



National Institute of General Medical Sciences

CONGRESSIONAL JUSTIFICATION
FY 2025

Department of Health and Human Services
National Institutes of Health



National Institute of
General Medical Sciences

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DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute of General Medical Sciences

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General Notes

1. FY 2024 funding levels cited in this document are based on the Continuing Resolution in effect at the time of budget preparation (Public Law 118-35) and do not include HIV/AIDS transfers.
2. Detail in this document may not sum to the subtotals and totals due to rounding.

Cover Page

Snowflake yeast are connected by their cell walls (blue). Stained membranes (magenta) and cytoplasm (green) show that individual cells remain separate. Image courtesy of Anthony Burnetti, Ozan Bozdağ, and William Ratcliff, Georgia Institute of Technology.

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Director's Overview

The National Institute of General Medical Sciences (NIGMS) supports a broad portfolio of foundational research – a hallmark of the American innovation enterprise – to elucidate the fundamental biological processes underlying human health and disease. NIGMS fosters innovation and discovery using a variety of strategies: by making strategic investments that promote highly creative research across scientific disciplines; building a robust research workforce that incorporates diverse perspectives; broadening the geographic distribution of research capacity and infrastructure; and ensuring equitable access to cutting-edge research technologies. NIGMS also supports research in specific clinical areas that affect multiple organ systems, such as sepsis and anesthesiology.



Jon R. Lorsch, Ph.D.
Director, NIGMS

Building the Foundation for Innovative Research

Innovation begins with a foundation of knowledge that inspires novel questions, followed by a stable and flexible system of support that encourages creativity in the pursuit of answers. Accordingly, our flagship R35 Maximizing Investigators' Research Award (MIRA) combines stability of funding with the flexibility needed to leverage and pursue unexpected results, insights, and opportunities. Early-Stage Investigators (ESIs) who apply for MIRA are not required to provide preliminary data with their research proposals and are instead evaluated based on the strength and potential of their proposed program of research along with their past record of productivity and performance. To provide a level playing field during peer review, ESI

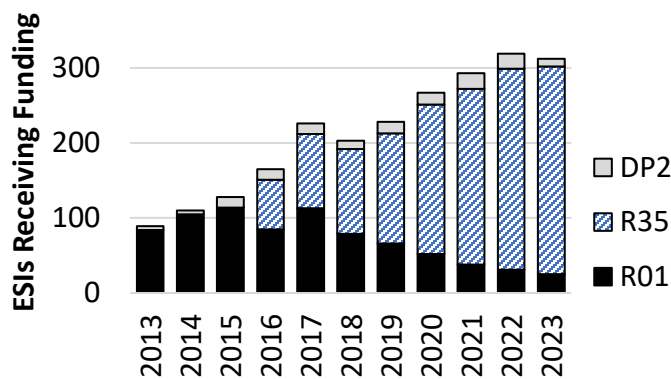


Figure 1. NIGMS has tripled the number of ESIs funded since FY 2013, with the vast majority of new NIGMS-funded ESIs on R35 MIRA grants.

applications are reviewed independently from those of established investigators, allowing the review process to focus on innovative ideas. Further, NIGMS prioritizes making awards to meritorious ESIs over additional awards to already well-funded investigators. Through these approaches, we have tripled the number of ESIs supported by the Institute since FY 2013, with the vast majority of new ESIs supported by MIRA (Figure 1).

In addition to expanded support of ESIs, MIRA has enabled a variety of exciting discoveries that could drive future advances in human health. One example builds on research about how cells change shape to understand how muscle cells assemble the protein structures that help them generate force. Another involves repurposing insights from organic chemistry to modify the plastics used in medical devices, which will allow researchers to vary how quickly polymer stitches dissolve in the body or adjust the rate at which an implant can release a drug.

Based on the above successes, NIGMS will continue to strengthen and build on MIRA. For instance, we are working to increase the median budget of the award to offset the effects of

inflation and have broadened eligibility criteria to include investigators who are not ESIs but are nonetheless new to NIH funding, thus allowing more investigators (such as those from lower-resourced institutions) to apply. In NIGMS' 2021-2025 Strategic Plan, we set a target of supporting at least 60 percent of our R01-equivalent portfolio through MIRA by 2025. As of FY 2023, we have made significant progress toward achieving this target, with MIRA grants currently constituting 54 percent of NIGMS' R01-equivalent portfolio.

Building a Research Workforce with Innovative and Diverse Perspectives

Innovative insights and ideas are often catalyzed by fresh perspectives that arise from a diversity of both scientific and life experiences. To this end, NIGMS research training programs prioritize building a biomedical research workforce that reflects a broad range of experiences, technical backgrounds, and skillsets that equip trainees to make tomorrow's life-saving discoveries.

NIGMS' pioneering Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) program, for instance, supports talented investigators from diverse backgrounds as they transition from postdoctoral scholars to independent early-stage faculty. MOSAIC reimagines individual postdoctoral career transition awards as a cohort-based program that not only builds a community of talented early-career researchers, but also engages scientific professional societies and academic institutions to provide the necessary mentorship, networking, and professional development activities required to successfully achieve this career transition. As of FY 2023, 17 NIH Institutes and Centers have funded a diverse pool of 137 MOSAIC scholars (constituting 72 percent women and 73 percent individuals from underrepresented racial and ethnic groups). The cohort model (Figure 2) has been so successful that more than 42 scholars have already obtained faculty positions, with more to transition as they progress through the program.

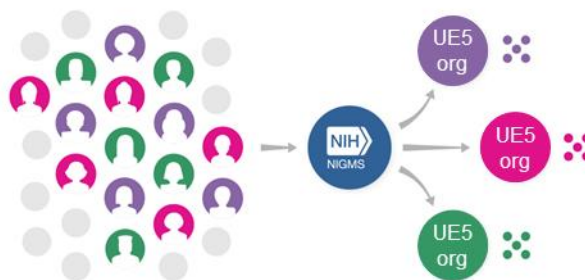


Figure 2. In the cohort model used by MOSAIC and ARC, applicants are selected by NIH, then divided into cohorts. Professional development activities for each cohort are organized by the UE5 partner organization.

Based on the success of MOSAIC, we launched the new Advancing Research Careers (ARC) program in FY 2024, which will apply the cohort model to the earlier transition from late-stage Ph.D. training to postdoctoral research fellowship. Other NIGMS training programs tackle earlier educational transitions, such as moving from a terminal Master's degree program to a Ph.D. program (Bridges to the Doctorate) or from a two-year community college to a four-year STEM degree program (Bridges to the Baccalaureate, or B2B). B2B occupies a unique niche among NIH training programs because of its focus on community colleges, which serve a wide range of students, including students from economically disadvantaged backgrounds who are less likely to transfer to a four-year degree program.¹ A recent evaluation of B2B by an external working group of NIGMS' Advisory Council found that the program was highly successful in its goals: 80-90 percent of participating community college students transfer to a 4-year college or university and 80-90 percent of those who transfer successfully complete a bachelor's degree.² As an example of the

¹ Causey, J., et al. (2023). *Transfer and Progress Fall 2022*. National Student Clearinghouse Research Center.

program's success, one alum of the program whose biomedical research career was jump-started by B2B has returned to her alma mater as an assistant professor, teaching organic chemistry and developing molecules to capture drugs in the body. NIGMS training programs continued to support her at nearly every stage of her career from B2B to her first independent faculty position.

B2B is only one example of how NIGMS designs and assesses new approaches to better achieve the NIH mission of building a robust biomedical R&D workforce.² We use data from analyses and evaluations to improve our training programs and identify gaps and opportunities where workforce or training needs can be better met. Based on a 2022 analysis by NIGMS staff that showed disparities in NIH training programs for clinician-scientists,³ NIGMS launched the Leading Equity and Diversity in the Medical Scientist Training Program (LEAD MSTP) in FY 2023 to help establish dual-degree (clinical and research doctorate) training programs at Historically Black Colleges and Universities (HBCUs), Tribal Colleges and Universities (TCUs), and institutions in Institutional Development Award (IDeA) states.

In some cases, addressing key gaps requires developing new, innovative programs. For example, during an evaluation and Tribal Consultation for the Native American Research Centers for Health (NARCH) program, Tribal leaders identified the need for training programs to develop researchers who would focus on issues related to American Indian/Alaska Native (AI/AN) health and health disparities.² As a result, NIGMS is developing the upcoming Tribal Undergraduate to Graduate Research Training and Leadership Experiences (TURTLE) program using a new, phased funding mechanism. TURTLE will first build capacity at TCUs and Tribal organizations by developing training grant infrastructure and enhancing educational activities, then provide institutional support for undergraduate and graduate students.

Building Research Capacity for Innovation and Entrepreneurship

While the capacity for innovation knows no geographic bounds, research capacity has not historically been distributed broadly among states, institutions, and jurisdictions. NIGMS takes a multifaceted approach to building regional and state research capacity by developing research infrastructure, creating opportunities for students and faculty to conduct research, and providing access to state-of-the-art research technologies.

To broaden the geographic distribution of NIH funding, NIGMS administers the IDeA program, a Congressionally mandated program that supports regional innovation and workforce development in biomedical fields by building research capacity in the 23 IDeA-eligible states and Puerto Rico, jurisdictions that have historically received lower levels of NIH funding. One IDeA component, the IDeA Networks of Biomedical Research Excellence (INBREs), supports a network in each IDeA state that connects research-intensive institutions as hubs with primarily undergraduate institutions (PUIs) as spokes, and supports faculty research, scientific infrastructure enhancement, and student research experiences. A recent evaluation found that NIGMS' long-term commitment to INBREs has been transformative for institutional research culture, especially at PUIs, with increasing numbers of IDeA-state faculty competing successfully for independent research funding.²

² www.nigms.nih.gov/about/dima/Pages/reports.aspx (click "Findings and Recommendations" to expand results)

³ www.atsjournals.org/doi/full/10.34197/ats-scholar.2022-0018PS

Building biomedical research capacity involves investments not only in states and institutions, but also in communities and organizations, including those that have long experienced health disparities. Thus, the NARCH program supports biomedical research and career enhancement opportunities to meet health research needs specifically identified and prioritized by AI/AN communities. NIGMS recently revised the program to incorporate specific feedback from the aforementioned evaluation and Tribal Consultation.² These updates include efforts to retain the majority of NARCH funds within AI/AN tribal communities, to ensure that NARCH applications are reviewed using culturally relevant criteria, and to expand career development opportunities to high school students. New programs are also being developed to help Tribes without existing NARCH awards develop stronger applications, train key personnel for human subjects research, and address issues of cultural relevance in the oversight of clinical trials.

A lack of access to innovative and advanced technologies can severely limit the ability of researchers to contribute to important scientific advances. To address this challenge, NIGMS invests in programs that ensure a wide range of researchers have access to research-enabling technologies.

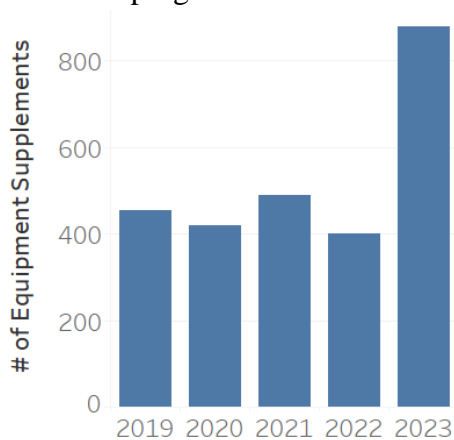


Figure 3. In FY 2023, NIGMS doubled supplements to NIGMS-funded researchers to modernize equipment.

In addition, NIGMS leads the NIH UNITE Initiative’s Instrumentation Grant Program for Resource Limited Institutions, which supports the acquisition of modern scientific instruments for research and education use. We also provide administrative supplements to NIGMS grantees that allow them to modernize their hardware and accelerate cutting-edge work rather than relying on older technologies. NIGMS has nearly doubled the number of equipment supplements funded in FY 2023 (Figure 3), helping to modernize scientific infrastructure throughout the country.

In addition to ensuring access to advanced technologies, NIGMS’ technology development portfolio supports researchers in piloting, scaling, and ultimately

commercializing technologies within NIGMS’ mission to accelerate innovation and facilitate the adoption of a broad range of new technologies. Some researchers initially supported through our technology development R01 grants have further developed and commercialized their work through NIGMS Small Business Innovation Research (SBIR) grants. One example is a technology to quickly and accurately classify cells in 3D cultures, providing complementary information to common screening methods used in biopharma research. Another technology uses mass spectrometry on chemically modified proteins to detect drug binding; researchers have developed a commercial device to automate this workflow. Three additional NIGMS initiatives support investigators in building the expertise needed to prepare technologies for dissemination and commercialization so that they can be used by other investigators, clinicians, and ultimately, patients (see Program Portrait). As a result of NIGMS’ long-standing commitment to supporting innovative and foundational research, U.S. Patent and Trade Office data shows that NIGMS-funded researchers consistently received an average of 392 patents per year from 2012 to 2022. These efforts demonstrate NIGMS’ commitment to driving innovation at every point along the technology development pathway.



National Institute of
General Medical Sciences

Established in 1962, the National Institute of General Medical Sciences (NIGMS) supports foundational research, ranging from studies of genes, molecules, and cells to whole systems like research organisms and humans, that drives advances in human health and disease. NIGMS also invests in training the next generation of scientists, expanding the breadth of the scientific workforce, and developing institutional research capacity throughout the country. Finally, NIGMS supports research in specific clinical areas that affect multiple organ systems, such as sepsis and anesthesiology.



Jon R. Lorsch, Ph.D.
Director, NIGMS

NIGMS Strategic Priorities

- Support investigator-initiated, foundational research that drives scientific discovery and can shed light on human health and disease
- Invest in the training and development of a highly skilled, creative, adaptable, and diverse biomedical research workforce
- Build biomedical research capacity throughout the country and ensure access to essential tools, technologies, and resources for doing impactful biomedical research
- Continually evaluate, improve, and communicate the results of NIGMS' scientific investments to ensure good stewardship of public funds

Building a Foundation for Innovation in Biomedical Research

NIGMS fosters innovation on multiple fronts, including making strategic investments that promote highly creative research across a range of scientific disciplines, building a robust workforce that incorporates diverse perspectives, enhancing biomedical research capacity and infrastructure, and ensuring access to state-of-the-art technologies for cutting-edge research. This integrated approach to the scientific enterprise provides the foundation for scientific discovery, understanding, and advancement.

NIGMS by the Numbers (in Fiscal Year 2023)

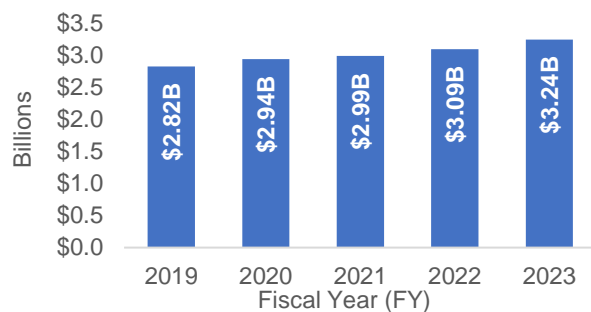
4,890
principal
investigators
supported

312
new awards to
early-stage
investigators

5,233
research
trainees
supported

121
minority-serving
institutions
supported

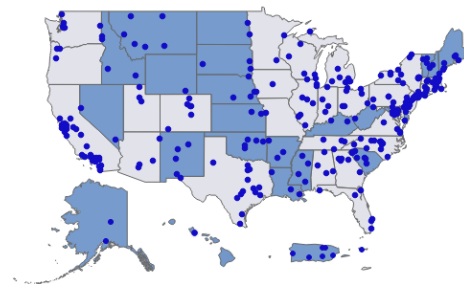
NIGMS Funding History



FY 2024 Continuing Resolution: \$3.24B

FY 2025 President's Budget Request: \$3.25B

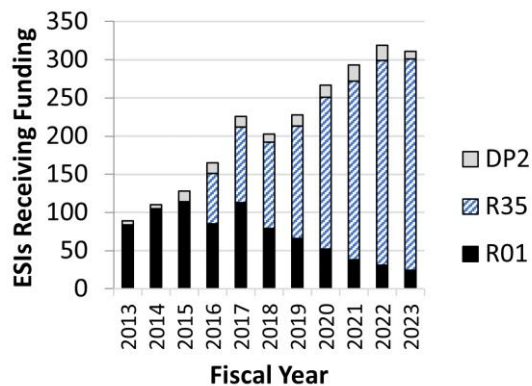
455 institutions across the country, including many resource-limited institutions, receive 20 percent or more of their NIH funding from NIGMS.



- Institutional Development Award (IDeA) state
- Institution w/ ≥ 20 percent of NIH funding from NIGMS

Expanding MIRA

Through the R35 Maximizing Investigators' Research Award (MIRA), NIGMS has tripled the number of new awards made to early stage investigators (ESIs) since 2013.



In FY 2023, **MIRA comprised 54 percent of NIGMS' R01-equivalent awards**, nearing NIGMS' strategic target of supporting 60 percent of its R01-equivalent portfolio through MIRA by 2025.

Building Research Culture and Capacity

Through a hub-and-spoke model that connects research-intensive institutions to primarily undergraduate institutions (PUIs), the IDeA Networks of Biomedical Research Excellence (INBREs) develop a network in each IDeA state to support scientific infrastructure enhancement as well as faculty and student research. A recent program evaluation found that NIGMS' long-term commitment to INBREs has been transformative for institutional research culture, especially at PUIs, helping to increase the numbers of IDeA-state faculty who compete successfully for independent research funding. In addition to building capacity, INBREs also expand access to and provide training for cutting-edge technologies. The NIGMS Cloud Sandbox, for instance, helps INBRE researchers and students learn to leverage large biomedical data sets through data analytic tools and shared storage capacity.

Improving Sepsis Diagnosis

Sepsis remains a poorly understood condition with limited diagnostic tools and few specific treatments. In collaboration with the National Heart, Lung, and Blood Institute, NIGMS funded an Acute Respiratory Distress Syndrome, Pneumonia, and Sepsis Phenotyping Consortium (APS Consortium) coordinating center, as well as six regional clinical centers, to conduct a longitudinal study aimed at understanding how genetic, molecular, and other factors influence variations in sepsis symptoms.

Supporting Trainees at a Key Career Transition

NIGMS recently launched the Advancing Research Careers (ARC) program, which will support promising graduate students from diverse backgrounds as they complete their doctoral dissertation projects and transition into mentored postdoctoral research positions. NIGMS will fund partner organizations such as higher education institutions and scientific professional societies to lead the mentoring, networking, and professional development activities necessary to successfully achieve this career transition.

Addressing the Health Research Needs of Tribal Communities

Following an evaluation of the Native American Research Centers for Health (NARCH) program and a formal Tribal consultation soliciting input from Tribal leaders, NIGMS revised the NARCH program to streamline its application process, ensure application review using culturally appropriate criteria, enhance retention of NARCH funds within American Indian/Alaska Native communities, and expand career outreach to high school students.

To further address Tribal community needs, NIGMS is developing the Tribal Undergraduate to Graduate Research Training and Leadership Experiences (TURTLE) program, which will build capacity at Tribal colleges and universities, develop training grant infrastructure, enhance educational activities, and provide institutional training support for undergraduate and graduate students.

Major Changes in the Budget Request

Major changes by budget mechanism and/or budget activity detail are briefly described below. Note that there may be overlap between budget mechanism and activity detail and these highlights will not sum to the total change for the FY 2025 President's Budget. The FY 2025 budget request for the National Institute of General Medical Sciences (NIGMS) is \$3,249.4 million, representing a \$9.7 million increase compared to the FY 2023 Final level. The FY 2025 President's Budget reflects the Administration's fiscal policy goals for the Federal Government. The FY 2025 budget for NIGMS prioritizes Research Project Grants (RPGs) and Research Training. Within this framework, NIGMS will pursue its highest research priorities through strategic investments and careful stewardship of appropriated funds:

Research Project Grants (-\$1.6 million; total \$2,062.9 million):

NIGMS will continue to prioritize the support of investigator-initiated Research Project Grants (RPGs) in FY 2025. By supporting healthy success rates for new and early-stage investigators via programs like the Maximizing Investigators' Research Award, NIGMS will continue to invest in the pipeline of a diverse representation of researchers.

Consistent with other NIH Institutes, average cost of competing RPGs will remain the same as in FY 2023. Non-competing RPG commitments will be fully funded in FY 2025. Overall, RPGs will decrease 0.1 percent relative to the FY 2023 Final level.

Research Center Grants (-\$9.4 million; total \$459.7 million):

In FY 2025, NIGMS will continue to maintain its research center grant portfolio. The Centers mechanism sees an overall -2.0 percent decrease relative to the FY 2023 Final level. Like the overall net change for the Institute, the Institutional Development Award (IDeA) program will increase 0.3 percent compared to the FY 2023 Final level. The IDeA total program level in FY 2025 is proposed at \$427.2 million.

Other Research (-\$9.4 million; total \$207.7 million):

This budget represents a -4.3 percent decrease in Other Research from the FY 2023 Final level. NIGMS is completing the transitioning of programs from Other Research and Minority Biomedical Research Support (MBRS) into Institutional Training awards. The transition includes moving the Initiative for Maximizing Student Development (IMSD) and the Research Initiative for Scientific Enhancement (RISE), from the MBRS sub-mechanism, as well as Bridges to the Baccalaureate and Bridges to the Doctorate, from the Other sub-mechanism, to new programs under the Training mechanism. Established in FY 2020, the Graduate Research Training Initiative for Student Enhancement (G-RISE), the Undergraduate Research Training Initiative for Student Enhancement (U-RISE) and the Bridges Programs are similar to their predecessors. The transition of moving these trainees and students to these innovative NIGMS programs will better equip the institute to assist and track these fellows along the various stages of their career. Overall, the MBRS sub-mechanism decreases by 66.3 percent from the FY 2023 Final level which allows for greater opportunities in diversity research programs and training grants in the Ruth L. Kirchstein Training Awards, along with support for the Support for Research Excellence (SuRE) program in RPGs.

Ruth L. Kirchstein Training Awards (+\$16.7 million; total \$287.1 million):

Within this budget and consistent with NIH policy, this budget represents a 2.0 percent increase for predoctoral and postdoctoral trainee stipends. Institutional Training sees a 6.4 percent increase due to the transition of MBRS RISE, and the Bridges program in Other Research, as described above. Additionally, NIGMS will support the Leading Equity and Advancing Diversity in the Medical Scientist Training Program (LEAD MSTP).

Research and Development (R&D) Contracts (+\$7.3 million; total \$30.8 million):

The R&D Contracts mechanism sees a 31 percent increase relative to FY 2023 due an increase in support for Inter-agency Agreements, NIH loan repayment programs, and increased costs associated with assessments for centrally-provided services.

Research Management and Support (+\$6.8 million; total \$91.3 million):

Along with covering the costs of employee pay raises and benefit increases, this budget includes an increase for associated pay costs to support 219 full-time equivalent (FTE) employees. With personnel and benefit mandatory increases consistent with NIH-wide policy, an increase to existing FTE is provided for the annualized FY 2025 pay escalation factors. NIGMS relies on the efforts of its workforce to accomplish its core activities of reviewing, awarding, and managing its grants and contracts. Additional FTE employees will allow NIGMS to provide appropriate grant oversight and management for the Institute's extramural grant programs. NIGMS has been in the process of recruiting approved FTE employees in FY 2023 and FY 2024 for Program, Grants Management, Review, and program evaluation.

BUDGET MECHANISM TABLE

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Budget Mechanism *
(Dollars in Thousands)

Mechanism	FY 2023 Final		FY 2024 CR		FY 2025 President's Budget		FY 2025 +/- FY 2023	
	Number	Amount	Number	Amount	Number	Amount	Number	Amount
<u>Research Projects:</u>								
Noncompeting	3,539	\$1,463,052	3,697	\$1,535,249	3,720	\$1,564,087	181	\$101,035
Administrative Supplements	<i>(1,280)</i>	\$119,700	<i>(1,190)</i>	\$111,307	<i>(1,190)</i>	\$105,689	<i>-(90)</i>	<i>-\$14,011</i>
<u>Competing:</u>								
Renewal	293	\$138,211	256	\$107,493	253	\$106,143	-40	<i>-\$32,068</i>
New	857	\$343,552	694	\$290,628	685	\$286,981	-172	<i>-\$56,572</i>
Supplements	0	\$0	0	\$0	0	\$0	0	\$0
Subtotal, Competing	1,150	\$481,763	950	\$398,121	938	\$393,124	-212	<i>-\$88,639</i>
Subtotal, RPGs	4,689	\$2,064,515	4,647	\$2,044,677	4,658	\$2,062,900	-31	<i>-\$1,615</i>
SBIR/STTR	168	\$106,622	166	\$105,300	167	\$105,780	-1	<i>-\$842</i>
Research Project Grants	4,857	\$2,171,136	4,813	\$2,149,977	4,825	\$2,168,680	-32	<i>-\$2,456</i>
<u>Research Centers</u>								
Specialized/Comprehensive	164	\$447,879	164	\$447,879	165	\$451,219	1	\$3,340
Clinical Research	0	\$0	0	\$0	0	\$0	0	\$0
Biotechnology	11	\$19,134	9	\$16,293	3	\$6,383	-8	<i>-\$12,751</i>
Comparative Medicine	1	\$2,109	1	\$2,140	1	\$2,140	0	\$31
Research Centers in Minority Institutions	0	\$0	0	\$0	0	\$0	0	\$0
Research Centers	176	\$469,121	174	\$466,312	169	\$459,742	-7	<i>-\$9,380</i>
<u>Other Research:</u>								
Research Careers	137	\$34,770	137	\$34,770	137	\$34,874	0	\$104
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	\$25,558	0	\$21,257	0	\$21,321	0	<i>-\$4,237</i>
Minority Biomedical Research Support	154	\$44,771	86	\$26,076	30	\$15,098	-124	<i>-\$29,673</i>
Other	226	\$112,063	230	\$136,028	231	\$136,435	5	\$24,372
Other Research	517	\$217,162	453	\$218,131	398	\$207,728	-119	<i>-\$9,433</i>
Total Research Grants	5,550	\$2,857,419	5,440	\$2,834,420	5,392	\$2,836,150	-158	<i>-\$21,269</i>
<u>Ruth L Kirschstein Training Awards:</u>	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	257	\$15,158	257	\$15,370	253	\$15,370	-4	\$212
Institutional Awards	4,976	\$255,255	5,205	\$266,077	5,248	\$271,695	272	\$16,440
Total Research Training	5,233	\$270,413	5,462	\$281,447	5,501	\$287,065	268	\$16,652
Research & Develop. Contracts	17	\$23,530	22	\$30,640	22	\$30,823	5	\$7,293
<i>SBIR/STTR (non-add)</i>	<i>(0)</i>	<i>(\$1,162)</i>	<i>(0)</i>	<i>(\$1,162)</i>	<i>(0)</i>	<i>(\$1,165)</i>	<i>(0)</i>	<i>(\$3)</i>
Intramural Research	0	\$3,863	0	\$3,963	0	\$4,066	0	\$203
Res. Management & Support	189	\$84,454	219	\$89,209	219	\$91,271	30	\$6,817
<i>SBIR Admin. (non-add)</i>		<i>(\$7)</i>		<i>(\$7)</i>		<i>(\$7)</i>		<i>(\$0)</i>
Construction		\$0		\$0		\$0		\$0
Buildings and Facilities		\$0		\$0		\$0		\$0
Total, NIGMS	189	\$3,239,679	219	\$3,239,679	219	\$3,249,375	30	\$9,696

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

NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES

For carrying out section 301 and title IV of the PHS Act with respect to general medical sciences, \$3,249,375,000, of which \$2,018,482,000 shall be from funds available under section 241 of the PHS Act: Provided, That not less than \$427,231,000 is provided for the Institutional Development Awards program.

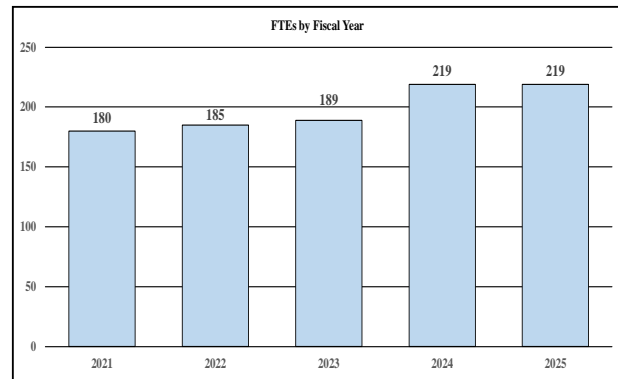
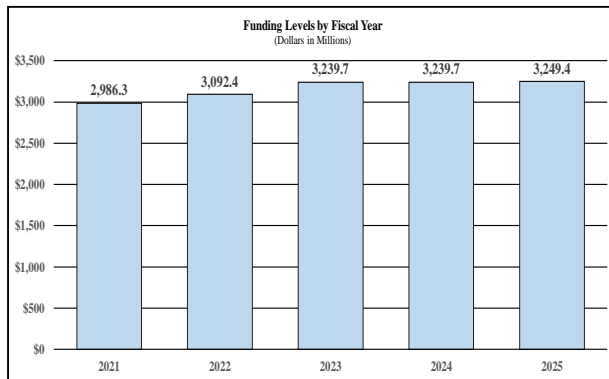
SUMMARY OF CHANGES

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

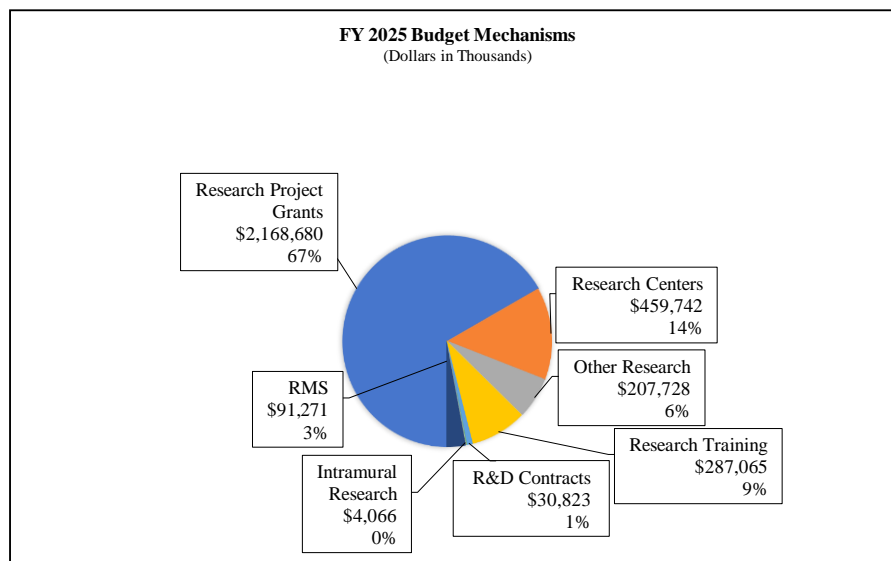
Summary of Changes
(Dollars in Thousands)

CHANGES	FY 2023 Final		FY 2025 President's Budget		Built-In Change from FY 2023 Final	
	FTEs	Budget Authority	FTEs	Budget Authority	FTEs	Budget Authority
1. Intramural Research:						
A. Built-in cost changes:						
a. FY 2024 effect of FY 2023 pay & benefits increase		\$2,008		\$2,178		\$23
b. FY 2024 effect of FY 2024 pay & benefits increase		\$2,008		\$2,178		\$78
c. FY 2024 paid days adjustment		\$2,008		\$2,178		\$8
d. Differences attributable to FY 2024 change in FTE		\$2,008		\$2,178		\$0
e. FY 2025 effect of FY 2024 pay & benefits increase		\$2,008		\$2,178		\$27
f. FY 2025 effect of FY 2025 pay & benefits increase		\$2,008		\$2,178		\$34
g. FY 2025 paid days adjustment		\$2,008		\$2,178		\$0
h. Differences attributable to FY 2025 change in FTE		\$2,008		\$2,178		\$0
i. Payment for centrally furnished services		\$155		\$160		\$5
j. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		\$1,701		\$1,728		\$103
Subtotal, IR built-in cost changes						\$278
2. Research Management and Support:						
A. Built-in cost changes:						
a. FY 2024 effect of FY 2023 pay & benefits increase		\$37,933		\$43,282		\$449
b. FY 2024 effect of FY 2024 pay & benefits increase		\$37,933		\$43,282		\$1,476
c. FY 2024 paid days adjustment		\$37,933		\$43,282		\$146
d. Differences attributable to FY 2024 change in FTE		\$37,933		\$43,282		\$7,295
e. FY 2025 effect of FY 2024 pay & benefits increase		\$37,933		\$43,282		\$524
f. FY 2025 effect of FY 2025 pay & benefits increase		\$37,933		\$43,282		\$718
g. FY 2025 paid days adjustment		\$37,933		\$43,282		\$0
h. Differences attributable to FY 2025 change in FTE		\$37,933		\$43,282		\$0
i. Payment for centrally furnished services		\$10,400		\$10,743		\$343
j. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		\$36,107		\$37,246		\$2,669
Subtotal, RMS built-in cost changes						\$13,620
CHANGES	FY 2023 Final		FY 2025 President's Budget		Program Change from FY 2023 Final	
	No.	Amount	No.	Amount	No.	Amount
B. Program:						
1. Research Project Grants:						
a. Noncompeting	3,539	\$1,582,751	3,720	\$1,669,776	181	\$87,025
b. Competing	1,150	\$481,763	938	\$393,124	-212	-\$88,639
c. SBIR/STTR	168	\$106,622	167	\$105,780	-1	-\$842
Subtotal, RPGs	4,857	\$2,171,136	4,825	\$2,168,680	-32	-\$2,456
2. Research Centers	176	\$469,121	169	\$459,742	-7	-\$9,380
3. Other Research	517	\$217,162	398	\$207,728	-119	-\$9,433
4. Research Training	5,233	\$270,413	5,501	\$287,065	268	\$16,652
5. Research and development contracts	17	\$23,530	22	\$30,823	5	\$7,293
Subtotal, Extramural		\$3,151,362		\$3,154,038		\$2,676
6. Intramural Research	0	\$3,863	0	\$4,066	0	-\$75
7. Research Management and Support	189	\$84,454	219	\$91,271	30	-\$6,804
8. Construction		\$0		\$0		\$0
9. Buildings and Facilities		\$0		\$0		\$0
Subtotal, program changes						-\$4,203
Total built-in and program changes	189	\$3,239,679	219	\$3,249,375	30	\$9,696

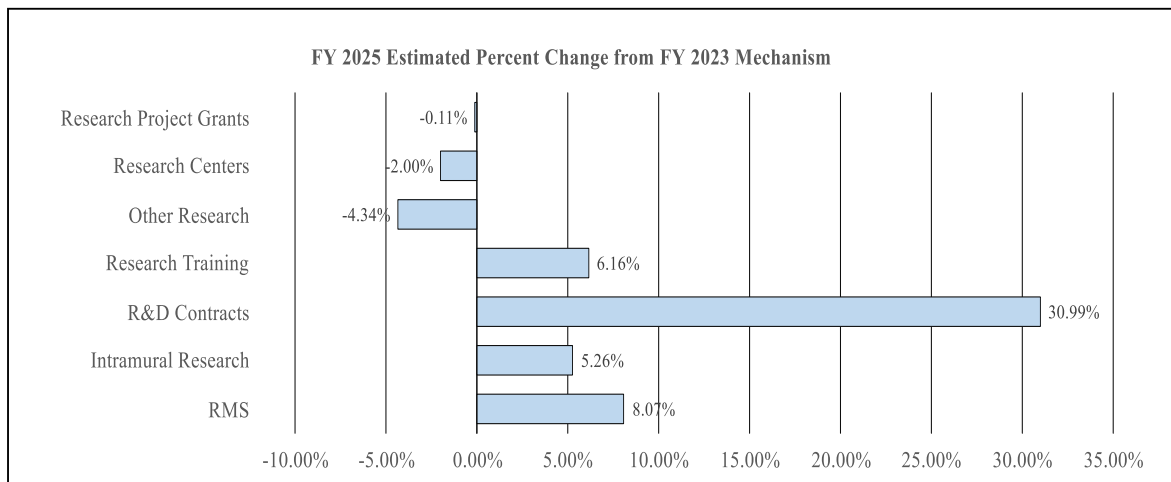
History of Budget Authority and FTEs:



Distribution by Mechanism:



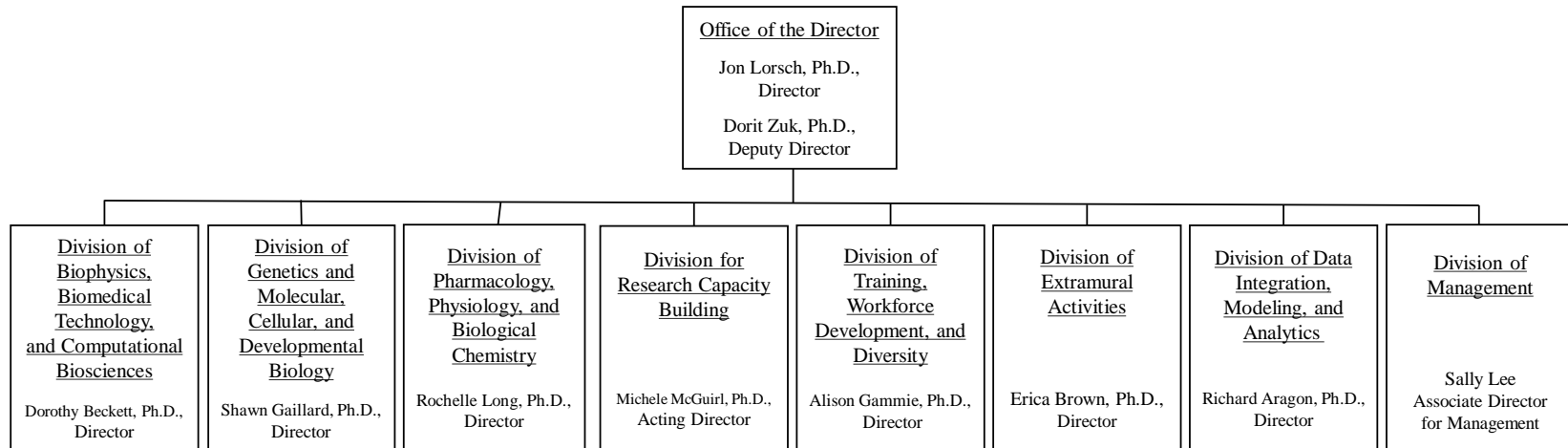
Change by Selected Mechanisms:



ORGANIZATION CHART

National Institutes of Health
National Institute of General Medical Sciences

Organizational Chart



BUDGET AUTHORITY BY ACTIVITY TABLE

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Budget Authority by Activity *
(Dollars in Thousands)

	FY 2023 Final		FY 2024 CR		FY 2025 President's Budget		FY 2025 +/- FY 2023 Final	
	FTE	Amount	FTE	Amount	FTE	Amount	FTE	Amount
Extramural Research								
Detail								
Biophysics, Biomedical Technology, and Computational Biosciences		\$633,400		\$632,424		\$633,938		\$538
Genetics and Molecular, Cellular, and Developmental Biology		\$954,914		\$953,443		\$955,725		\$811
Pharmacology, Physiology and Biological Chemistry		\$655,476		\$654,466		\$656,032		\$557
Training, Workforce Development and Diversity		\$362,819		\$362,260		\$363,127		\$308
Division for Research Capacity Building		\$544,753		\$543,914		\$545,216		\$463
<i>(Institutional Development Award (IDeA))</i>		<i>(\$425,956)</i>		<i>(\$425,956)</i>		<i>(\$427,231)</i>		<i>(\$1,275)</i>
Subtotal, Extramural		\$3,151,362		\$3,146,507		\$3,154,038		\$2,676
Intramural Research	0	\$3,863	0	\$3,963	0	\$4,066	0	\$203
Research Management & Support	189	\$84,454	219	\$89,209	219	\$91,271	30	\$6,817
TOTAL	189	\$3,239,679	219	\$3,239,679	219	\$3,249,375	30	\$9,696

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

National Institute on General Medical Sciences

Authorizing Legislation: Section 301 and Title IV of the Public Health Service Act, as amended.

Budget Authority (BA):

	<u>FY 2023 Final</u>	<u>FY 2024 CR</u>	<u>FY 2025 President's Budget</u>	<u>FY 2025 +/- FY 2023</u>
BA	\$3,239,679,000	\$3,239,679,000	\$3,249,375,000	+9,696,000
FTE	189	219	219	30

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

Overall Budget Policy: The FY 2025 President’s Budget request for the National Institute of General Medical Sciences (NIGMS) is \$3,249.4 million, an increase of \$9.7 million or 0.3 percent compared with the FY 2023 Final level. This budget includes \$5.0 million to maintain the expansion of NIGMS programs related to research into issues of health disparities.

Program Descriptions

Genetics and Molecular, Cellular, and Developmental Biology (GMCDB)

The GMCDB division supports research to understand the structure and function of cells and cellular components, as well as the cellular and molecular mechanisms that underlie inheritance, gene expression, and development. From studies in bacteria and yeast to studies of human genes and cells, the results of this research form the foundation for advances in diagnosing, preventing, and treating a wide variety of diseases. For example, in FY 2023, GMCDB funded multiple awards examining the relationship between the microbiome and human health. Researchers found that humans residing in rural areas had significantly more gut microbiota diversity compared to urban residents, with parallels to the gut bacterial lineages of rural and urban wildlife. These findings provide insight on how differences in environment can translate into changes in symbiotic bacteria, which can have downstream implications for human health. Another GMCDB-supported investigator discovered bacteria residing in the human gut produce molecules called sphingolipids which have beneficial effects for human health. The metabolism of these sphingolipids can decrease excess fat in the liver, and when taken up by the liver, can help prevent fatty liver disease in situations where it might normally occur. These discoveries demonstrate how an understanding of basic biology, such as that of the bacteria that live within us, can lay the foundation for unexpected insights and improvements in human health.

Budget Policy: The FY 2025 President’s Budget request for the GMCDB program is \$955.7 million, an increase of \$0.8 million or 0.1 percent compared to the FY 2023 Final level. GMCDB expenditures will support individual investigators seeking fundamental knowledge about biological processes. GMCDB will also continue its support for collaborative research on

cellular, molecular, and genomic studies, as well as research into specific genetic variants within complex disorders.

Pharmacology, Physiology, and Biological Chemistry (PPBC)

The PPBC division supports a broad spectrum of research aimed at improving the molecular-level understanding of fundamental biological processes and identifying approaches to modify, control, or use those processes.

Research supported by the division takes a multifaceted approach to problems in pharmacology, physiology, and biological chemistry that are basic in nature. Focuses of this research include mechanisms underlying responses to drugs, new methods, and targets for drug discovery and production; an enhanced understanding of biological catalysis; an improved understanding of drug action and of anesthesia; and knowledge of metabolic regulation and fundamental chemical/biochemical processes. The division supports research approaches that are state-of-the-art and employs optimal research organisms for the problems being addressed. Work supported by PPBC also applies biological, engineering, and data science approaches to clinical issues in sepsis, traumatic injury, and critical illness. In FY 2023, PPBC announced the development of a new branch and re-naming of existing branches to effectively manage its portfolio, particularly in the clinical sciences. The three branches are Physiology and Clinical Sciences, Biochemistry and Molecular Pharmacology, and Chemistry and Chemical Biology.

PPBC continues to support research initiatives centering on the discovery of new information and creating resources that can be used experimentally to predict the trajectory and resolution of sepsis and related critical illnesses. For example, PPBC recently completed its Exploring the Scientific Value of Existing or New Sepsis Human Biospecimen Collections (PAR-21-077) Program, which aimed to promote the optimal use, testing, and sharing of patient-derived materials and to establish guidance on the best practices for collecting, utilizing, and analyzing human biospecimens to maximize their value for the sepsis research community. To initiate cross-collaboration, program grantees held a scientific meeting to discuss best practices. The discussion will be compiled into a report and made available to the scientific community.

Building on its collaborative activity, PPBC recently partnered with the National Heart, Lung, and Blood Institute (NHLBI) to jointly develop the Acute Respiratory Distress Syndrome (ARDS), Pneumonia, and Sepsis Phenotyping (APS) Consortium (RFA-HL-23-001, RFA-HL-23-002). In April 2023, NIGMS and NHLBI made APS Consortium awards to six clinical centers and one coordinating center. These six-year grants will support an observational study to examine the heterogeneity and interconversion between related critical illness syndromes and will bank biospecimens and share data to enable future scientific progress towards understanding the mechanistic basis of the development, progression, treatment, and recovery from these disorders.

Budget Policy: The FY 2025 President's Budget request for the PPBC program is \$656.0 million, an increase of \$0.6 million or 0.1 percent compared to the FY 2023 Final level. PPBC investments will emphasize the support of investigator-initiated research grants related to basic pharmacology, biochemistry, and chemistry that inform knowledge of how small molecules influence human health. Additionally, the division supports clinical research about fundamental

health and disorders that affect multiple organ systems, and partners with others to accomplish specific objectives including in critical illness and sepsis.

Biophysics, Biomedical Technology, and Computational Biosciences (BBCB)

The BBCB division advances foundational biomedical research by supporting the development and dissemination of cutting-edge technologies and providing these technologies to the research community through user resources. BBCB programs also support the development of new computational and data science tools for the biosciences, including artificial intelligence and machine learning (AI/ML) approaches, and the application of cutting-edge biophysical and computational methods and techniques to decipher the mechanisms that govern biological processes. Through the NIH-wide Knowledgebase and Data Repositories, the division funds resources that provide the biomedical community access to reliable “big data” that are foundational to modern research. The division also advances the science of infectious disease modeling and prediction and mentors the next generation of disease modeling scientists through its Modeling of Infectious Disease Agent Study (MIDAS) program. Notable research funded by the division includes the application of AI and robotics to design novel polymer materials that stabilize proteins used to treat conditions such as spinal cord injuries, as well as a novel type of microscopy that allows simultaneous detection of the locations of up to 20 different intracellular proteins in a single image.

In FY 2023, the division continued to strengthen research capacity building by supporting access to cutting-edge technologies. For example, BBCB continued its leadership role with the three NIH Common Fund National Centers for Cryoelectron Microscopy (CryoEM) that provide nationwide access to cryoEM technology and increase the number of researchers with cryoEM expertise. BBCB also developed a new funding opportunity to transfer the National CryoEM Centers program to NIGMS in FY 2024. In partnership with the National Eye Institute (NEI), BBCB serves as co-lead for the NIH Common Fund’s Cryoelectron Tomography (CryoET) program, an initiative that provides users with access to instrumentation for high-resolution CryoET data and specimen preparation and cross-training in CryoET methods. BBCB currently supports four of these CryoET centers. The division also oversees the

Supporting Dissemination and Commercialization of Novel Technologies

The support of technological innovation is essential to the NIGMS mission, as is paving a path for investigators to access and use innovative technologies. NIGMS therefore supports the development and dissemination of innovative biomedical technologies and facilitation of entrepreneurship for investigators and small businesses through three different funding mechanisms.

Newly administered by NIGMS, the Research Evaluation and Commercialization Hubs (REACH) program supports early-stage innovation by funding the creation of academic entrepreneurship hubs. These hubs focus on bringing basic science discoveries to market by providing entrepreneurial training for innovators, feedback from experts, funding for early-stage studies, and project management support.

Similarly, the IDeA Regional Entrepreneurship Development (I-RED) program funds small businesses in IDeA-eligible states to develop educational products that promote entrepreneurship. Use of these products builds biomedical researchers' and students' entrepreneurial skills, which are important for translating scientific discoveries and innovative technologies into commercial products.

The Biomedical Technology Optimization and Dissemination (BTOD) Centers support technology development with the goal of optimizing state-of-the-art, late-stage technologies and disseminating them for broad use. Different components of BTOD projects focus on optimizing technological uses, serving as challenging test beds for them, and disseminating them to the broader research community through training, publications, seminars, and commercialization.

Biomedical Technology, Optimization, and Dissemination (BTOD) Centers program (see portrait on previous page). BBCB led development of the Trans-NIH UNITE Initiative's Instrumentation for Resource Limited Institutions (RLI-S10) program, which builds research and educational capacity at institutions that receive limited NIH funding by providing access to modern instruments. The division collaborates with the NIH Office of Research Infrastructure Programs (ORIP) to fund acquisition of state-of-the-art research instruments through the S10 Instrumentation Program and equipment to enhance operations through the R24 Equipment

Going forward, the BBCB Division will continue to advance the NIGMS mission to support foundational biomedical research. The Common Fund CryoET program is scheduled to end in 2026 and BBCB will participate in developing a new program to continue support of these critical user Centers. The division will also be updating funding opportunities to continue its support of both early-stage technology development and resources to provide the biomedical research community with access to the mature technologies that underpin foundational biomedical research.

Budget Policy: The FY 2025 President's Budget request for the BBCB program is \$633.9 million, an increase of \$0.5 million or 0.1 percent compared to the FY 2023 Final level. BBCB will continue to fund investigator-initiated research to unravel the mechanisms that govern biological processes and develop novel methods, instruments, and computational approaches to advance biomedical discovery. The division will also maintain support for resources that facilitate research by the broad biomedical research community.

Division of Training, Workforce Development, and Diversity (TWD)

The TWD division supports programs that foster the development of a strong and diverse biomedical research workforce. The division funds research training, education, and career development activities through a variety of programs across all educational and career stages (Figure 4).

In addition to these training programs, TWD provides support for research training conferences, and social and behavioral research programs. These activities are meant to: 1) help foster an understanding of factors that promote biomedical research careers (Research on Interventions [PAR-21-269]); and 2) provide scientific analysis of important aspects of the biomedical research enterprise, along with efforts to foster a diverse, innovative, productive, and efficient scientific workforce (Science of Science program in collaboration with the National Science Foundation [NOT-GM-23-038]).

NIGMS seeks to enhance the diversity of the biomedical research workforce by supporting individuals from a variety of backgrounds at multiple training and career stages in a variety of institutions and educational settings across the country. Collectively, these programs are designed to ensure that future researchers are drawn from a diverse pool of talented individuals, bringing different perspectives, interests, and experiences to address complex scientific problems. Future efforts include addressing disparities in access to biomedical research training by supporting National Research Service Award training grants for Tribal Organizations and building on the success of the Maximizing Opportunities for Scientific and Academic

Independent Careers (MOSAIC) program to target the critical transition between predoctoral and postdoctoral training via the Advancing Research Careers (ARC) program.

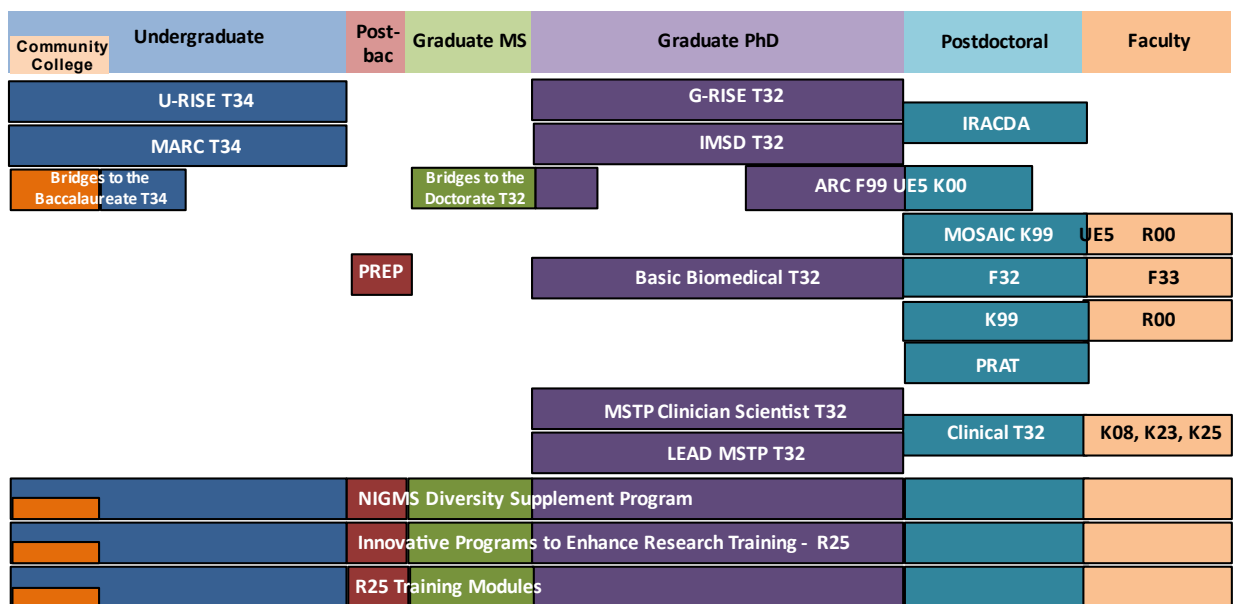


Figure 4. TWD Programs Span All Educational and Career Stages. List of acronyms: IMSD (Initiative for Maximizing Student Development), IRACDA (Institutional Research and Academic Career Development Awards), MARC (Maximizing Access to Research Careers), MOSAIC (Maximizing Opportunities for Scientific and Academic Independent Careers), MSTP (Medical Scientist Training Program), LEAD MSTP (Leading Equity and Diversity in the Medical Scientist Training Program), PREP (Postbaccalaureate Research Education Program), U-RISE & G-RISE (Undergraduate & Graduate Research Training Initiative for Student Enhancement).

Budget Policy: The FY 2025 President’s Budget request for TWD activities is \$363.1 million, an increase of \$0.3 million or 0.1 percent compared to the FY 2023 Final level. TWD will continue to support the research training programs highlighted above and the Individual and Institutional Training awards. The FY 2025 request provides for a 2.0 percent stipend increase and continues the childcare allowance. TWD will continue transitioning a number of previous institutional research education awards to NRSA Institutional Training Grants, thereby increasing the number of individuals supported by this mechanism.

Division for Research Capacity Building (DRCB)

The DRCB division administers programs that support research, research infrastructure improvement, faculty development, and research training. The Institutional Development Award (IDeA) program broadens the geographic distribution of NIH funding for biomedical research in 23 states and Puerto Rico (i.e., states that have historically had low levels of NIH funding). There are five major IDeA funding initiatives: (1) the Centers of Biomedical Research Excellence (COBRE) initiative funds biomedical research centers of excellence in a research area that aligns with the grantee institution’s strategic priorities, with a particular emphasis on developing the independent research careers of early-stage investigators; (2) the IDeA Networks of Biomedical Research Excellence (INBRE) initiative supports statewide networks of higher education institutions, including primarily undergraduate institutions and biomedical research institutions, to expand research capabilities and develop the biomedical research workforce; (3)

Broadening Participation and Increasing Accessibility in Training

Scientists with low vision or blindness and those who are deaf or hard of hearing (DHH) are significantly underrepresented at all career stages of the biomedical research workforce. Thus, NIGMS funds education and training programs that aim to increase accessibility and participation for these scientists.

A Science Education Partnership Award (SEPA) project at Baylor University is introducing high schoolers with vision impairments to the world of chemistry and scientific careers. The project team has made the chemistry lab accessible to students in many ways, including creating 3D-printed tactile graphics, equipping students with Bluetooth glasses that transmit audio input from various devices around the lab, and using a robot that assists with weighing reagents and carrying out chemical reactions. Three chemists with blindness serve as mentors for the project, and the students meet and interact with them as part of the program.

NIGMS funds programs at the National Technical Institute for the Deaf, part of the Rochester Institute of Technology (RIT), and at the University of Rochester Medical Center (URMC) that support students across multiple training stages who are DHH. These programs include mentored research training, community-building activities, communication access services, and presentation skills training specifically designed for students who are DHH. The Undergraduate Research Training Initiative for Student Enhancement (U-RISE) program and the Bridges to the Doctorate Program (B2D) at RIT provide training support for undergraduate students and master's degree students, respectively, as they prepare for doctoral degree programs. The Initiative for Maximizing Student Development (IMSD) program and the Institutional Research and Academic Career Development Awards (IRACDA) program at URMC prepare Ph.D. students and postdoctoral scholars, respectively, for careers in the biomedical research workforce. These programs are committed to lifting barriers and increasing representation of scientists who are DHH.



A student with visual impairments exploring parts of the electron microscope at Baylor University. Credit: Jordan Koone.

the IDeA Networks for Clinical and Translational Research (IDeA-CTR) initiative promotes the advancement of clinical and translational research that address health concerns in IDeA eligible states; (4) the IDeA co-funding initiative aims to increase the pool of NIH-funded investigators supported by all NIH institutes and centers; and (5) the IDeA Regional Entrepreneurship Development (I-RED) (STTR) program supports small business concerns in IDeA states to develop educational products that promote entrepreneurship in academic institutions and biotechnology sectors of the state. These educational products are expected to build the entrepreneurial skills that biomedical researchers and students need to move scientific discoveries and innovative technologies from the lab into commercial products.

DRCB's programs not only build capacity through infrastructure and professional development, but also support a full range of active research from basic to applied to clinical. In FY 2023, for example, researchers at a COBRE focused on Human Movement Variability used biomechanical tests to discover a novel approach to reduce the amount of energy required for walking. While the research was basic in nature, it nonetheless has potential implications for physical therapy patients with impaired walking abilities. At another COBRE focused on Integrated Biomolecular Communication, investigators recreated the deep layers of the epidermis through 3D printing and guided self-reorganization of skin cells, creating an *in vitro* platform for studying the pathogenesis of autoimmune skin disease that could potentially be used for testing preclinical therapies. In addition to Center-based research, DRCB builds research capacity for individual investigator-initiated research through the Support for Research Excellence (SuRE) program.

DRCB also continues to implement plans for strengthening clinical and translational research through its IDeA programs, as is evident from the myriad of progress made in FY 2023. This progress includes the announcement of notices of funding opportunities for Clinical and Translational Research Networks (CTR-Ns) (formerly named the IDeA-CTR program), and the Clinical and Translational Research Development (CTR-D) program (PAR-23-241 and PAR-23-257), to support institutions in building clinical and translational research capacity from the ground up. Furthermore, the IDeA Clinical Research Resource Center (I-CRRC), managed by West Virginia University, was funded to: 1) strengthen communication and develop collaborations between health research institutions in IDeA states and clinical trial sponsors; and 2) develop clinical research coordinators with the knowledge and skills to manage clinical trials and complex observational studies. By increasing the number of trials and observational cohort studies in IDeA states, the I-CRRC aims to increase participation of historically underrepresented populations in clinical trials.

Another DRCB program, the Science Education Partnership Awards (SEPA), supports educational activities that encourage pre-college students (pre-kindergarten to grade 12) from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies in science, technology, engineering, and mathematics (STEM). As part of the NIH UNITE initiative and in recognition of the success of the program, SEPA has recently been expanded to include the participation of 21 additional NIH ICOs.

Budget Policy:

The FY 2025 President’s Budget request for the DRCB program is \$545.2 million, an increase of \$0.5 million or 0.1 percent compared to the FY 2023 Final level. DRCB will support new and

**Supporting Resource-Limited Institutions
Through the SuRE Program**

NIGMS evaluated the longstanding Support for Competitive Research (SCORE) program in 2020 and found that while the program met some objectives, others required substantive changes. As a result, NIGMS launched the Support for Research Excellence (SuRE) program as a successor to SCORE in FY 2022. SuRE supports research capacity building through investigator-initiated research in the biomedical, clinical, behavioral, and social sciences that falls within NIH’s mission areas, with goals of building research capacity and catalyzing the development of a research culture at the institution. The program includes three funding initiatives: SuRE-First supports investigators seeking their first independent research award; SuRE supports all investigators who do not have a major NIH grant; and the SuRE Resource Center provides mentoring and assistance to institutions and investigators to broaden participation in the SuRE program nationwide. Research supported by SuRE must include student participation, thus ensuring that the funding not only supports high-quality research but also the provision of valuable scientific research experiences to students who may not otherwise have access to them.

Since making its first awards in FY 2022, the SuRE program has continued to grow and expand to new institutions. In FY 2023, NIH awarded 150 SuRE awards, including 49 SuRE-First awards. These awards supported 62 unique institutions in FY 2023, including 14 awards to HBCUs. To broaden participation in the program, SuRE includes eligibility requirements determined by data-driven criteria that focus on resource-limited institutions, along with a resource center at the University of Kentucky. The SuRE Resource Center assists these emerging research institutions to compete effectively for and administer SuRE awards. This approach has been extremely successful in expanding the program’s reach to new institutions: as of FY 2023, 39 percent of institutions with SuRE awards had never previously received SCORE funding. The growth and reach of SuRE is a prime example of how data-driven changes have allowed NIGMS to better support investigators and students at resource-limited institutions.

continuing awards in these programs that provide innovative research, research infrastructure enhancement, faculty development, and research training.

Intramural Research

NIGMS has a small but unique intramural research training program, the NIGMS Postdoctoral Research Associate Training (PRAT) Program. The PRAT Program is a competitive three-year postdoctoral fellowship that provides high quality research training in the basic biomedical sciences in intramural research laboratories at other NIH institutes and centers. The program prepares trainees for leadership positions in biomedical careers through mentored laboratory research, networking, and intensive career and leadership development activities. The program places special emphasis on training fellows in all areas that are within the NIGMS mission, including but not limited to biological chemistry, biophysics, bioinformatics, cellular and molecular biology, computational biosciences, developmental biology, genetics, immunology, pharmacology, physiology, and technology development. The PRAT program includes professional development activities tailored to PRAT fellows, such as a monthly seminar series featuring presentations by current PRAT fellows and outside speakers whom the fellows have invited, and training sessions focused on grant-writing, career planning, communications skills, and leadership skills.

Budget Policy: The FY 2025 President's Budget request for NIGMS intramural research is \$4.1 million, an increase of \$0.2 million or 5.3 percent compared to the FY 2023 Final level.

Research Management and Support (RMS)

RMS provides administrative, budgetary, logistical, and scientific support toward the review, award, and monitoring of research grants, training awards, and research and development contracts. RMS funds also support strategic planning, coordination, and evaluation of NIGMS programs; regulatory compliance; and coordination and engagement with other Federal agencies, Congress, and the general public. RMS continues to fund development and enhancements to enterprise information technology (IT) tools which facilitate the review, award, funding, and monitoring of grants and contracts. Utilizing technologies such as Natural Language Processing, AI, and data reporting and visualization toolsets, funds are allocated to enterprise applications that facilitate the overall grants business process lifecycle and improve decision support capability. In addition, RMS has completed the migration of NIGMS' physical servers to the enterprise cloud environment. Migration of the NIGMS infrastructure to the NIH enterprise cloud environment allows for systems to be developed and hosted in an environment that results in reduced resource dependencies, operational and maintenance cost savings, and enhanced cybersecurity and disaster recovery, while ensuring compliance with the Federal Information Technology Acquisition Reform Act.

Budget Policy: The FY 2025 President's Budget request for RMS at NIGMS is \$91.3 million, an increase of \$6.8 million or 8.1 percent compared to the FY 2023 Final level. RMS funds support the operational needs of the Institute, including development and enhancements to investments in information technology. Examples include enhancing cloud presence, utilizing innovative technologies, and optimizing automated decision support capability within NIGMS.

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2016 Rescission	\$2,433,780,000	\$2,439,437,000	\$2,511,431,000	\$2,512,073,000 \$0
2017 ¹ Rescission	\$2,512,437,000	\$2,538,851,000	\$2,633,755,000	\$2,650,838,000 \$0
2018 Rescission	\$2,185,509,000	\$2,713,775,000	\$2,887,194,000	\$2,785,400,000 \$0
2019 Rescission	\$2,572,669,000	\$2,818,667,000	\$2,874,292,000	\$2,872,780,000 \$0
2020 Rescission	\$2,472,838,000	\$3,033,183,000	\$2,969,113,000	\$2,937,218,000 \$0
2021 Rescission	\$2,672,074,000	\$2,972,479,000	\$3,046,962,000	\$2,991,417,000 \$0
2022 Rescission	\$3,096,103,000	\$3,139,656,000	\$3,067,557,000	\$3,092,373,000 \$0
2023 Rescission	\$3,097,557,000	\$3,200,157,000	\$3,218,237,000	\$3,239,679,000 \$0
2024 Rescission	\$3,239,679,000	\$3,154,679,000	\$3,239,679,000	\$3,239,679,000 \$0
2025	\$3,249,375,000			

¹ Budget Estimate to Congress includes mandatory financing.

AUTHORIZING LEGISLATION

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2024 Amount Authorized	FY 2024 CR	2025 Amount Authorized	FY 2025 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	\$3,239,679,000	Indefinite	\$3,249,375,000
National Institute of General Medical Sciences	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				\$3,239,679,000		\$3,249,375,000

AMOUNTS AVAILABLE FOR OBLIGATION

NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences

Amounts Available for Obligation ¹
(Dollars in Thousands)

Source of Funding	FY 2023 Final	FY 2024 CR	FY 2025 President's Budget
Appropriation	\$3,239,679	\$3,239,679	\$3,249,375
Mandatory Appropriation: (non-add)			
<i>Type 1 Diabetes</i>	(\$0)	(\$0)	(\$0)
<i>Other Mandatory financing</i>	(\$0)	(\$0)	(\$0)
Subtotal, adjusted appropriation	\$3,239,679	\$3,239,679	\$3,249,375
OAR HIV/AIDS Transfers	\$0	\$0	\$0
Subtotal, adjusted budget authority	\$3,239,679	\$3,239,679	\$3,249,375
Unobligated balance, start of year	\$0	\$0	\$0
Unobligated balance, end of year (carryover)	\$0	\$0	\$0
Subtotal, adjusted budget authority	\$3,239,679	\$3,239,679	\$3,249,375
Unobligated balance lapsing	-\$15	\$0	\$0
Total obligations	\$3,239,664	\$3,239,679	\$3,249,375

¹ Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:

FY 2023 - \$1,091 FY 2024 - \$5,000 FY 2025 - \$5,000

BUDGET AUTHORITY BY OBJECT CLASS

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Budget Authority by Object Class¹
(Dollars in Thousands)

	FY 2024 CR	FY 2025 President's Budget
Total compensable workyears:		
Full-time equivalent	219	219
Full-time equivalent of overtime and holiday hours	0	0
Average ES salary	\$224	\$230
Average GM/GS grade	13.3	13.3
Average GM/GS salary	\$151	\$155
Average salary, Commissioned Corps (42 U.S.C. 207)	\$139	\$143
Average salary of ungraded positions	\$254	\$261
OBJECT CLASSES	FY 2024 CR	FY 2025 President's Budget
Personnel Compensation		
11.1 Full-Time Permanent	\$27,303	\$27,984
11.3 Other Than Full-Time Permanent	\$2,412	\$2,480
11.5 Other Personnel Compensation	\$1,021	\$1,049
11.7 Military Personnel	\$93	\$143
11.8 Special Personnel Services Payments	\$1,819	\$1,870
11.9 Subtotal Personnel Compensation	\$32,649	\$33,527
12.1 Civilian Personnel Benefits	\$11,544	\$11,907
12.2 Military Personnel Benefits	\$17	\$26
13.0 Benefits to Former Personnel	\$0	\$0
Subtotal Pay Costs	\$44,209	\$45,460
21.0 Travel & Transportation of Persons	\$616	\$366
22.0 Transportation of Things	\$10	\$10
23.1 Rental Payments to GSA	\$0	\$0
23.2 Rental Payments to Others	\$1	\$1
23.3 Communications, Utilities & Misc. Charges	\$18	\$18
24.0 Printing & Reproduction	\$0	\$0
25.1 Consulting Services	\$13,655	\$14,063
25.2 Other Services	\$14,292	\$14,572
25.3 Purchase of Goods and Services from Government Accounts	\$82,345	\$82,745
25.4 Operation & Maintenance of Facilities	\$26	\$26
25.5 R&D Contracts	\$1,807	\$1,807
25.6 Medical Care	\$0	\$0
25.7 Operation & Maintenance of Equipment	\$586	\$586
25.8 Subsistence & Support of Persons	\$0	\$0
25.0 Subtotal Other Contractual Services	\$112,711	\$113,800
26.0 Supplies & Materials	\$13	\$13
31.0 Equipment	\$80	\$81
32.0 Land and Structures	\$0	\$0
33.0 Investments & Loans	\$0	\$0
41.0 Grants, Subsidies & Contributions	\$1,669,540	\$1,071,143
42.0 Insurance Claims & Indemnities	\$0	\$0
43.0 Interest & Dividends	\$0	\$0
44.0 Refunds	\$0	\$0
Subtotal Non-Pay Costs	\$1,782,988	\$1,185,433
Total Budget Authority by Object Class	\$1,827,197	\$1,230,893

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

NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences

Salaries and Expenses
(Dollars in Thousands)

Object Classes	FY 2024 CR	FY 2025 President's Budget
<u>Personnel Compensation</u>		
Full-Time Permanent (11.1)	\$27,303	\$27,984
Other Than Full-Time Permanent (11.3)	\$2,412	\$2,480
Other Personnel Compensation (11.5)	\$1,021	\$1,049
Military Personnel (11.7)	\$93	\$143
Special Personnel Services Payments (11.8)	\$1,819	\$1,870
Subtotal, Personnel Compensation (11.9)	\$32,649	\$33,527
Civilian Personnel Benefits (12.1)	\$11,544	\$11,907
Military Personnel Benefits (12.2)	\$17	\$26
Benefits to Former Personnel (13.0)	\$0	\$0
Subtotal Pay Costs	\$44,209	\$45,460
Travel & Transportation of Persons (21.0)	\$616	\$366
Transportation of Things (22.0)	\$10	\$10
Rental Payments to Others (23.2)	\$1	\$1
Communications, Utilities & Misc. Charges (23.3)	\$18	\$18
Printing & Reproduction (24.0)	\$0	\$0
<u>Other Contractual Services</u>		
Consultant Services (25.1)	\$13,590	\$13,998
Other Services (25.2)	\$14,292	\$14,572
Purchase of Goods and Services from Government Accounts (25.3)	\$59,244	\$59,585
Operation & Maintenance of Facilities (25.4)	\$26	\$26
Operation & Maintenance of Equipment (25.7)	\$586	\$586
Subsistence & Support of Persons (25.8)	\$0	\$0
Subtotal Other Contractual Services	\$87,739	\$88,767
Supplies & Materials (26.0)	\$13	\$13
Subtotal Non-Pay Costs	\$88,396	\$89,175
Total Administrative Costs	\$132,605	\$134,635

DETAIL OF FULL-TIME EQUIVALENT EMPLOYMENT (FTE)

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Detail of Full-Time Equivalent Employment (FTE)

Office	FY 2023 Final			FY 2024 CR			FY 2025 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Extramural Activities									
Direct:	67	-	67	77	1	78	77	1	78
Total:	67	-	67	77	1	78	77	1	78
Office of the Director									
Direct:	6	-	6	7	-	7	7	-	7
Total:	6	-	6	7	-	7	7	-	7
Division of Data, Integration, Modeling and Analytics									
Direct:	9	-	9	12	-	12	12	-	12
Total:	9	-	9	12	-	12	12	-	12
Division of Management									
Direct:	43	-	43	47	-	47	47	-	47
Total:	43	-	43	47	-	47	47	-	47
Division of Genetics and Molecular, Cellular, and Developmental Biology									
Direct:	15	-	15	18	-	18	18	-	18
Total:	15	-	15	18	-	18	18	-	18
Division of Pharmacology, Physiology and Biological Chemistry									
Direct:	13	-	13	15	-	15	15	-	15
Total:	13	-	13	15	-	15	15	-	15
Division of Biophysics, Biomedical Technology, and Computational Biosciences									
Direct:	11	-	11	14	-	14	14	-	14
Total:	11	-	11	14	-	14	14	-	14
Division of Training, Workforce Development and Diversity									
Direct:	12	-	12	14	-	14	14	-	14
Total:	12	-	12	14	-	14	14	-	14
Division for Research Capacity Building									
Direct:	13	-	13	14	-	14	14	-	14
Total:	13	-	13	14	-	14	14	-	14
Total	189	-	189	218	1	219	218	1	219
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								
2021	13.1								
2022	13.2								
2023	13.3								
2024	13.3								
2025	13.3								

DETAIL OF POSITIONS

**NATIONAL INSTITUTES OF HEALTH
National Institute of General Medical Sciences**

Detail of Positions ¹

GRADE	FY 2023 Final	FY 2024 CR	FY 2025 President's Budget
Total, ES Positions	1	1	1
Total, ES Salary	\$212,100	\$223,659	\$229,922
General Schedule			
GM/GS-15	28	30	30
GM/GS-14	74	84	84
GM/GS-13	57	60	60
GS-12	7	11	11
GS-11	3	4	4
GS-10	0	0	0
GS-9	5	4	4
GS-8	5	5	5
GS-7	4	4	4
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	183	202	202
Commissioned Corps (42 U.S.C. 207)			
Assistant Surgeon General	0	0	0
Director Grade	0	1	1
Senior Grade	0	0	0
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Junior Assistant	0	0	0
Subtotal	0	1	1
Ungraded	20	20	20
Total permanent positions	184	204	204
Total positions, end of year	204	224	224
Total full-time equivalent (FTE) employment, end of year	189	219	219
Average ES salary	\$212,100	\$223,659	\$229,922
Average GM/GS grade	13.3	13.3	13.3
Average GM/GS salary	\$143,275	\$151,083	\$155,314

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