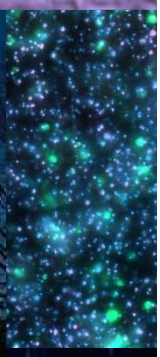

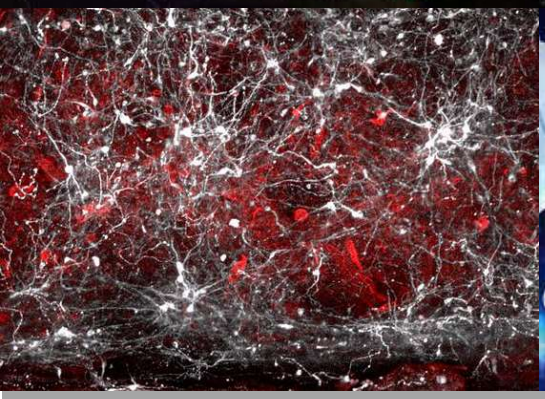

National Center for Advancing Translational Sciences

CONGRESSIONAL JUSTIFICATION
FY 2024

Department of Health and Human Services
National Institutes of Health

NIH National Center for Advancing Translational Sciences

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Center for Advancing Translational Sciences (NCATS)

FY 2024 Budget Table of Contents

General Notes

1. Detail in this document may not sum to the subtotals and totals due to rounding.

Cover photo description/credits- Clockwise from top left

a) Robot sampling the NCATS Tox21 compound collection. Samples reformatted by NCATS Compound Management staff can be used in a variety of tests, from single test tubes to 1536-well plates. Credit: NCATS. b) Individually-barcoded samples in the Tox21 compound collection. Sample retrieval and management are automated inside a ⁻20°C system. Credit: NCATS. c) National COVID Cohort Collaborative (N3C) illustration representing its national reach and impact. Credit: NCATS. d) Brain Chip-Vasculature cells and dopamine-producing neurons of the human brain, both generated from a patient's stem cells in the Brain-Chip for research on Parkinson's disease. The Brain-Chip was developed at Cedars-Sinai in collaboration with Emulate, Inc. Credit: Cedars-Sinai Photo/Samuel Sances. e) Human Stem Cells: Co-culture of human macrophages with human mesenchymal stem cells in a three-dimensional hydrogel scaffold. Credit: Stanford University Photo/Monica Lopez and Stuart Goodman. f) In recognition of Rare Disease Day at NIH, NIH lights up Building 1 on the Bethesda campus in Rare Disease Day colors. Credit: NCATS.

Director's Overview


Joni L. Rutter, Ph.D.
Director, NCATS

Helping patients and families affected by diseases, especially rare diseases about which we know little, takes a diverse set of research approaches. At the National Center for Advancing Translational Sciences (NCATS), we aim to break the mold of "science as usual." We find and overcome scientific and operational roadblocks that slow down how research discoveries move through preclinical and clinical research channels to become treatments and cures.

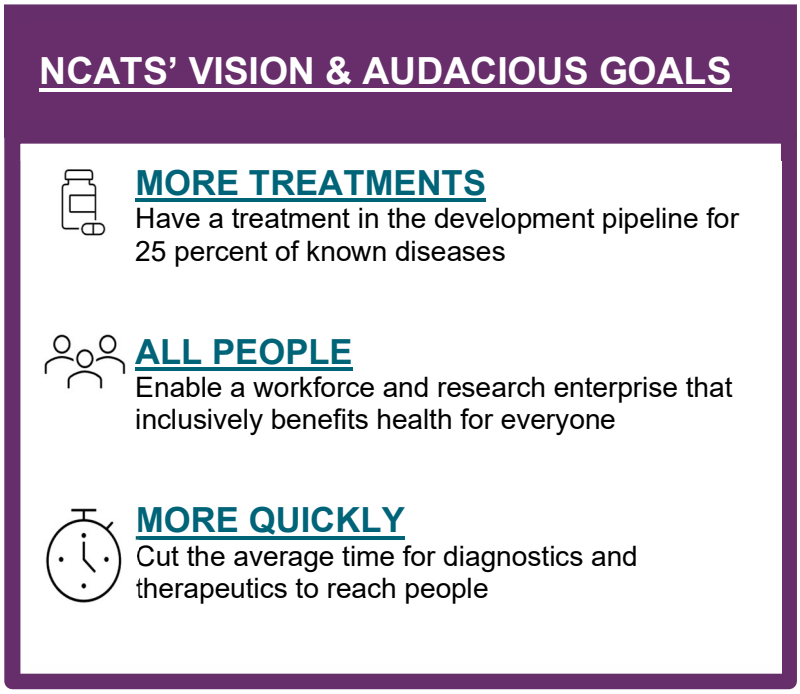
NCATS plays a key role in the biomedical research ecosystem by pursuing innovations in the preclinical and clinical spaces, proactively collaborating with academic and industry partners, and building research capacities and platform technologies, particularly those that can address emerging health needs. Indeed, NCATS pivoted its resources quickly at the onset of the COVID-19 pandemic. NCATS applied several innovative approaches to the novel challenges posed by the emergence of SARS-CoV-2, the virus causing COVID-19. NCATS' laboratories harnessed and enhanced their compound testing and informatics expertise to create an open, freely available COVID-19/SARS-CoV-2 data portal to publicly share results of potential COVID-19 treatments we tested, those contributed from the broader scientific community, and those published in research literature. NCATS' Clinical and Translational Science Awards (CTSA) infrastructure supported decisional clinical trials of the NIH's Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) initiative as well as activities of the NIH Community Engagement Alliance Against COVID-19 Disparities (CEAL) program. Importantly, we have worked across the biomedical ecosystem and harmonized data to address the lack of interoperability and lead real-world data collection through electronic health records (EHR)-derived data in NCATS' National COVID Cohort Collaborative (N3C). This project has received high levels of interest from COVID-19 leadership, including from the White House COVID-19 Response Coordinator Team to use N3C to understand the effects of Paxlovid on the highly infectious Omicron strains of SARS-CoV-2. As one of the largest databases of EHR-derived-data in the United States, N3C is being used to answer a variety of research questions about COVID-19, including the long-lasting effects of COVID-19, often referred to as "long COVID." A recent publication using N3C identified four groups of long COVID patients, characterized by clusters of symptoms. This work will help in designing interventional studies and testing treatments.[1]

We have been able to take on these high-impact projects thanks to strategic investment of NCATS resources. The NCATS budget is structured with seventy percent of NCATS appropriations designated for CTSA support, while 30 percent of the budget is available for rare diseases research and translational science innovation. NCATS will strive to improve health for all people, particularly those affected by rare diseases.

[1] pubmed.ncbi.nlm.nih.gov/35589549/

A Commitment to Patients and Families affected by Rare Diseases

Rare diseases are not rare. One in ten individuals are affected by a rare disease, and it is imperative to invest in research that can alleviate the suffering of 30 million U.S. rare disease patients and address the resultant national economic burden of nearly $1 trillion per year.[2] NCATS provides substantive leadership in rare diseases research and makes critical contributions to innovations that support how NIH engages with patients, caretakers, researchers, and clinicians. NCATS leads rare diseases meetings and programs for NIH such as the annual Rare Diseases at NIH Day, the Rare Diseases Clinical Research Network (RDCRN), and the Genetics and Rare Diseases (GARD) Information Center, which has over a million unique users of rare diseases information each month. In addition, with over 10,000 rare diseases, many of which have a known molecular basis, a single-disease research approach will delay the therapies and cures that Americans expect from their investment in biomedical research. NCATS also focuses on innovative, high-impact projects addressing many diseases at a time; for example, testing one standard approach to gene therapy that can be applied to the treatment of multiple diseases. Other platform approaches encompass the use of big data and analytics, real-world evidence, and the re-engineering of how pre-clinical and clinical research is conducted.



NCATS' Vision and Three Audacious Goals

As described here and in the pages that follow, NCATS has demonstrated its ability to address emerging public health needs by employing collaborative, team-based science approaches to advance scientific innovations. Over the next decade, NCATS seeks to further extend that impact by pursuing three audacious goals encompassed by the phrase "more treatments, for all people, more quickly."

NCATS' "**more treatments**" goal addresses the issue that only 5 percent of the over 10,000 known diseases has a therapy. Our goal is, within the next decade, to have a treatment in the research pipeline for 25 percent of diseases known today. We can get there by driving toward more predictive tools for drug development. For example, in addition to our Tissue Chips in Space program, NCATS has tackled undiscovered frontiers of science on earth where human cells and 3-D bioprinting models combine to improve our ability to predict the safety and

[2] ojrd.biomedcentral.com/articles/10.1186/s13023-021-02061-3

efficacy of candidate drug compounds even before first-in-human studies. The Clinical Trials on Chip programs could shorten the initial regulatory phase of clinical trials and help scientists and clinicians determine who is more likely to respond positively to therapies.

NCATS' "**all people**" goal reflects a commitment to research that inclusively benefits health for everyone. This is evident through many of its existing programs, such as N3C, where COVID-19 clinical data contributed by CTSA institutions is collected and harmonized to create a near-real-time research resource demographically inclusive of people receiving clinical care at every stage of life across the United States. Two of the earliest publications using N3C data embody this "all people" approach, reporting on the effects of COVID-19 on children, and examining COVID-19 in rural populations.[3,4]

NCATS also places significant emphasis on engaging underserved communities in clinical research and being respectful of all cultures. For example, NCATS has engaged tribal leaders in consultation for whether and how to use American Indian/Alaska Native data in the N3C to examine COVID-19. Through its CTSA program, NCATS supports Recruitment Innovation Centers and each CTSA institution is committed to patient and community engagement and outreach, to effectively and expeditiously enroll underserved participants in clinical research studies.

Diversity of the research workforce also matters — not just because it fosters innovations that can improve health, but also because it creates mutual respect and a culture of belonging. Recent examples of this at NCATS include creating more on-ramps into the workforce for underrepresented groups by joining the long-standing NIH Science Education Partnership Award program, and welcoming interns in the inaugural Gaining Research Equity and Advancement in Translational Sciences program. Our CTSA program is equally committed to enhancing the biomedical research workforce through our diversity, re-entry, and reintegration research supplement awards as well as establishing a vision and strategic plan through a new CTSA program enterprise committee.

NCATS' "**more quickly"** goal is to cut the average time for novel therapeutics development in half. Several initiatives and research programs at NCATS are poised to achieve this goal. For instance, certain rare diseases caused by genetic mutations may benefit from gene-directed therapies. With a one-time appropriations increase in FY 2019, NCATS was able to launch the Platform Vector Gene Therapy (PaVe-GT) program to investigate if an increasingly common gene therapy platform technology, adeno-associated virus (AAV) gene therapy, could be used to treat four different rare genetic diseases, thus streamlining therapeutic manufacturing and delivery, and clinical trial efficacy. NCATS' work in this space was recognized by NIH leadership, leading to a new NIH Accelerating Medicines Partnership® (AMP), the Bespoke Gene Therapy Consortium, for which NCATS plays an important role along with Food and Drug Administration (FDA) and partnering NIH institutes and centers (ICs). In 2022, a gene therapy for the rare pediatric condition aromatic L-amino acid decarboxylase (AADC) deficiency, one of the first gene therapy candidates developed with contributions from NCATS scientists and staff through the Therapeutics for Rare and Neglected Diseases (TRND) program, received approval

[3] pubmed.ncbi.nlm.nih.gov/35133437/
[4] ncats.nih.gov/pubs/features/n3c-data-reveal-more-severe-covid-19-outcomes-in-rural-communities

from the European Commission. This highlights the promise for other gene targeted therapy successes.

NCATS has many potential programs that promise to expedite therapeutics development. One such program concept is building upon the foundational work done by the now-sunsetted NIH Illuminating the Druggable Genome Common Fund program, to expand into pre-clinical therapeutics of promising targets. NCATS' first request for applications to perform research on under-studied proteins associated with rare diseases[5] received unprecedented interest by the scientific community.

Challenges and Opportunities

NCATS is encouraged by its stakeholders to expand groundbreaking research that is not pursued elsewhere in our national biomedical research enterprise. NCATS strives to capitalize on new scientific opportunities for accelerating cures, translational science research, and rare disease innovation within its available funding. Seventy percent of the NCATS budget is mandated toward awards for CTSA institutions. We are proud of the many contributions the CTSA program has made to advancing health in America, and we also know we can further leverage that investment by supporting more first-time researchers and trainees through entry points into the rare diseases innovation and translational science space, and by expanding real-world data programs like the N3C into other disease research areas, such as the study of rare diseases. NCATS is an established leader in innovation across NIH and within the biomedical ecosystem, and sustained support will result in a return on the research investment that so many Americans, especially the 30 million people affected by rare diseases, deserve.

[5] grants.nih.gov/grants/guide/rfa-files/RFA-TR-22-030.html

National Center for Advancing Translational Sciences

More Treatments for All People More Quickly

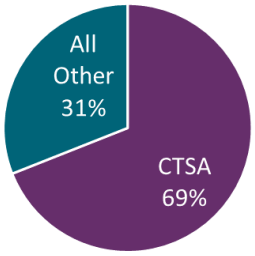
NCATS' Approach

NIH's National Center for Advancing Translational Sciences (NCATS) works with patient organizations, researchers and clinicians to focus on what's common across diseases. Together, we develop tools, technologies and approaches that overcome roadblocks slowing medical progress — from high failure rates in the therapy development pipeline to inequities in clinical outcomes. We support a range of initiatives to achieve a future that offers ***more treatments for all people more quickly.***

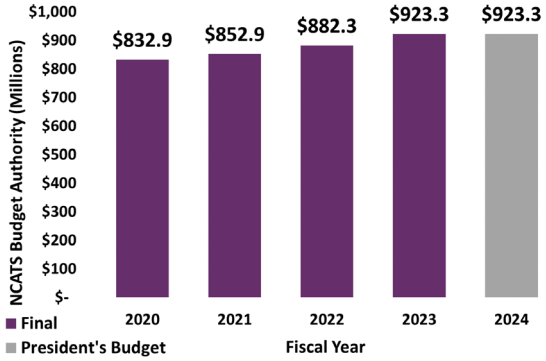
NCATS by the Numbers

- **>60 medical research institutions** in NCATS' Clinical and Translational Science Awards (CTSA) program network
- **243 intramural collaborations** active across all sectors
- **356 patents** issued to NCATS since 2010, including **88** U.S. and **268** foreign patents
- **48 approved Investigational New Drug (IND) applications** built on a decade of NCATS' advances

Funding History



NCATS Appropriations



*Of the more than **10,000 known rare diseases,** only about 500 have treatments. That means that millions of people with illnesses or diseases are waiting for safe and effective treatments. The therapeutic challenge is particularly great for the **30 million people** living with a rare disease, for whom a lack of treatments and diagnostic tools leads to annual direct medical costs of **$400 billion** in the United States. To overcome these formidable challenges, NCATS is speeding the translation of scientific discoveries into health solutions.*

More Treatments

- Advanced tools, such as 3-D tissue bioprinting and tissue chips, are designed to better predict efficacy, improve drug development success rates and lower the number of costly therapies.
- The Platform Vector Gene Therapy (PaVe-GT) program and the Bespoke Gene Therapy Consortium (BGTC) will lead to many more gene therapies for rare diseases.
- Such initiatives as the Rare Diseases Clinical Research Network (RDCRN) and the Biomedical Data Translator seek solutions that can be applied across conditions and diseases.

All People

- NCATS programs and initiatives tackle health disparities and build organizational cultures that support diversity, equity, inclusion and accessibility.
- NCATS' CTSA Program institutions are leading the way with strategies that increase participation among underrepresented groups in clinical research and the workforce.

More Quickly

- The National COVID Cohort Collaborative (N3C) harnesses real-world data to quickly explore and test critical clinical research questions as the pandemic evolves.
- The Streamlined, Multisite, Accelerated Resources for Trials (SMART) Institutional Review Board (IRB) Platform and the Trial Innovation Network (TIN) overcome time-consuming and failure-causing roadblocks in clinical trials.

Rare Diseases Research Innovation

NCATS is the heart of rare diseases research at NIH. We support programs that find solutions for rare diseases, including:

- The RDCRN of physicians, scientists and patient advocacy groups, which is delivering insights into more than 200 rare diseases. The network plays a pivotal role in developing therapies, including a U.S. Food and Drug Administration–approved drug to treat acute intermittent porphyria.
- The Impact of Rare Diseases on Patients and Healthcare Systems (IDeaS) pilot study, which mapped the lengthy and arduous diagnostic odyssey many people with rare diseases face. The study revealed that the annual direct medical costs for people in the United States with rare diseases are $400 billion.
- The PaVe-GT program, which uses the same gene therapy delivery system and manufacturing methods in multiple gene therapy trials. The trials are targeting rare liver and neuromuscular conditions.

Audacious Goals

As NCATS advances into its second decade, we have set audacious goals for the next 10 years:

More treatments
Have a treatment in the pipeline for 25% of known diseases.

For all people
Enable a workforce and research enterprise that inclusively benefits health for everyone

More quickly
Cut the average time for diagnostics and therapeutics to reach people

COVID-19

We are developing and supporting initiatives to meet the urgent public health demands of the COVID-19 pandemic rapidly and flexibly, including:

- The N3C, a nationwide electronic health records data platform. N3C has revealed critical insights into long COVID, breakthrough infections, and how COVID-19 risks vary across ages, races, chronic conditions and treatment regimens.
- Clinical trials conducted through NCATS' CTSA Program network. The trials tested convalescent plasma, immune modulators for hospitalized patients, and repurposed drugs for mild-to-moderate COVID-19.
- The OpenData Portal (ODP), which shares COVID-19-related drug effectiveness data and at-a-glance summaries of how individual SARS-CoV-2 variants may respond to known treatments.

Diversity, Equity, Inclusion and Access to Research

We are committed to greater inclusion in our research and workforce to improve the health of all communities through the following initiatives:

- The CTSA TIN, which develops innovative approaches to boost diversity in clinical trials. The TIN's Recruitment Innovation Center (RIC) brings diverse groups of collaborators into the planning and implementation of clinical research.
- The expansion of research tools, such as tissue chips for drug screening and data sets to include underserved populations, in the drug discovery process.
- The NCATS Gaining Research Equity and Advancement in Translational Sciences (G.R.E.A.T.S) Program, which supports the career development of a diverse group of undergraduate and graduate students.

Major Changes in the Budget Request

The budget request for NCATS of $923.3 million is equal to the FY 2023 Enacted level. NCATS will support priority research programs. NCATS will pay non-competing grant awards at their committed levels and fund high priority new awards.

Research Project Grants (+$70.0 million; total $248.0 million):
Beginning in FY 2023 the primary funding mechanism for the Clinical and Translational Science Awards (CTSA) Program will transition from Clinical Research Centers to Research Project Grants. NCATS will ensure that recipients of CTSA institutional awards will receive no less than 95% of the core resources received in their prior award.

Research Centers (-$70.0 million; total $263.5 million):
Beginning in FY 2023 the primary funding mechanism for the Clinical and Translational Science Awards (CTSA) Program will transition from Clinical Research Centers to Research Project Grants. NCATS will ensure that recipients of CTSA institutional awards will receive no less than 95% of the core resources received in their prior award.

NATIONAL INSTITUTES OF HEALTH

National Center for Advancing Translational Sciences

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	44	$31,279	66	$35,524	73	$141,903	7	$106,379
Administrative Supplements	*(5)*	$1,711	*(3)*	$907	*(3)*	$350	*(0)*	-$557
Competing:								
Renewal	0	$0	0	$0	0	$0	0	$0
New	37	$14,117	62	$119,818	64	$81,996	2	-$37,822
Supplements	0	$0	0	$0	0	$0	0	$0
Subtotal, Competing	**37**	**$14,117**	**62**	**$119,818**	**64**	**$81,996**	**2**	**-$37,822**
Subtotal, RPGs	81	$47,107	128	$156,248	137	$224,250	9	$68,001
SBIR/STTR	41	$24,457	30	$21,763	39	$23,763	9	$2,000
Research Project Grants	122	$71,564	158	$178,011	176	$248,013	18	$70,001
Research Centers								
Specialized/Comprehensive	0	$10,739	0	$10,291	0	$5,456	0	-$4,835
Clinical Research	63	$427,298	47	$323,171	36	$258,020	-11	-$65,151
Biotechnology	0	$0	0	$0	0	$0	0	$0
Comparative Medicine	0	$0	0	$0	0	$0	0	$0
Research Centers in Minority Institutions	0	$0	0	$0	0	$0	0	$0
Research Centers	**63**	**$438,037**	**47**	**$333,462**	**36**	**$263,475**	**-11**	**-$69,986**
Other Research:								
Research Careers	63	$57,987	59	$63,916	59	$65,200	0	$1,284
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	31	$33,672	44	$40,474	43	$40,731	-1	$258
Other Research	**94**	**$91,660**	**103**	**$104,390**	**102**	**$105,932**	**-1**	**$1,542**
Total Research Grants	279	$601,261	308	$615,863	314	$617,420	6	$1,556
Ruth L Kirschstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	0	$0	0	$0	0	$0	0	$0
Institutional Awards	488	$26,509	488	$30,309	488	$30,733	0	$424
Total Research Training	**488**	**$26,509**	**488**	**$30,309**	**488**	**$30,733**	**0**	**$424**
Research & Develop. Contracts	112	$84,666	120	$99,485	118	$95,704	-2	-$3,781
SBIR/STTR (non-add)	*(4)*	*($916)*	*(6)*	*($4,920)*	*(5)*	*($2,920)*	*-(1)*	*-($2,000)*
Intramural Research	88	$106,200	107	$109,831	107	$109,831	0	$0
Res. Management & Support	174	$63,630	191	$67,835	191	$69,635	0	$1,800
SBIR Admin. (non-add)		*($430)*		*($435)*		*($435)*		*($0)*
Construction		$0		$0		$0		$0
Buildings and Facilities		$0		$0		$0		$0
Total, NCATS	**262**	**$882,265**	**298**	**$923,323**	**298**	**$923,323**	**0**	**$0**

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

NATIONAL INSTITUTES OF HEALTH

NATIONAL CENTER FOR ADVANCING TRANSLATIONAL SCIENCES

For carrying out section 301 and title IV of the PHS Act with respect to translational sciences, $923,323,000: *Provided,* That up to $70,000,000 shall be available to implement section 480 of the PHS Act, relating to the Cures Acceleration Network: *Provided further,* That at least $629,560,000 is provided to the Clinical and Translational Sciences Awards program.

NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences

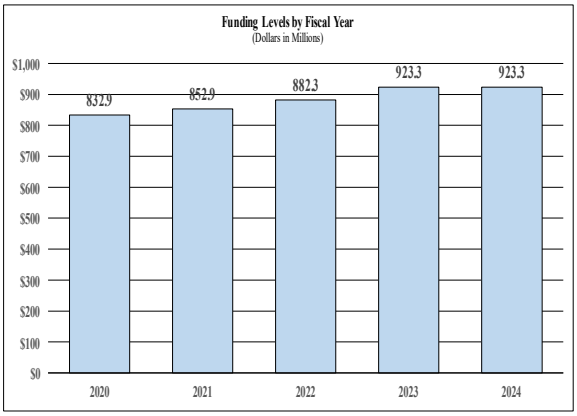
Summary of Changes
(Dollars in Thousands)

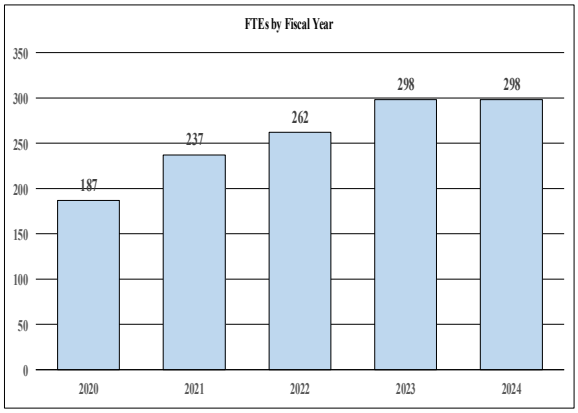
FY 2023 Enacted	$923,323
FY 2024 President's Budget	$923,323
Net change	$0

CHANGES	FY 2023 Enacted FTEs	FY 2023 Enacted Budget Authority	FY 2024 President's Budget FTEs	FY 2024 President's Budget Budget Authority	Built-In Change from FY 2023 Enacted FTEs	Built-In Change from FY 2023 Enacted Budget Authority
A. Built-in:						
1. Intramural Research:						
a. Annualization of FY 2023 pay and benefits increase		$24,575		$25,889		$273
b. FY 2024 pay and benefits increase		$24,575		$25,889		$942
c. Paid days adjustment		$24,575		$25,889		$95
d. Differences attributable to change in FTE		$24,575		$25,889		$0
e. Payment for centrally furnished services		$3,094		$3,144		$50
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		$82,162		$80,799		$1,860
Subtotal						$3,219
2. Research Management and Support:						
a. Annualization of FY 2023 pay and benefits increase		$35,201		$37,081		$390
b. FY 2024 pay and benefits increase		$35,201		$37,081		$1,348
c. Paid days adjustment		$35,201		$37,081		$136
d. Differences attributable to change in FTE		$35,201		$37,081		$0
e. Payment for centrally furnished services		$0		$0		$0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		$32,634		$32,554		$702
Subtotal						$2,575
Subtotal, Built-in						$5,794

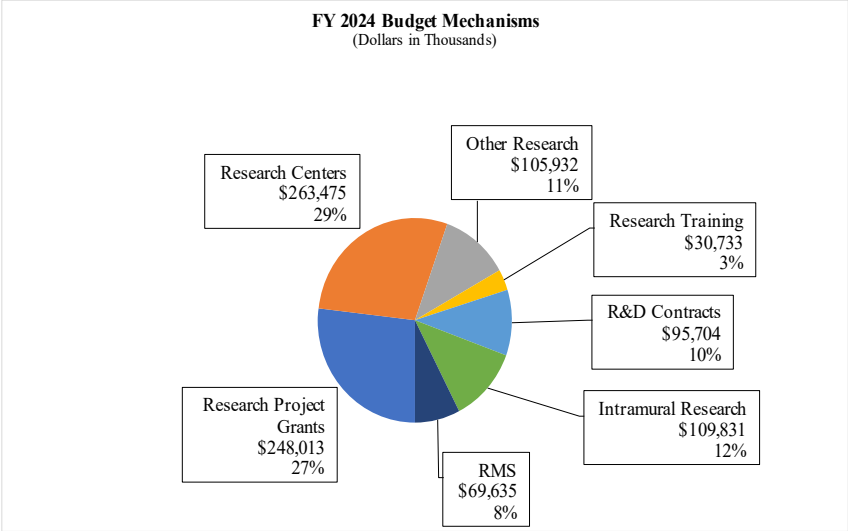
CHANGES	FY 2023 Enacted No.	FY 2023 Enacted Amount	FY 2024 President's Budget No.	FY 2024 President's Budget Amount	Program Change from FY 2023 Enacted No.	Program Change from FY 2023 Enacted Amount
B. Program:						
1. Research Project Grants:						
a. Noncompeting	66	$36,430	73	$142,253	7	$105,823
b. Competing	62	$119,818	64	$81,996	2	-$37,822
c. SBIR/STTR	30	$21,763	39	$23,763	9	$2,000
Subtotal, RPGs	158	$178,011	176	$248,013	18	$70,001
2. Research Centers	47	$333,462	36	$263,475	-11	-$69,986
3. Other Research	103	$104,390	102	$105,932	-1	$1,542
4. Research Training	488	$30,309	488	$30,733	0	$424
5. Research and development contracts	120	$99,485	118	$95,704	-2	-$3,781
Subtotal, Extramural		$745,657		$743,857		-$1,800
6. Intramural Research	107	$109,831	107	$109,831	0	-$3,219
7. Research Management and Support	191	$67,835	191	$69,635	0	-$775
8. Construction		$0		$0		$0
9. Buildings and Facilities		$0		$0		$0
Subtotal, Program	298	$923,323	298	$923,323	0	-$5,794
Total built-in and program changes						$0

History of Budget Authority and FTEs:

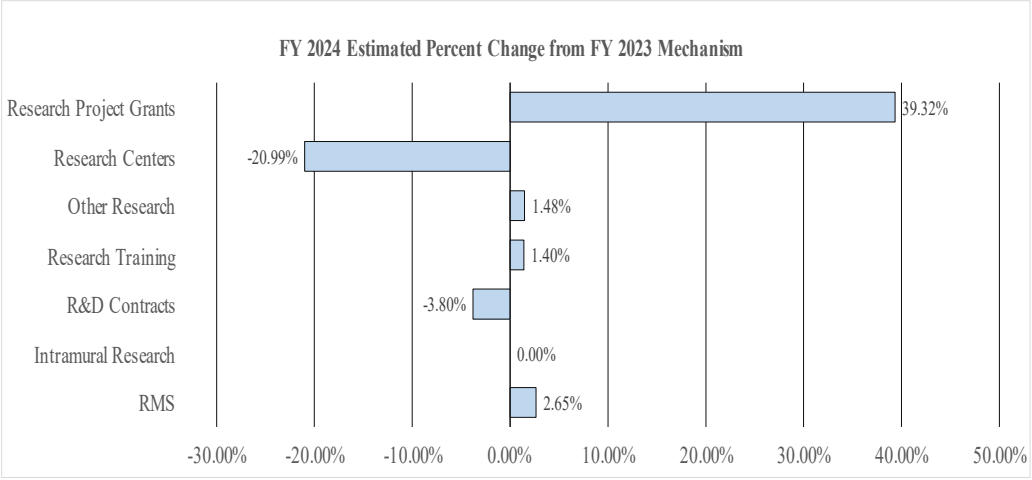




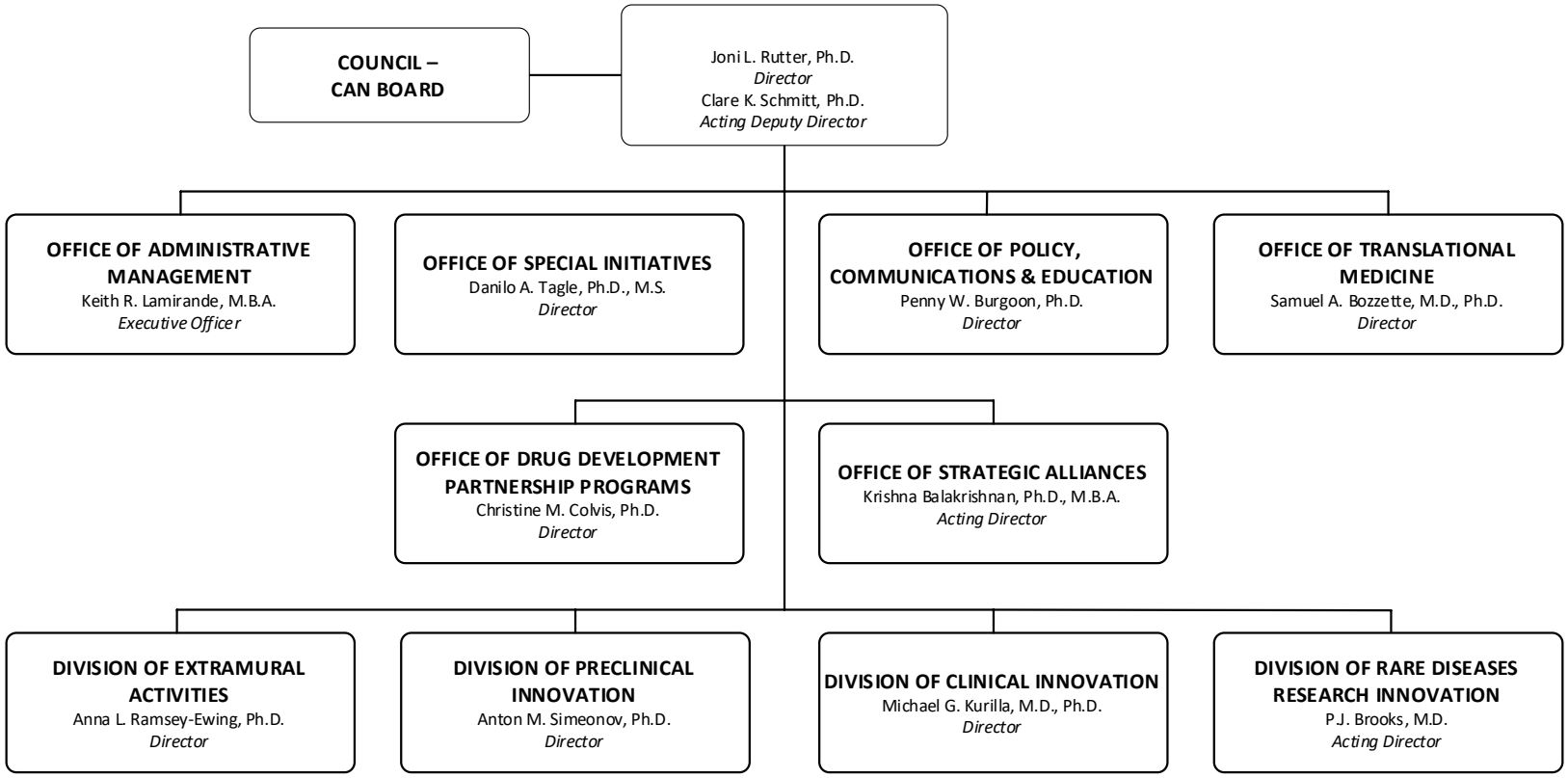
Distribution by Mechanism:



Changes by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences



NATIONAL INSTITUTES OF HEALTH

National Center for Advancing Translational Sciences

Budget Authority by Activity[1,2,3]
(Dollars in Thousands)

Budget Activity	FY 2022 Final		FY 2023 Enacted		FY 2024 President's Budget		FY 2024 +/- FY 2023 Enacted	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Clinical and Translational Science Activities		$606,653		$629,560		$629,560		$0
Reengineering Translational Sciences		$165,830		$171,988		$171,988		$0
Cures Acceleration Network		$56,000		$66,000		$66,000		$0
Rare Diseases Research and Therapeutics		$53,782		$55,775		$55,775		$0
TOTAL	**262**	**$882,265**	**298**	**$923,323**	**298**	**$923,323**	**0**	**$0**

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

[2] Amounts for each budget activity combine funding for extramural research, intramural research, and research managament and support components of the activity

[3] NCATS funds rare diseases research in all four of its budget activities. Rare Diseases Research and Therapeutics is for those programs solely dedicated to rare diseases research.

NCATS

Authorizing Legislation: Section 301 and Title IV of the Public Health Service Act, as amended, and Section 480 of the PHS Act, relating to the Cures Acceleration Network.

Budget Authority (BA):

	FY 2022 Final	FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
BA	$882,265,000	$923,323,000	$923,323,000	$0
FTE	262	298	298	0

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

Overall Budget Policy: The FY 2024 President's Budget request is $923.3 million, equal to the FY 2023 Enacted level.

Program Descriptions and Accomplishments

Since its establishment in 2012, NCATS has paved the way for expediting cures and treatments for all people through cutting-edge research aimed to transform the path from scientific discovery to real-world applications that improve people's health. NCATS pursues disease-universal approaches applicable and complementary to all of the research that the National Institutes of Health (NIH) supports across its institutes, centers, and offices (ICOs). NCATS also readily engages in cross-sector team science with academic researchers, industry innovators, other federal government science and health organizations, and patients in need of help.

I. Scientific and Operational Innovations to Accelerate the Translation of Clinical Research

Supporting a Broad Spectrum of Clinical and Translational Science Across the Nation
NCATS' flagship **Clinical and Translational Science Awards (CTSA) program** is a collaborative consortium working locally, regionally, and nationally to speed the translation of clinical research discoveries into health benefits to serve all people. A nationwide network of over 60 biomedical research institutions, serving as program hubs and forming the backbone of the program, address important roadblocks in clinical translational science. Career development and training components of the CTSA program enhance institutional activities by cultivating and sustaining future leaders of the biomedical research workforce. The impact of the CTSA program in fostering the development and inspiration of the next generation of scientists is substantial: in addition to supporting more than 500 predoctoral and postdoctoral fellows a year, the CTSA awards support more than 350 senior postdoctoral fellows and junior faculty scholars

a year and offer protected time for career development in clinical translational team science research.

Fostering CTSA Consortium-Wide Activities

Collaborative activities across CTSA awardee institutions yield impacts across research studies that take place at these institutions, such as streamlined research practices, access to resources and expertise, and application of scientific problem-solving to long-standing issues that slow down all phases of research and public health implementation. Collaborations extend to institutions in rural areas to address health inequities. Notable CTSA achievements of such team-based science advances include:

- Innovating Clinical Research through the Trial Innovation Network (TIN): The TIN supports community engagement efforts by developing and applying key principles to engaging patients and communities in every phase of research. The TIN provides resources from CTSA institutions and community health partners to conduct engagement, recruitment, and retention activities for clinical trials and multi-site studies.
- Streamlined, Multisite, Accelerated Resources for Trials (SMART) IRB Platform: The SMART Institutional Review Board (IRB) provides a master IRB reliance agreement, enabling multisite studies to begin within weeks instead of months, while ensuring appropriate oversight and protections for research participants. It also provides tools to help IRBs perform ethical reviews. The SMART IRB agreement has recently achieved 1,000 signatories, making it one of the largest IRB reliance agreements in the United States.

NCATS will continue CTSA consortium activities through the following award types:

- CTSA Consortium-Wide Centers: Resources for Rapid Demonstration and Dissemination (C3-R2D2): These centers focus on broadly increasing the demonstration and dissemination of translational science resources in areas that have been tested and validated at one or more hubs. Activities at these centers will help catalyze the sharing, adoption, and expansion of innovations across CTSA institutions and beyond.
- CTSA Collaborative Innovative Acceleration (CCIA) Awards: These multi-site awards support synergistic activities to accelerate the development, demonstration, and dissemination of innovative solutions to known research inefficiencies.

Engaging in Public Health Readiness and Responsiveness

The CTSA program plays a critical role in responding to urgent public-health challenges facing the country. The aforementioned collaborative programs and the CTSA program's nationwide clinical trial infrastructure and clinical capacity have sped up the timeline for researchers to initiate clinical trials and gather healthcare data for addressing emerging public health needs.

NCATS supported several clinical trial efforts for COVID. Two randomized, placebo-controlled clinical trials evaluated plasma that contained COVID-19 antibodies and other immune cells needed to fight SARS-CoV-2 as a treatment for patients hospitalized with COVID-19. Researchers found no conclusive benefit for convalescent plasma use in hospitalized patients.[6] However, another NCATS-supported project used combined data from eight clinical trials to

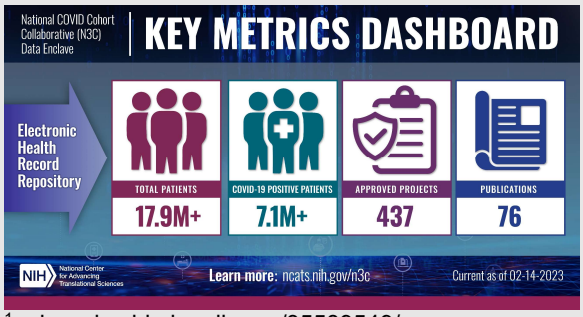
[6] ncats.nih.gov/news/releases/2022/statement-on-nih-study-testing-convalescent-plasma-in-hospitalized-patients

National COVID Cohort Collaborative (N3C)

Making COVID-19 health data accessible and usable for research to inform patient care, the N3C is using the expertise and broad reach of the CTSA Program to provide one of the largest collections of electronic health record (EHR) data from COVID-19 patients in the United States. By pooling clinical data into a harmonized data set, researchers can look for patterns of illness and identify avenues for treatments.

In two years, N3C has resulted in over 70 published scientific findings, 5 of which have been referenced in 22 policy documents from government agencies, including the Centers for Disease Control, World Health Organization, and Joint United Nations Programme on HIV/AIDS (UNAIDS). These research findings contain insights that will inform the development of diagnostics, therapies and patient care. N3C has provided important insight into characteristics, outcomes, and severity risk factors associated with SARS-CoV-2 infection among underrepresented populations and groups with preexisting conditions and the validation of potential therapeutic approaches. Key findings include patterns in EHR data that can identify patients with long COVID[1], risk factors for children with COVID that can advise treatment plans[2], and risk factors for breakthrough infections.[3] N3C contributes to the development of innovative artificial intelligence and machine learning methods critical to driving innovation in data science and translating clinical data into health interventions.

Continued investment in harmonization, usability, and analyses of EHR data serves to advance research using real-world data gathered in clinical settings. While N3C use is specific to COVID-19, NCATS is actively considering the potential for the platform's ability to address other diseases.



[1]pubmed.ncbi.nlm.nih.gov/35589549/
[2]pubmed.ncbi.nlm.nih.gov/35133437/
[3]pubmed.ncbi.nlm.nih.gov/34962505/

develop a treatment benefit index that can be used prospectively to more precisely identify patients who may benefit from convalescent plasma therapy.[7]

As part of the Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) public-private partnership, and tying into NCATS' long-established drug repurposing efforts, NCATS also led two clinical trials to test therapeutics with established safety profiles, shortening the path to identifying potential COVID-19 therapies. NCATS launched the ACTIV-1 immune modulators trial to evaluate if temporarily suppressing an overactive immune response can reduce the severity of disease, shorten hospital stays, and, most importantly, save lives. Results released in June 2022 show that treatment with the drugs infliximab or abatacept increased survival rates of adults hospitalized with COVID-19.[8] NCATS also leads the ACTIV-6 clinical trial, which is evaluating up to seven repurposed medications for effective, safe treatments for mild-to-moderate COVID-19. Repurposed medications are already approved by the FDA for other indications. Results from this set of studies include no reported differences in relief of mild-to-moderate COVID-19 symptoms, number of hospitalizations, or emergency room visits between participants taking ivermectin and participants taking a placebo.[9, 10] CTSA sites were integral to initiating and completing these COVID-19 clinical trials on an accelerated timeline.

Notable resources provided by the CTSA TIN include COVID-19 recruitment and retention toolkits, best practices for conducting trials during the COVID-19 pandemic, and a webinar for engaging racial and ethnic

[7] pubmed.ncbi.nlm.nih.gov/35076698/
[8] www.nih.gov/news-events/news-releases/immune-modulator-drugs-improved-survival-people-hospitalized-covid-19
[9] www.medrxiv.org/content/10.1101/2022.06.10.22276252v1
[10]www.medrxiv.org/content/10.1101/2022.12.15.22283488v1

minority patient populations in COVID-19 clinical trials. TIN and other CTSA community engagement resources have been a critical part of the NIH Community Engagement Alliance (CEAL) efforts to reduce racial and ethnic disparities in the prevention, diagnosis, and treatment of COVID-19.[11]

NCATS and CTSA institutions are also applying the breakthrough approaches of translational science to advance new treatments for the opioid crisis, through the NIH Helping to End Addiction Long-Term (HEAL) Initiative®. The Pain Management Effectiveness Research Network, a multisite research cooperative program, is using CTSA TIN infrastructure to support clinical trials that compare the effectiveness of existing non-addictive therapies and novel approaches for prevention and management of pain.

Looking Forward to the Future

NCATS takes pride in its stewardship of the CTSA program, and the program's many contributions to the biomedical research enterprise across the nation. Changes to the CTSA program in 2022 increased the institutional award length to up to seven years (previously five) and allows additional flexibilities that play to an institution's strengths. NCATS will continue engaging with the research community through technical assistance webinars for applicants and welcomes the dialogue and continued feedback of stakeholders in this important national program. NCATS will continue to update the Appropriations Committees on any proposed changes. In addition, Dr. Joni Rutter, NCATS' director, invited lead CTSA principal investigators and their institutional leadership to participate in a series of open discussions on how to work together to strengthen this national research network.

Budget Policy: The FY 2024 President's Budget request for the CTSA Program is $629.6 million, equal to the FY 2023 level.

II. High-Risk, Transformative Efforts for High-Need Cures

Established by Congress,[12] the **Cures Acceleration Network (CAN)** aims to advance the development of high-need cures and reduce barriers in the path from research discovery to therapies for patients. CAN supports programs and initiatives that are transformative and paradigm-shifting, including automated development of new chemical compounds, drug safety and efficacy testing using models of human tissues on a chip ("tissue chips"), computational models that harness data from prior studies to navigate towards novel health interventions, and standardized development of gene-directed therapies.

NCATS proposes to transform chemistry from an individualized craft to a modern, information-based science through **A Specialized Platform for Innovative Research Exploration (ASPIRE)**. ASPIRE is designed to bring novel, safe and effective treatments to more patients more quickly at lower cost, by addressing long-standing challenges in the field of chemistry, including lack of standardization, low reproducibility, and an inability to predict how new chemicals will behave.

[11] covid19community.nih.gov/
[12] ncats.nih.gov/files/PHS-act-update.pdf

To address the critical need for *in vitro* assays that can better predict the effectiveness and toxicity of potential drugs in humans, NCATS supports a variety of new models, including tissue chips and 3-D bioprinting. The **Tissue Chips for Drug Screening Program** uses human cell-based platforms, called microphysiological systems (MPS), that use human cells and tissues on microfluidic chips to accurately model the structure and function of human organs, such as the lung, liver, and heart. These systems capture human diversity and can model various human disorders, including rare diseases, and are projected to enable better-informed clinical trial design for both common and rare diseases, expediting the development of approved therapies. A critical next stage to increase use of these chips is accelerating the regulatory acceptance and industrial use of MPS by drug developers. NCATS will be establishing **Translational Centers for MPS (TraCe MPS)** to develop tissue chips that will meet criteria for FDA regulatory qualification as drug development tools and to promote widespread use for biomedical research. The NCATS **3D-bioprinting program** generates human-like tissues to provide physiological and pharmacological data that predict the effects of drugs better than data from traditional studies using 2-D models. The team is developing normal and disease tissue models for drug discovery and development.

Another CAN-supported effort creates connections across the enormous amounts of biomedical research data available from research publications, research datasets, EHRs, and clinical trial records. Ranging from the molecular and microscopic level to the clinical and population level, these data are difficult to collectively analyze as they often are kept in separate locations and in forms that are not compatible or interoperable with each other, such as gene sequences, clinical signs and symptoms, and drug effects. The **NCATS Biomedical Data Translator Program** (Translator) connects and integrates different data types to enable the exploration of very large sets of information to identify novel disease and treatment connections. For example, investigators asked Translator what drug candidates could be repurposed to treat drug-induced liver injury (DILI). Translator enabled novel connections of gene information across clinical databases to identify two antioxidant drugs that held promise for treating DILI.[13] These candidate drugs were safe in prior clinical trials, potentially speeding up the process of initiating DILI clinical trials. This is a real example of how the Translator approach can process much more information in an automated way to speed the possibility of new treatments.

Budget Policy: The FY 2024 President's Budget request for the Cures Acceleration Network is $66.0 million, equal to the FY 2023 level.

III. Advancing Translational Science for More Therapies to Reach All Patients

NCATS advances how basic science discoveries become health interventions through its efforts in reengineering translational sciences. Approaches include reducing or eliminating common translational roadblocks, as well as the education and training of translational scientists.

Enabling Therapeutics Development by Solving Translational Challenges

Accelerating therapeutic development and delivery is essential to NCATS' mission. Several NCATS projects and initiatives are geared towards addressing challenges in the therapeutics

[13] pubmed.ncbi.nlm.nih.gov/35611543/

development pipeline. NCATS' innovations range from harnessing human cell-based solutions for new therapies, to exploring the vast world of published research studies with novel technologies, to fostering the growing field of data science approaches for new therapeutics development.

Regenerative medicine, the replacing, engineering, or regeneration of human tissues or organs, is a path to developing targeted preventions and cures. In FY 2024, NCATS is launching a novel therapeutic approach to catalyze regenerative medicine through the use of exosomes, a type of cellular material that triggers wound-healing and tissue repair in the body. The goal of **Exosome Therapeutics for Regenerative Medicine (ExTReMe)** is to emphasize direct "off-the-shelf" therapies for tissue and wound healing, as well as treatment options personalized to individual patient needs. ExTReMe will build on the recently-concluded NIH Common Fund Regenerative Medicine Program by leveraging the expertise of the NCATS' Stem Cell Translation Laboratory.

One strategy for bringing more treatments to all people is to use already-approved drugs in new ways. **Drug repurposing** can shorten the time it takes for drug evaluation and approval, as safety and efficacy profiles already exist for these drugs. Early in the pandemic, NCATS researchers used SARS-CoV-2-related assays to screen over 10,000 compounds, including the **NCATS Pharmaceutical Collection** of nearly 3,000 approved drugs, for their activity against the virus and deposited results in the NCATS **OpenData Portal (ODP)**[14] for open and quick sharing of COVID-19-related screening data and potential pursuit of drug repurposing efforts by the broader research community. The scientific community can use the openly accessible data for a variety of drug repurposing activities, allowing them to formulate and test hypotheses, prioritize research opportunities, and speed the search for effective therapies against the virus and the disease it causes. ODP, in collaboration with the ACTIV Tracking Resistance and Coronavirus Evolution (TRACE) Program,[15] also shares curated *in vitro* therapeutic activity data on SARS-CoV-2 variants. This program has also been adapted to respond to the current mpox outbreak.

Forging Strategic Alliances

Establishing agreements is critical to collaborative research efforts, as demonstrated in ACTIV-1, N3C, and intramural partnerships with academia and industry. In FY 2022 alone, NCATS facilitated over 400 agreements to support these and many other projects. NCATS develops and uses many technology transfer mechanisms, including pioneering a new cooperative research collaboration agreement (C-RCA) that uses templated, streamlined language to allow collaborations and public-private-partnerships to begin more quickly than with other agreements. NCATS' use of these innovative agreements has accelerated research and resulted in numerous publications, clinical trials, and tangible treatments to benefit people's health, e.g., the advancement of a drug through Phase 2 trials for Alpha-1 antitrypsin deficiency (AATD), which is the most common genetic cause of chronic obstructive pulmonary disease and emphysema. C-RCA also facilitated a fetal-maternal interface "Organ-on-Chip", a novel tool to

[14] ncats.nih.gov/expertise/covid19-open-data-portal
[15] www.nih.gov/research-training/medical-research-initiatives/activ/tracking-resistance-coronavirus-evolution-trace

screen for environmental toxins and provide insight into various drugs' impacts during the earliest stages of human development.[16]

Supporting Ethics Research to Advance Translational Science

NCATS supports a small ethical, legal, and societal program to address translational challenges that arise in conceiving, planning, and conducting research to advance discoveries to improve health. NCATS supports research to inform and enable research that emphasizes benefits and avoids harms, such as guidance for ethical studies of transplantation of animal organs into humans. Other ethics projects focus on ways to ensure researcher access to hospital datasets that represent all populations; alignment of data sharing practices between hospitals and industry in ways that are respectful of individual patient autonomy and equitable across diverse communities; novel techniques for increasing enrollment in clinical trials; and development and use of algorithms in healthcare.

Inspiring the Next Generation of Translational Scientists

A diverse and highly skilled clinical and translational science workforce is critical to achieving the NCATS mission. In addition to supporting training and career awards through the CTSA program, NCATS develops and disseminates evidence-informed resources and approaches to educate and train the biomedical research workforce in translational science. Examples include:

- Translational Science Interagency Fellowships (TSIF):[17] The TSIF program is a joint three-year postdoctoral fellowship opportunity where fellows receive training from a mentoring team consisting of NCATS and FDA scientists in translational science and regulatory review to be able to efficiently work across the translational science spectrum and advance new discoveries. The TSIF program recruited five fellows since its inception in FY 2021.
- Gaining Research Equity and Advancement in Translational Sciences (G.R.E.A.T.S):[18] This new program, which welcomed its first two interns in the summer of 2022, provides an avenue to entering the translational science workforce through summer internships and is open to a diverse pool of applicants.
- Additional translational science activities include short courses in translational science that are open to the broad biomedical research community, and development of guidance for core content, such as NCATS' Translational Science Principles.
- Training in entrepreneurship: Based on the National Science Foundation's Innovation Corps (I-Corps™) program, NCATS' Advancing Innovation through Mentorship (AIM) program teaches participants how to: identify the opportunities for scientific impact; build a skillset for evaluating technology; expand professional networks; improve scope and framing of new project proposals; and communicate research to a variety of audiences. Nine teams (25 individuals) have completed AIM and reported that the program helped their research and informed them as to whether certain NCATS projects should be continued or modified. AIM-developed hypotheses and use cases have led to newly filed patent applications as well as collaborations and partnerships with academia and industry.

[16] Gadhia, et al."NCATS breaks the mold: Case studies of unique tech transfer mechanisms." Technology Transfer Tactics (October 17, 2022)
[17] ncats.nih.gov/training-education/training/TSIF
[18] ncats.nih.gov/files/NCATS-GREATS-Flyer-508.pdf

Budget Policy: The FY 2024 President's Budget request for Reengineering Translational Sciences is $172.0 million, equal to the FY 2023 level.

IV. Harnessing Translational Science Strategies for Rare Diseases Research and Therapies

Rare diseases, defined as conditions affecting fewer than 200,000 people in the United States, are a significant but underserved and underestimated public health problem. Over 10,000 different rare diseases collectively affect an estimated 30 million people in the United States (or one of 10 people — about the same number as those living with diabetes), and 95 percent of rare diseases have no approved treatment. Additionally, most rare diseases are serious, resulting in over $1 trillion in total health care costs, disability, and early death. Greater access to early genetic/genomic testing and investments in rare diseases research networks, diagnostic strategies, precision gene-directed therapies, and many-diseases-at-a-time approaches, as well as strategies that can quickly redirect to address another disease, could meaningfully advance research and therapeutics development to help those affected by these disorders.

The Collective Cost of Rare Diseases

Collectively, rare diseases are not rare, and their impact on the country and the healthcare system has been difficult to calculate. To better understand the true medical costs of rare diseases, NCATS established the Rare Disease Informatics Platform (RDIP) to collect, integrate, and analyze rare diseases data from diverse sources. An RDIP pilot program called "Impact of Rare Diseases on Patients and Healthcare Systems (IDeaS)" is using a representative set of rare diseases to extrapolate the number of rare disease patients in the United States and their medical costs. NCATS and IDeaS collaborators determined that the annual heathcare cost per patient for rare disease patients exceeded costs for non-rare disease patients of the same age by 3 to 5 times.[1]

Separate assessments of medical and insurance records by the EveryLife Foundation,[2] the Advocate Aurora Research Institute,[3] and the U.S. Government Accountability Office (GAO)[4] support these findings. As summarized in a 2022 Health Affairs article,[5] the total national spending on medical costs for rare disease patients is estimated around $400 billion per year, similar to annual direct medical costs for cancer, heart failure, and Alzheimer's disease.

NCATS is committed to finding ways to speed the diagnosis and development of treatments. These research approaches include enhancing collection of rare disease patient data; improving electronic health record structure and compatibility; support registries, natural history studies, and other databases and projects to enhance the understanding of individual rare diseases; and expanding accessibility of advanced diagnostic tools.

[1] ojrd.biomedcentral.com/articles/10.1186/s13023-021-02061-3
[2] everylifefoundation.org/burden-study/
[3] nature.com/articles/s41436-021-01241-7
[4] gao.gov/products/gao-22-104235#
[5] healthaffairs.org/do/10.1377/forefront.20220128.987667

NCATS Leads Rare Diseases Research Across NIH

NCATS engages in rare diseases research throughout the Center, in both its intramural and extramural programs (see program portraits below). NCATS completed a reorganization in 2022 and created the Division of Rare Diseases Research Innovation (DRDRI), replacing the former Office of Rare Diseases Research, highlighting the importance of rare diseases research both to NCATS and across NIH. DRDRI provides leadership, direction, and coordination for rare diseases research at NIH, and works collaboratively with NIH ICOs to address research on rare diseases. This includes coordinating the Rare Diseases Clinical Research Network (RDCRN), a cross-NIH program of 20 clinical research consortia studying over 165 rare diseases.[19, 20]

[19] ncats.nih.gov/rdcrn/about
[20] rdcrn.org/

The RDCRN program promotes highly collaborative, multi-site, patient-centric, translational, and clinical research to advance the diagnosis, management, and treatment of rare diseases. Working as a network, multidisciplinary teams of researchers located at 273 sites across the United States and internationally share research tools and resources to study over 165 rare diseases in partnership with patients, patient advocates and the NIH. RDCRN research aims to reduce the risk of failure of treatments in clinical trials by focusing on clinical trial readiness; identifying biomarkers for predicting disease diagnosis, prognosis, and outcome; and developing sensitive and specific outcome measures. A RDCRN data warehouse is being established to provide data from network activities to the rare diseases research community. In the future, NCATS hopes to build bridges between major research networks, such as the RDCRN, and academic medical centers that provide clinical care, such as CTSA institutions, to further the collaboration and sharing of rare diseases expertise, tools, and resources.

NCATS also leads highly collaborative efforts for developing, testing, and delivering gene-directed therapy platforms for rare disease treatment needs. The **Platform Vector Gene Therapy (PaVe-GT)** program was launched by NCATS to improve the efficiency of clinical trial startup by using the same gene delivery system and manufacturing methods for multiple rare disease gene therapies. PaVe-GT is starting with a pilot project focused on two inherited muscle weakness/neuromuscular junction disorders and two inherited metabolic diseases.

Therapeutics for Rare and Neglected Diseases (TRND)

The NCATS TRND program's mission is to speed the development of new treatments for diseases with high unmet medical needs. TRND program scientists stimulate therapeutic development research collaborations among other NIH intramural scientists, the academic research community, nonprofit organizations, and pharmaceutical and biotechnology companies working on rare and neglected illnesses. These cross-sector partnerships are formed to de-risk therapeutic candidates through preclinical development, submission of Investigational New Drug (IND) applications, and clinical trial planning.

In 2022, two therapies developed in collaboration with the NCATS TRND program reached notable milestones, with both receiving regulatory approvals. A gene therapy for the rare pediatric condition aromatic L-amino acid decarboxylase (AADC) deficiency, one of the first gene therapy candidates developed by TRND,[1] received approval from the European Commission. This highlights the promise for other gene targeted therapy successes. An antifungal drug therapy, where TRND contributed to optimization of commercially viable manufacturing processes,[2] received marketing approval from the FDA for treatment of chronic yeast infection (recurrent vulvovaginal candidiasis).

NCATS 'de-risking' of therapeutics led to promising results reported in a recent JAMA Neurology publication. Vamorolone, developed in partnership with NCATS, showed potential against placebo and prednisone as a treatment option for boys with Duchenne Muscular Dystrophy.[3] Such efforts by NCATS make therapeutic candidates more attractive for adoption by external partners.

[1] ncats.nih.gov/news/releases/2017/trnd-agilis
[2] ncats.nih.gov/trnd/projects/complete/antifungal-vt1129-cryptococcal-meningitis
[3] pubmed.ncbi.nlm.nih.gov/35076703/

PaVe-GT inspired NIH-wide recognition of the potential for streamlined gene therapy pathways across many diseases, not just rare diseases and led to the **Bespoke Gene Therapy Consortium (BGTC)**, part of the NIH Accelerating Medicines Partnership® (AMP®) Program. The BGTC public-private partnership is led by NCATS, and in collaboration with other NIH ICs, FDA, and FNIH, is working to establish standards to speed the development and delivery of customized gene therapies that could treat millions of people affected by rare diseases, many of which are too rare to be of commercial interest. NCATS supports the BGTC work through scientific

leadership from the rare diseases innovation division, as well as data coordination center support using CAN funding. AMP® BGTC selected 14 candidate diseases out of an initial 63 diseases nominated and announced a Request for Proposals for Phase I/II clinical trials. In FY 2023, five to six diseases will be selected for therapeutic clinical trials. If successful, these approaches are expected to be especially promising for other diseases caused by a single, known gene mutation. Increasing efficiency in gene therapies will help bring cutting-edge health interventions to more patients, advancing the development of needed cures and reducing significant translational barriers.

NCATS is also the home of the **Genetics and Rare Diseases (GARD) Information Center**, providing clear, accessible information for patients, families, caregivers, and the public on rare diseases. One of NIH's most frequently visited public websites with over a million unique visitors each month, GARD also provides contact information for support and advocacy groups, as well as a free inquiry service for people seeking additional information. Initially built in 2008, the first stage of launching a revamped GARD site began in 2022 with plans for full site modernization with enhanced features, such as providing updated information in a more user-friendly way.

NCATS is committed to shortening the time to diagnosis for rare diseases patients. Getting a correct diagnosis for a rare disease can take years: lots of visits to different doctors; unnecessary tests and procedures; and delays in getting effective care. To shorten this "diagnostic odyssey," NCATS is funding innovative research with the goal of reducing the time it takes to identify and accurately diagnose rare diseases, allowing for earlier interventions.[21] Researchers are developing easy to apply strategies, including machine learning, genetic analyses, and medical evaluation, to make faster diagnoses in a real-world setting. NCATS also plans to use real world clinical data resources to enrich its EHR-derived data platform, based on N3C, for expanded research applications, including rare diseases.

Budget Policy: The FY 2024 President's Budget request for Harnessing Translational Science Strategies for Rare Diseases Research and Therapies is $55.8 million, equal to the FY 2023 level.

Summary

NCATS is making progress in delivering more treatments for all people more quickly, and in pivoting to address critical public health needs. There is, however, much more to do to speed the translation of scientific discovery into advancements for improved human health. Particularly for the 30 million Americans affected by rare diseases, continued investments in translational science research activities and the translational science research workforce provide hope for the future.

[21] ncats.nih.gov/programs/diagnostic-odyssey

NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2015	$657,471,000			$635,230,000
Rescission				$0
2016	$660,131,000	$643,111,000	$699,319,000	$685,417,000
Rescission				$0
2017 [1]	$685,417,000	$707,335,000	$713,849,000	$705,903,000
Rescission				$0
2018	$557,373,000	$718,867,000	$729,094,000	$742,354,000
Rescission				$0
2019	$685,087,000	$751,219,000	$806,787,000	$806,373,000
Rescission				$0
2020	$694,112,000	$845,783,000	$849,159,000	$832,888,000
Rescission				$0
Supplemental				$36,000,000
2021	$787,703,000	$840,051,000	$890,009,000	$855,421,000
Rescission				$0
2022	$878,957,000	$897,812,000	$878,072,000	$882,265,000
Rescission				$0
2023	$873,654,000	$901,678,000	$907,756,000	$923,323,000
Rescission				$0
2024	$923,323,000			

[1] Budget Estimate to Congress includes mandatory financing.

NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2023 Amount Authorized	FY 2023 Enacted	2024 Amount Authorized	FY 2024 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$923,323,000	Indefinite	$923,323,000
National Center for Advancing Translational Sciences	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$923,323,000		$923,323,000

NATIONAL INSTITUTES OF HEALTH

National Center for Advancing Translational Sciences

Amounts Available for Obligation [1]

(Dollars in Thousands)

Source of Funding	FY 2022 Final	FY 2023 Enacted	FY 2024 President's Budget
Appropriation	$882,265	$923,323	$923,323
OAR HIV/AIDS Transfers	$0	$0	$0
Subtotal, adjusted budget authority	$882,265	$923,323	$923,323
Unobligated balance, start of year	$0	$0	$0
Unobligated balance, end of year (carryover)	$0	$0	$0
Subtotal, adjusted budget authority	**$882,265**	**$923,323**	**$923,323**
Unobligated balance lapsing	-$25	$0	$0
Total obligations	$882,240	$923,323	$923,323

[1] Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
FY 2022 - $34,347 FY 2023 - $41,234 FY 2024 - $37,234

NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences

Budget Authority by Object Class[1]
(Dollars in Thousands)

		FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
Total compensable workyears:				
	Full-time equivalent	298	298	0
	Full-time equivalent of overtime and holiday hours	0	0	0
	Average ES salary	$208	$212	$4
	Average GM/GS grade	13.2	13.2	0.0
	Average GM/GS salary	$132	$138	$6
	Average salary, Commissioned Corps (42 U.S.C. 207)	$136	$136	$1
	Average salary of ungraded positions	$143	$144	$1
	OBJECT CLASSES	**FY 2023 Enacted**	**FY 2024 President's Budget**	**FY 2024 +/- FY 2023**
	Personnel Compensation			
11.1	Full-Time Permanent	$25,063	$26,430	$1,367
11.3	Other Than Full-Time Permanent	$14,244	$15,021	$777
11.5	Other Personnel Compensation	$1,755	$1,850	$96
11.7	Military Personnel	$446	$470	$24
11.8	Special Personnel Services Payments	$3,245	$3,422	$177
11.9	**Subtotal Personnel Compensation**	**$44,752**	**$47,193**	**$2,441**
12.1	Civilian Personnel Benefits	$14,892	$15,638	$746
12.2	Military Personnel Benefits	$131	$138	$7
13.0	Benefits to Former Personnel	$0	$0	$0
	Subtotal Pay Costs	**$59,776**	**$62,970**	**$3,194**
21.0	Travel & Transportation of Persons	$459	$541	$82
22.0	Transportation of Things	$73	$75	$2
23.1	Rental Payments to GSA	$0	$0	$0
23.2	Rental Payments to Others	$0	$0	$0
23.3	Communications, Utilities & Misc. Charges	$82	$84	$2
24.0	Printing & Reproduction	$0	$0	$0
25.1	Consulting Services	$59,044	$56,525	-$2,519
25.2	Other Services	$69,052	$66,973	-$2,079
25.3	Purchase of Goods and Services from Government Accounts	$56,963	$57,572	$608
25.4	Operation & Maintenance of Facilities	$2,123	$2,124	$1
25.5	R&D Contracts	$10,886	$9,147	-$1,739
25.6	Medical Care	$1,811	$1,885	$74
25.7	Operation & Maintenance of Equipment	$5,326	$5,443	$117
25.8	Subsistence & Support of Persons	$0	$0	$0
25.0	**Subtotal Other Contractual Services**	**$205,205**	**$199,669**	**-$5,536**
26.0	Supplies & Materials	$8,411	$8,613	$202
31.0	Equipment	$2,607	$2,670	$63
32.0	Land and Structures	$517	$530	$12
33.0	Investments & Loans	$0	$0	$0
41.0	Grants, Subsidies & Contributions	$646,172	$648,153	$1,981
42.0	Insurance Claims & Indemnities	$0	$0	$0
43.0	Interest & Dividends	$20	$20	$0
44.0	Refunds	$0	$0	$0
	Subtotal Non-Pay Costs	**$863,547**	**$860,353**	**-$3,194**
	Total Budget Authority by Object Class	**$923,323**	**$923,323**	**$0**

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

NATIONAL INSTITUTES OF HEALTH

National Center for Advancing Translational Sciences

Salaries and Expenses

(Dollars in Thousands)

Object Classes	FY 2023 Enacted	FY 2024 President's Budget	FY 2024 +/- FY 2023
Personnel Compensation			
Full-Time Permanent (11.1)	$25,063	$26,430	$1,367
Other Than Full-Time Permanent (11.3)	$14,244	$15,021	$777
Other Personnel Compensation (11.5)	$1,755	$1,850	$96
Military Personnel (11.7)	$446	$470	$24
Special Personnel Services Payments (11.8)	$3,245	$3,422	$177
Subtotal, Personnel Compensation (11.9)	**$44,752**	**$47,193**	**$2,441**
Civilian Personnel Benefits (12.1)	$14,892	$15,638	$746
Military Personnel Benefits (12.2)	$131	$138	$7
Benefits to Former Personnel (13.0)	$0	$0	$0
Subtotal Pay Costs	**$59,776**	**$62,970**	**$3,194**
Travel & Transportation of Persons (21.0)	$459	$541	$82
Transportation of Things (22.0)	$73	$75	$2
Rental Payments to Others (23.2)	$0	$0	$0
Communications, Utilities & Misc. Charges (23.3)	$82	$84	$2
Printing & Reproduction (24.0)	$0	$0	$0
Other Contractual Services			
Consultant Services (25.1)	$28,411	$28,064	-$346
Other Services (25.2)	$69,052	$66,973	-$2,079
Purchase of Goods and Services from Government Accounts (25.3)	$31,685	$32,249	$564
Operation & Maintenance of Facilities (25.4)	$2,123	$2,124	$1
Operation & Maintenance of Equipment (25.7)	$5,326	$5,443	$117
Subsistence & Support of Persons (25.8)	$0	$0	$0
Subtotal Other Contractual Services	**$136,597**	**$134,853**	**-$1,744**
Supplies & Materials (26.0)	$8,411	$8,613	$202
Subtotal Non-Pay Costs	**$145,622**	**$144,165**	**-$1,457**
Total Administrative Costs	**$205,398**	**$207,135**	**$1,737**

NATIONAL INSTITUTES OF HEALTH
National Center for Advancing Translational Sciences

Detail of Full-Time Equivalent Employment (FTE)

Office	FY 2022 Final			FY 2023 Enacted			FY 2024 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Office of the Director									
Direct:	8	-	8	9	-	9	9	-	9
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	8	-	8	9	-	9	9	-	9
Office of Administrative Management									
Direct:	48	-	48	51	-	51	51	-	51
Total:	48	-	48	51	-	51	51	-	51
Division of Extramural Activties									
Direct:	31	-	31	33	-	33	33	-	33
Total:	31	-	31	33	-	33	33	-	33
Division of Rare Diseases Research Innovation									
Direct:	8	-	8	9	-	9	9	-	9
Total:	8	-	8	9	-	9	9	-	9
Office of Policy, Communications, and Education									
Direct:	13	-	13	14	-	14	14	-	14
Total:	13	-	13	14	-	14	14	-	14
Office of Strategic Alliances									
Direct:	9	-	9	10	-	10	10	-	10
Total:	9	-	9	10	-	10	10	-	10
Office of Special Initiatives									
Direct:	5	-	5	6	-	6	6	-	6
Reimbursable:	1	-	1	1	-	1	1	-	1
Total:	6	-	6	7	-	7	7	-	7
Office of Drug Development Partnership Programs									
Direct:	7	-	7	7	-	7	7	-	7
Reimbursable:	1	-	1	1	-	1	1	-	1
Total:	8	-	8	8	-	8	8	-	8
Office of Translational Medicine									
Direct:	2	-	2	4	-	4	4	-	4
Total:	2	-	2	4	-	4	4	-	4
Division of Pre-Clinical Innovation									
Direct:	87	1	88	101	1	102	101	1	102
Reimbursable:	5	-	5	5	-	5	5	-	5
Total:	92	1	93	106	1	107	106	1	107
Division of Clinical Innovation									
Direct:	34	1	35	44	1	45	44	1	45
Total:	34	1	35	44	1	45	44	1	45
Office of Grants Management and Scientific Review									
Reimbursable:	1	-	1	1	-	1	1	-	1
Total:	1	-	1	1	-	1	1	-	1
Total	260	2	262	296	2	298	296	2	298
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0

FISCAL YEAR	Average GS Grade
2020	13.0
2021	13.2
2022	13.2
2023	13.2
2024	13.2

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Detail of Positions[1]

GRADE	FY 2022 Final	FY 2023 Enacted	FY 2024 President's Budget
Total, ES Positions	1	1	1
Total, ES Salary	$203,700	$208,099	$212,498
General Schedule			
GM/GS-15	24	30	30
GM/GS-14	53	55	55
GM/GS-13	74	77	77
GS-12	17	18	18
GS-11	9	10	10
GS-10	0	0	0
GS-9	4	6	6
GS-8	0	0	0
GS-7	4	6	6
GS-6	0	0	0
GS-5	0	0	0
GS-4	0	0	0
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	185	202	202
Commissioned Corps (42 U.S.C. 207)			
Assistant Surgeon General	0	0	0
Director Grade	1	1	1
Senior Grade	1	1	1
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	2	2	2
Ungraded	83	93	93
Total permanent positions	190	210	210
Total positions, end of year	271	298	298
Total full-time equivalent (FTE) employment, end of year	262	298	298
Average ES salary	$203,700	$208,099	$212,498
Average GM/GS grade	13.2	13.2	13.2
Average GM/GS salary	$129,107	$132,497	$138,428

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