP grantee the New England Consortium, is developing a commercial, portable adaptive virtual reality (VR) technology. The VR platform will provide an immersive, virtual training experience that prepares trainees for future hazards by having them apply complex, dangerous procedures in a safe, controlled environment through guided and immersive procedure rehearsal.

Budget Policy: The FY 2024 President’s Budget request for the Worker Training Program (WTP) is \$27.3 million, a decrease of \$11,000 from the FY 2023 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 2021 on disaster response coordination for COVID-19.

Budget Policy: The FY 2024 President's Budget request for Research Management and Support is \$4.7 million, an increase of \$0.1 million or 2.3 percent compared with the FY 2023 Enacted level.

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
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	\$83,540,000	\$84,540,000	\$82,540,000
Rescission				\$0
2023	\$83,035,000	\$83,035,000	\$83,035,000	\$83,035,000
Rescission				\$0
Supplemental				\$2,500,000
2024	\$83,035,000			

¹ Budget Estimate to Congress includes mandatory financing

AUTHORIZING LEGISLATION

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2023 Amount Authorized	FY 2023 Enacted	2024 Amount Authorized	FY 2024 President's Budget
Environmental Protection Agency's Hazardous Substance Superfund	CERCLA Section 311(a)	42§9660 Section 9660(a)	Indefinite	\$83,035,000	Indefinite	\$83,035,000
Superfund	SARA Section 126(a)	Section 9660(a)	Indefinite		Indefinite	
Total, Budget Authority				\$83,035,000		\$83,035,000

AMOUNTS AVAILABLE FOR OBLIGATION

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Amounts Available for Obligation¹
(Dollars in Thousands)

Source of Funding	FY 2022 Final	FY 2023 Enacted	FY 2024 President's Budget
Appropriation	\$82,540	\$83,035	\$83,035
Secretary's Transfer	\$0	\$0	\$0
OAR HIV/AIDS Transfers	\$0	\$0	\$0
Subtotal, adjusted budget authority	\$82,540	\$83,035	\$83,035
Unobligated balance, start of year	\$0	\$0	\$0
Unobligated balance, end of year (carryover)	\$0	\$0	\$0
Subtotal, adjusted budget authority	\$82,540	\$83,035	\$83,035
Unobligated balance lapsing	\$0	\$0	\$0
Total obligations	\$82,540	\$83,035	\$83,035

¹ Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
 FY 2022 - \$10,143 FY 2023 - \$14,000 FY 2024 - \$14,000

BUDGET AUTHORITY BY OBJECT CLASS

**NATIONAL INSTITUTES OF HEALTH
Superfund**

Budget Authority by Object Class¹
(Dollars in Thousands)

	FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
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 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
Personnel Compensation			
11.1 Full-Time Permanent	\$1,154	\$1,217	\$63
11.3 Other Than Full-Time Permanent	\$258	\$272	\$14
11.5 Other Personnel Compensation	\$21	\$22	\$1
11.7 Military Personnel	\$0	\$0	\$0
11.8 Special Personnel Services Payments	\$0	\$0	\$0
11.9 Subtotal Personnel Compensation	\$1,433	\$1,512	\$78
12.1 Civilian Personnel Benefits	\$607	\$637	\$30
12.2 Military Personnel Benefits	\$0	\$0	\$0
13.0 Benefits to Former Personnel	\$0	\$0	\$0
Subtotal Pay Costs	\$2,040	\$2,149	\$109
21.0 Travel & Transportation of Persons	\$52	\$53	\$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	\$0	\$0	\$0
24.0 Printing & Reproduction	\$0	\$0	\$0
25.1 Consulting Services	\$132	\$135	\$3
25.2 Other Services	\$2,196	\$2,187	-\$9
25.3 Purchase of Goods and Services from Government Accounts	\$215	\$219	\$4
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	\$2,544	\$2,542	-\$2
26.0 Supplies & Materials	\$0	\$0	\$0
31.0 Equipment	\$4	\$4	\$0
32.0 Land and Structures	\$0	\$0	\$0
33.0 Investments & Loans	\$0	\$0	\$0
41.0 Grants, Subsidies & Contributions	\$78,395	\$78,287	-\$108
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	\$80,995	\$80,886	-\$109
Total Budget Authority by Object Class	\$83,035	\$83,035	\$0

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

NATIONAL INSTITUTES OF HEALTH

Superfund

Salaries and Expenses

(Dollars in Thousands)

Object Classes	FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
<u>Personnel Compensation</u>			
Full-Time Permanent (11.1)	\$1,154	\$1,217	\$63
Other Than Full-Time Permanent (11.3)	\$258	\$272	\$14
Other Personnel Compensation (11.5)	\$21	\$22	\$1
Military Personnel (11.7)	\$0	\$0	\$0
Special Personnel Services Payments (11.8)	\$0	\$0	\$0
Subtotal, Personnel Compensation (11.9)	\$1,433	\$1,512	\$78
Civilian Personnel Benefits (12.1)	\$607	\$637	\$30
Military Personnel Benefits (12.2)	\$0	\$0	\$0
Benefits to Former Personnel (13.0)	\$0	\$0	\$0
Subtotal Pay Costs	\$2,040	\$2,149	\$109
Travel & Transportation of Persons (21.0)	\$52	\$53	\$1
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
<u>Other Contractual Services</u>			
Consultant Services (25.1)	\$132	\$135	\$3
Other Services (25.2)	\$2,196	\$2,187	-\$9
Purchase of Goods and Services from Government Accounts (25.3)	\$215	\$219	\$4
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	\$2,544	\$2,542	-\$2
Supplies & Materials (26.0)	\$0	\$0	\$0
Subtotal Non-Pay Costs	\$2,596	\$2,596	-\$1
Total Administrative Costs	\$4,636	\$4,744	\$108

DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE)

NIH Detail of Full-Time Equivalent (FTE) Employment by IC

Institutes and Centers	FY 2022 Actual	FY 2023 Estimate	FY 2024 Estimate
NCI.....	3,182	3,320	3,468
NHLBI.....	899	966	966
NIDCR.....	239	252	252
NIDDK.....	685	706	756
NINDS.....	601	632	707
NIAID.....	2,099	2,180	2,180
NIGMS.....	185	209	219
NICHD.....	538	602	602
NEL.....	286	290	290
NIEHS.....	638	685	685
NIA.....	518	600	650
NIAMS.....	233	242	250
NIDCD.....	130	140	140
NIMH.....	579	589	597
NIDA.....	396	398	416
NIAAA.....	206	238	238
NINR.....	82	111	111
NHGRI.....	352	385	385
NIBIB.....	106	129	160
FIC.....	57	61	61
NIMHD.....	80	210	210
NCCIH.....	86	100	110
NCATS.....	262	298	298
NLM.....	654	741	741
OD.....	1,059	1,162	1,225
ARPA-H.....	---	135	152
Central Services:			
OD - CS.....	843	870	911
CC.....	1,815	2,035	2,035
CSR.....	451	464	510
CIT.....	207	247	247
ORS.....	495	539	541
ORF.....	726	830	830
Subtotal Central Services¹.....	4,537	4,985	5,074
<i>PHS Trust Fund (non-add)².....</i>	<i>4</i>	<i>4</i>	<i>4</i>
<i>CRADA (non-add)³.....</i>	<i>3</i>	<i>3</i>	<i>3</i>
Total.....	18,689	20,366	20,943

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

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.

NIH Budget Mechanism Total

(Dollars in Thousands) ^{1,2,3}	FY 2022		FY 2023		FY 2024		FY 2024	
	Final ⁹		Enacted ⁹		President's Budget ⁹		+/- FY 2023 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	29,423	\$17,056,649	30,768	\$18,487,622	32,055	\$19,393,431	1,287	\$905,808
Administrative Supplements ³	(3,151)	494,802	(3,260)	476,969	(2,879)	385,306	(-381)	-91,663
Competing	11,333	\$6,668,939	10,961	\$6,599,170	10,414	\$6,047,419	-547	-\$551,751
Subtotal, RPGs	40,756	\$24,220,390	41,729	\$25,563,761	42,469	\$25,826,156	740	\$262,395
SBIR/STTR	1,840	1,202,743	1,891	1,242,315	1,941	1,263,786	50	21,471
Research Project Grants	42,596	\$25,423,133	43,620	\$26,806,076	44,410	\$27,089,942	790	\$283,866
Research Centers:								
Specialized/Comprehensive	1,043	\$2,114,324	1,107	\$2,277,684	1,151	\$2,374,503	44	\$96,819
Clinical Research	73	441,087	58	338,841	36	258,134	-22	-80,707
Biotechnology	45	72,777	44	68,863	45	70,033	1	1,170
Comparative Medicine	47	144,037	46	140,771	45	135,706	-1	-5,065
Research Centers in Minority Institutions	22	74,230	25	83,204	25	83,204	0	0
Research Centers	1,230	\$2,846,455	1,280	\$2,909,362	1,302	\$2,921,580	22	\$12,218
Other Research:								
Research Careers	4,966	\$930,003	5,142	\$961,412	5,173	\$976,015	31	\$14,603
Cancer Education	75	20,668	76	21,508	74	21,078	-2	-430
Cooperative Clinical Research	261	473,265	297	504,493	346	644,352	49	139,859
Biomedical Research Support	158	104,783	149	103,257	149	93,549	0	-9,708
Minority Biomedical Research Support	228	77,191	158	57,578	88	35,948	-70	-21,630
Other	2,394	1,504,305	2,562	1,650,379	2,627	1,718,202	65	67,823
Other Research	8,082	\$3,110,215	8,384	\$3,298,628	8,457	\$3,489,145	73	\$190,517
Total Research Grants	51,908	\$31,379,803	53,284	\$33,014,066	54,169	\$33,500,667	885	\$486,601
Ruth L. Kirchstein Training Awards:								
Individual Awards	4,107	\$196,143	4,233	\$206,087	4,226	\$210,006	-7	\$3,919
Institutional Awards	13,298	770,860	14,092	827,886	13,922	840,638	-170	12,753
Total Research Training	17,405	\$967,003	18,325	\$1,033,972	18,148	\$1,050,644	-177	\$16,672
Research & Develop. Contracts								
(SBIR/STTR) (non-add) ³	2,736	\$3,681,591	2,725	\$3,828,668	2,752	\$3,946,840	27	\$118,172
	(100)	(84,165)	(109)	(96,991)	(113)	(95,203)	(4)	(-1,788)
Intramural Research								
Res. Management & Support		\$4,828,314		\$5,012,040		\$5,056,584		\$44,544
Res. Management & Support (SBIR Admin) (non-add) ³		2,160,226		2,304,890		2,491,369		186,479
		(9,188)		(11,133)		(13,051)		(1,919)
Office of the Director - Appropriation^{3,4}								
Office of the Director - Other		(2,772,998)		(3,066,208)		(3,133,379)		(67,171)
ORIP (non-add) ^{3,4}		1,798,512		2,021,814		2,088,985		67,171
Common Fund (non-add) ^{3,4}		(304,485)		(309,393)		(309,393)		(0)
		(670,001)		(735,001)		(735,001)		(0)
ARPA-H								
		1,000,000		1,500,000		2,500,000		1,000,000
Buildings and Facilities⁵								
Appropriation ³		280,000		380,000		380,000		0
		(250,000)		(350,000)		(350,000)		(0)
Type 1 Diabetes^{6,7}								
Program Evaluation Financing ⁶		-141,450		-141,450		-250,000		-108,550
		-1,309,313		-1,412,482		-1,948,109		-535,627
Subtotal, Labor/HHS Budget Authority		\$44,644,687		\$47,541,518		\$48,816,980		\$1,275,462
Interior Appropriation for Superfund Research			82,540		83,035		83,035	0
Total, NIH Discretionary Budget Authority		\$44,727,227		\$47,624,553		\$48,900,015		\$1,275,462
Type 1 Diabetes ⁷			141,450		141,450		250,000	108,550
Total, NIH Budget Authority		\$44,868,677		\$47,766,003		\$49,150,015		\$1,384,012
Program Evaluation Financing			1,309,313		1,412,482		1,948,109	535,627
Total, Program Level		\$46,177,990		\$49,178,485		\$51,098,124		\$1,919,639
Pandemic Preparedness Mandatory via PHSSEF (non-add) ⁸			(0)		(0)		(2,690,000)	(2,690,000)

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, Maryland.
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 Amounts in FY 2022 and FY 2023 reflect a reduction of \$8.550 million for Budget Control Act sequestration.
8 The FY 2024 budget also provides \$20 billion in mandatory funding across HHS for pandemic preparedness, which is reflected in the Public Health and Social Services Emergency Fund chapter. Of this total, NIH will receive \$2,690 million.
9 Reduced by a transfer of \$5.0 million from OD to the HHS Office of Inspector General.

NIH Budget Request by IC

(Dollars in Thousands) ¹	FY 2022 Final ^{5,6}	FY 2023 Enacted ^{5,6}	FY 2024 President's Budget ⁶
NCI.....	\$6,909,626	\$7,317,241	\$7,820,159
NHLBI.....	\$3,810,371	\$3,985,158	\$3,985,158
NIDCR.....	\$501,207	\$520,138	\$520,138
NIDDK ²	\$2,347,681	\$2,444,548	\$2,553,098
NINDS.....	\$2,607,190	\$2,809,418	\$2,825,418
NIAID.....	\$6,322,180	\$6,561,652	\$6,561,652
NIGMS ³	\$3,092,373	\$3,239,679	\$3,239,679
NICHD.....	\$1,681,231	\$1,747,784	\$1,747,784
NEL.....	\$863,752	\$896,136	\$896,136
NIEHS ⁴	\$924,702	\$996,842	\$1,021,842
NIA.....	\$4,222,634	\$4,412,090	\$4,412,090
NIAMS.....	\$657,873	\$687,639	\$687,639
NIDCD.....	\$514,882	\$534,330	\$534,330
NIMH.....	\$2,220,670	\$2,341,653	\$2,541,653
NIDA.....	\$1,596,123	\$1,663,365	\$1,663,365
NIAAA.....	\$574,910	\$596,616	\$596,616
NINR.....	\$180,841	\$197,671	\$197,671
NHGRI.....	\$636,479	\$660,510	\$660,510
NIBIB.....	\$424,588	\$440,625	\$440,625
NIMHD.....	\$459,777	\$525,138	\$525,138
NCCIH.....	\$159,282	\$170,277	\$170,277
NCATS.....	\$882,265	\$923,323	\$923,323
FIC.....	\$86,849	\$95,130	\$95,130
NLM.....	\$477,506	\$495,314	\$495,314
OD.....	\$2,772,998	\$3,066,208	\$3,133,379
ARPA-H.....	\$1,000,000	\$1,500,000	\$2,500,000
B&F.....	\$250,000	\$350,000	\$350,000
Total, NIH Program Level.....	\$46,177,990	\$49,178,485	\$51,098,124
Special Type 1 Diabetes Research (mandatory).....	-\$141,450	-\$141,450	-\$250,000
PHS Program Evaluation.....	-\$1,309,313	-\$1,412,482	-\$1,948,109
Interior Appropriation (Superfund Research).....	-\$82,540	-\$83,035	-\$83,035
Total, NIH Labor/HHS Budget Authority.....	\$44,644,687	\$47,541,518	\$48,816,980
<i>Pandemic preparedness (mandatory) (non-add).....</i>	---	---	\$2,690,000

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 Includes Interior appropriation for Superfund Research activities as shown later in the table.

⁵ Amounts reflect HIV/AIDS transfers across ICs under the authority of the Office of AIDS Research.

⁶ Reflects directive transfer of \$5.0 million from OD to the HHS Office of Inspector General.