Fogarty International Center

CONGRESSIONAL JUSTIFICATION
FY 2022

Department of Health and Human Services
National Institutes of Health

NIH Fogarty International Center
Advancing Science for Global Health

DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

Fogarty International Center (FIC)

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Director's Overview

Roger I. Glass, M.D., Ph.D.
Director of the Fogarty International Center and Associate Director for International Research

The Fogarty International Center advances the mission of the National Institutes of Health (NIH) by: (1) training the next generation of scientists to address global health needs; (2) supporting global health research conducted collaboratively by U.S. and international investigators; and (3) facilitating partnerships between health research institutions in the United States and abroad. Since its establishment more than 50 years ago, Fogarty has identified scientific gaps and opportunities in global health and catalyzed science on cross-cutting issues that complement and support the work of other NIH Institutes, Centers, and Offices. Fogarty serves as a focal point for global health and international activities across NIH, helping advance global health research agendas, develop trans-NIH cooperative activities with foreign partners, and represent the NIH international research agenda within the U.S. Government and with foreign governments and organizations.

As the COVID-19 pandemic demonstrates, diseases know no borders and the health of Americans is intertwined with that of populations around the world. We must ensure that scientists worldwide are prepared to work together to combat existing and future threats that affect us all. Our programs strengthen the scientific workforce and develop global research networks that can respond quickly to urgent, pressing health needs. For example, Fogarty support helps to equip scientists in low- and middle-income countries (LMICs) with the necessary skills to study emerging infectious diseases at their point of origin, helping prevent or limit their spread to other countries.

Scientific breakthroughs from global health research also benefit Americans suffering from the same diseases or health conditions. Fogarty's cross-cutting mission enables us to support research and research training in LMICs that can improve health across different diseases, including HIV/AIDS, brain disorders, cancer, stroke, and cardiovascular disease. We invest in the development of technologies to improve health in low-resource settings and support scientific approaches to enable better translation of evidence into practice. We also develop scientific networks that tackle a wide range of communicable, non-communicable, and environmental health threats.

Fogarty investments also extend the reach and competitiveness of U.S. universities. Currently, Fogarty supports nearly 500 research and training projects involving more than 100 U.S. universities. Two-thirds of Fogarty grants are awarded to U.S. institutions, and nearly all Fogarty awards involve U.S. researchers. Through these awards, U.S. institutions partner with research institutions in LMICs to build long-term relationships that provide scientific and training opportunities for both partners. Fogarty-facilitated collaboration with international researchers helps American scientists remain globally competitive and be at the forefront of scientific discovery.

Science in the Service of Society

Our vision is a world in which the frontiers of health research extend across the globe and advances in science are implemented to reduce the burden of disease, promote health, and extend longevity for all people. Our programs work towards this vision, empowering scientists in the United States and LMICs to discover solutions for complex global health challenges that are designed to benefit vulnerable populations around the globe.

Responding to urgent and pressing health needs

Fogarty supports a robust network of health researchers across the world who are trained to respond to a broad range of urgent health needs, including emerging infectious disease, the rising threat of non-communicable diseases (NCDs), and environmental health challenges.

COVID-19 Response

When the COVID-19 pandemic began, Fogarty's network of global health researchers rapidly mobilized to reduce the impact of this deadly disease on the world's most vulnerable people. Our in-house team of disease modelers is studying transmission patterns of SARS-CoV-2, its genomic epidemiology, the effectiveness of interventions, and global COVID-19 mortality rates, among other aspects of the pandemic.

Fogarty grantees and trainees around the world, many of whom are now in leadership roles in their countries, are working closely with policymakers to contain and slow the spread of COVID. When Cambodia identified its first patient with COVID-19 in late January, former Fogarty Scholar Dr. Jessica Manning quickly sequenced the genome of a virus sample and posted it on a global collaboration database. This made her lab the first from a developing country to contribute to the global knowledge base. The collective effort provides insights for vaccine development and helps track the transmission, mutation, and spread of the novel coronavirus.

Fogarty grantee and leading genomics expert Dr. Christian Happi sequenced the whole genome of the first COVID-19 case in Nigeria within 48 hours of receiving samples, drawing from previous Fogarty-supported work. This provided valuable information on the origin of imported cases of the disease, which helped guide travel policies.

The pandemic is causing serious mental health issues, especially for children and adolescents who have less experience dealing with traumatic events. Fogarty Fellow Dr. Dang Hoang Minh is conducting research in Vietnam on the mental health impacts of the pandemic on parents and children, while also developing materials to help families cope and develop resilience to future emergencies and natural disasters.

Pressing Global Health Needs

Fogarty programs also train researchers to prepare for future epidemics and pandemics. The **Global Infectious Diseases Research Training** program provides training in a broad range of disciplines needed to combat current and future outbreaks, such as epidemiology, bioinformatics, molecular biology, genomics, and ecological modeling. The **Emerging Epidemic Virus**

Research Training for West African Countries with Widespread Transmission of Ebola program helps build scientific capacity in the three countries most directly impacted by the 2014-2016 Ebola pandemic.

Fogarty trainees are also responding to the alarming increase in the prevalence of NCDs worldwide. Conditions such as heart disease, diabetes, cancer, mental health, and brain disorders account for more than half of the overall burden of disease in LMICs, claiming 32 million lives each year. Through programs like Fogarty's **Chronic, Non-Communicable Diseases and Disorders Across the Lifespan**, grantees are driving important NCD research forward on questions with relevance globally and locally. For example, grantee Dr. Michèle Ramsay from the University of the Witwatersrand in South Africa is leading one of the world's largest research projects studying genetic and environmental factors related to diabetes, heart disease, and stroke – conditions affecting an increasing number of people in South Africa as well as in the United States.

Globally, more than 20 percent of all deaths are linked to the environment – and this percentage may grow with increasing impacts from wildfires, hurricanes, and other natural disasters. Fogarty's **Global Environmental and Occupational Health (GEOHealth) program** responds to environmental and occupational threats by supporting regional hubs for collaborative research and training. The India GEOHealth hub, a collaboration between the Harvard T.H. Chan School of Public Health and the Centre for Chronic Disease Control of India, is addressing the impact of air pollution exposures in large cities on cardio-metabolic health, a key problem for urban centers around the world.

Closing the gap in health disparities

Fogarty's programs are designed to improve the health of some of the most vulnerable and disadvantaged populations around the world. There are vast differences in health outcomes, such as life expectancy and child mortality, between high-income countries and LMICs. These inequities also exist within countries. Fogarty programs enable researchers to explore these disparities in their research and the structure of Fogarty training programs can help address disparities in the scientific workforce by providing research and training opportunities to investigators in low-resource settings. Furthermore, research exploring disparities abroad can also be relevant to achieving health equity in the United States as effective interventions and strategies may be harnessed and adapted to the U.S. context.

Stigma can contribute to inequities in health by hindering how services are sought, accessed, and delivered. As such, the **Reducing Stigma to Improve HIV/AIDS Prevention, Treatment, and Care in LMICs** program has the potential to address health disparities affecting people across the globe living with HIV. Fogarty will also support a short-term **Stigma Research Training Institute** in 2021 for scientists from the United States and LMICs seeking to address health disparities through targeted, transdisciplinary stigma-reduction research.

Diverse perspectives are essential to advancing science, especially in the global health arena where there are numerous differences in regional, gender, and cultural experiences. Accordingly, Fogarty programs increase access to research opportunities for scientists from low-resource

settings. The **Medical Education Partnership Initiative (MEPI) Junior Faculty Research Training** program strengthens the capacity of researchers to lead research efforts in their countries and the **Emerging Global Leader Award** supports research scientists from LMICs, helping fill gaps in the career development pipeline of their countries. In partnership with the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the **Health-Professional Education Partnership Initiative (HEPI)** strengthens the capacity of medical and nursing schools to train and retain health care workers in Africa, especially in rural areas, and introduces research to clinicians early in their careers.

Developing the foundation for future advances in global health research

Fogarty continues to build research capacity and train the next generation of global health leaders, laying the groundwork for future discoveries and advancements in global health. Notably, former Fogarty trainees are in governmental leadership roles in their countries, such as Uganda's Minister of Science, Technology, and Innovation, Dr. Elioda Tumwesigye, who trained as a medical doctor before advancing his studies in epidemiology and biostatistics in the United States with Fogarty support. Upon returning to Uganda, he established an HIV research center in a rural area, which is now one of the premier research centers in the country, providing care to thousands of HIV patients.

Fogarty-supported trainees also go on to lead NIH-funded research projects, contributing to cutting edge advances in globally relevant science. The **Global Health Fellows and Scholars** program supports U.S. university consortia that provide collaborative, mentored global health research training opportunities in LMICs. One former Fellow, Dr. Lisa Bebell, conducted research in Uganda and South Africa on the health of women living with HIV. Her large research projects produced a substantial amount of data on how HIV infection affects women's health over time and their risks of developing other infections after pregnancy. These experiences helped her successfully compete for a five-year NIH research career development grant from the National Institute of Allergy and Infectious Diseases (NIAID) at her new institutions, Harvard Medical School and Massachusetts General Hospital.

Fogarty programs support partnerships between U.S. and LMIC institutions for research training, helping build a critical mass of scientists who go on to make significant scientific advances, informing health policies and clinical practices. Areas of programmatic focus include HIV/AIDS, global infectious diseases, injury and trauma, and research ethics, among other topics.

Newer activities continue to make foundational investments supporting future global health leaders. The **African Postdoctoral Training Initiative (APTI)** enables African scientists to train for two years with an NIH intramural investigator, after which they return to their home countries to lead local research efforts.

Fogarty also strengthens the collaborative research networks necessary for future advances in global health through programs such as the **H3Africa Global Health Bioinformatics Research Training Program** and an award to the **African Forum for Research and Education in Health (AFREhealth)**. AFREhealth is a leadership and convening organization that brings academic health research professionals – including doctors, nurses, pharmacists, lab scientists, and allied health professionals – together to develop and share best practices, innovations, curricula and policy.

Looking ahead

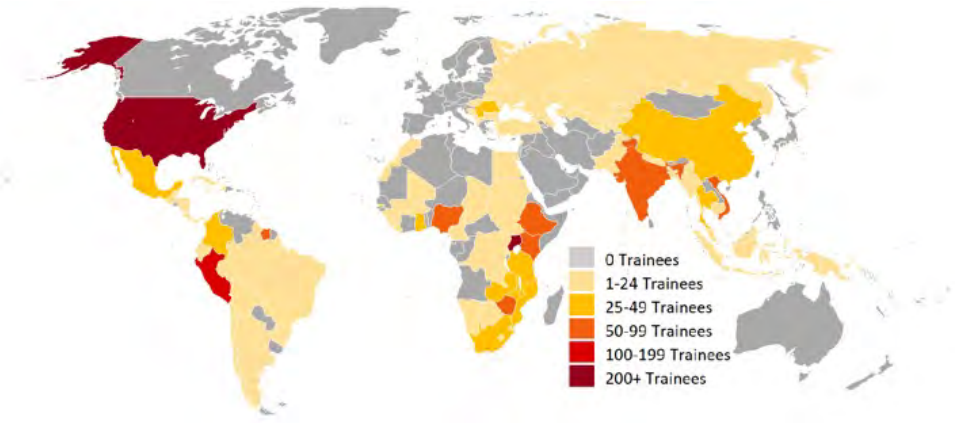
Fogarty will continue to address emerging threats and global health challenges through cross-cutting and multi-disciplinary approaches, harnessing innovation and new technologies, and strengthening research capacity in critical areas. To achieve these goals, we will continue to make the most of research opportunities and talented networks of global scientists.

The **Harnessing Data Science for Health Discovery and Innovation in Africa (DS-I Africa)** program is an NIH Common Fund program launched in fall 2020 aiming to advance data science, catalyze innovation, and spur health discoveries across Africa. The new five-year initiative will leverage data and technology to develop solutions for the continent's most pressing clinical and public health problems. The program is led by Fogarty in partnership with the National Institute of Biomedical Imaging and Bioengineering (NIBIB), the National Institute of Mental Health (NIMH), and the National Library of Medicine (NLM).

The new **HIV-associated Noncommunicable Diseases Research at Low- and Middle-Income Country Institutions** program will stimulate research, strengthen research capacity, and build a network of researchers to study the interplay between HIV and NCDs in LMICs. As the life expectancy of people living with HIV has dramatically increased, so has the prevalence of NCDs among these populations, raising new scientific questions that have global implications. This program will support research teams with diverse expertise, including partnerships between HIV and NCD researchers, who can generate new research questions and determine the feasibility of novel approaches in prevention and treatment.

Overall Budget Policy:
The FY 2022 President's Budget request is $96.3 million, an increase of $12.3 million or 14.7 percent compared with the FY 2021 Enacted level. This increase includes $10.0 million to increase Fogarty's efforts to better understand and address health disparities around the world, including best practices for potential implementation in the United States, and to address disparities in the international scientific workforce. In FY 2022, Fogarty will continue to advance its mission to support and facilitate global health research, build partnerships between health research institutions in the United States and abroad, and train the next generation of scientists to address global health needs within available funding levels.

Fogarty Trainees by Location (FY 2016 - FY 2020)
1,962 long-term trainees



Note: In 2013, Fogarty stopped accepting applications from upper-middle income countries that are part of the G20. These data include long-term trainees who were funded or in training prior to this new policy.

Source: CareerTrac

NIH Fogarty International Center
Advancing Science for Global Health

Overview

The Fogarty International Center is dedicated to advancing the NIH mission by supporting and facilitating global health research conducted by U.S. and international investigators, building partnerships between health research institutions in the United States and abroad, and training the next generation of scientists to address global health needs.

Since 1968, Fogarty has supported innovative programs that train future global health leaders and harness scientific talent around the world to tackle complex health challenges and accelerate discovery. Fogarty invests in people--U.S. and low- and middle-income country (LMIC) scientists who serve on the front lines of the fight against diseases that threaten populations in the United States and around the world. Fogarty also serves as a focal point for international activities at the NIH, helping to advance global health research agendas, develop trans-NIH cooperative activities, establish agreements between NIH and foreign institutions, and represent the NIH international research agenda within the U.S. Government.

Facts and Figures

- More than 6,900 scientists from over 120 countries trained since 1989.
- Fogarty supports about 400 awards each year through its programs with $58 million of Fogarty funding and an additional $51 million of co-funding from 22 other NIH Institutes and Centers.
- Nearly all Fogarty awards involve U.S. researchers from more than 100 U.S. universities.
- 373 active awards (FY 2019)
- 583 principal investigators funded (FY 2017-2019)

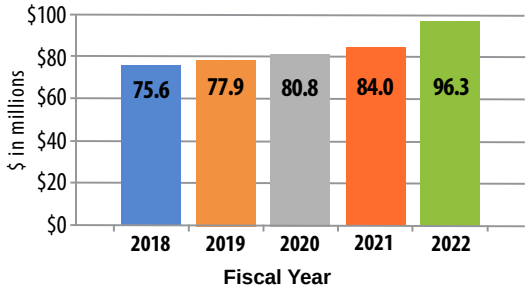
Roger I. Glass, M.D., Ph.D.
Director of the Fogarty International Center and Associate Director for International Research

Dr. Glass received an M.D. from Harvard Medical School, an M.P.H. from the Harvard School of Public Health, and a doctorate from the University of Goteborg in Sweden.

Research and Training Highlights

- Former Fogarty trainees take on leadership positions in their countries, such as Uganda's Minister of Science and Technology, Dr. Elioda Tumwesigye, and former Minister of Health and Director of NIH in Peru, Dr. Patricia Garcia.
- Trainees support ground-breaking research that improves HIV treatment in LMICs and informs treatment protocols in the United States.
- A mobile health app developed by Fogarty grantees for HIV patient care in Uganda was adapted by a U.S. company to help patients adhere to medication regimen for opioid addiction, tuberculosis, and hepatitis C.
- Former Fogarty Fellow helps launch Zambia's first neurology research training program and is now a leading researcher in the field.
- In-house epidemiology team harnesses big data and computational modeling to track COVID-19 and influenza, informing national and international responses to outbreaks.

Funding History



FY 2022 President's Budget request is $96.3 million

Recent Accomplishments

Fogarty grantees conduct global research that benefits Americans

Hydrocephalus is the accumulation of fluid in the brain that is typically treated by the placement of a shunt to drain excess fluid. However, these shunts generally fail within two years, requiring a costly, emergency surgery. Fogarty-supported research in Uganda showed that a novel treatment for hydrocephalus eliminates the need for shunt placement without affecting the neurological development of children. Fogarty grantee Dr. Benjamin Warf of Boston Children's Hospital is helping spread the technique, now being implemented in major pediatric neurosurgery centers across the United States. The innovative treatment results in cost-savings and reduces the morbidity and mortality of children who are no longer dependent on shunts for their lifetimes.

Fogarty trainees are the global health leaders of the future

Fogarty grantees and trainees around the world, many of whom are now in leadership roles in their countries, are working closely with policymakers to contain and slow the spread of COVID-19. When Cambodia identified its first patient with COVID-19 in late January, former Fogarty Scholar Dr. Jessica Manning quickly sequenced the genome of a virus sample and posted it on a global collaboration database. This made her lab the first from a developing country to contribute to the global knowledge base, providing insights for vaccine development and helping track the transmission, mutation, and spread of the novel coronavirus.

Select Current Activities

- **Global Infectious Disease Research Training:** enables institutions in the United States or in LMICs to support current and future collaborative research-related training on infectious diseases, including Zika, Ebola and COVID-19.
- **Mobile Health Technology and Outcomes:** funds research to develop or adapt innovative mobile health (mHealth) technology specifically suited for LMICs that can improve health outcomes. Recent grantees in Africa deployed GPS monitoring systems and other innovations for monitoring and contact tracing during COVID-19.
- **Global Health Program for Fellows and Scholars:** provides mentored research training opportunities and a collaborative research environment for early-stage investigators from the United States and LMICs to enhance their global health research expertise and advance their careers.

Future Initiatives

- **Harnessing Data Science for Health Discovery and Innovation in Africa (DS-I Africa):** NIH Common Fund program that aims to advance data science and catalyze innovation to develop solutions for Africa's most pressing clinical and public health problems.
- **HIV-associated Noncommunicable Diseases (NCDs) Research at LMIC Institutions:** New Fogarty program that will stimulate research, build capacity and study the interplay between HIV and NCDs in LMICs.
- **Responding to COVID-19 and future threats:** Fogarty's in-house epidemiology unit is expanding its use of computational tools, big data, and genomic analysis to study the spread of SARS-COV-2 and guide polices related to our response to it and potential future pandemics.

Major Changes in the Fiscal Year 2022 President's 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 2022 President's Budget request for FIC, which is $96.3 million, an increase of $12.3 million from the FY 2021 Enacted level. FIC will pursue research priorities through strategic investments and careful stewardship of appropriated funds. $10.0 million of the increase will be directed to Health Disparities Research, which will fund research in multiple mechanisms and activities.

Research Project Grants (RPGs) (+$2.0 million, total $14.9 million):
FIC will support a total of 50 Competing Research Project Grant (RPG) awards in FY 2022, an increase of 21 awards and $3.7 million, or 73.4 percent, from the FY 2021 Enacted level. Total RPG awards will increase by $2.0 million, or 15.3 percent. Most of this increase will be for Health Disparities Research.

Research Centers and Other Research (+$9.5 million, total $55.9 million):
Research Center awards will decrease by $0.1 million, or 16.8%. Career awards will increase by $1.3 million, or 16.4%, and Other-Other awards will increase by $8.3 million, or 21.9 percent. Most of the increases for Career awards and Other-Other awards will be for Health Disparities Research.

Research Management and Support (+$0.7 million, total $20.5 million):
Research Management and Support (RMS) will increase $0.7 million, or 3.4 percent.

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Budget Mechanism -Total[1]

(Dollars in Thousands)

MECHANISM	FY 2020 Final		FY 2021 Enacted		FY 2022 President's Budget		FY 2022 +/- FY 2021 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	38	$7,761	41	$7,907	28	$5,332	-13	-$2,576
Administrative Supplements	(13)	1,469	(0)	0	(8)	877	(8)	877
Competing:								
Renewal	0	0	0	0	0	0	0	0
New	30	5,173	29	5,010	50	8,687	21	3,677
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	30	$5,173	29	$5,010	50	$8,687	21	$3,677
Subtotal, RPGs	68	$14,404	70	$12,917	78	$14,896	8	$1,978
SBIR/STTR	0	0	0	0	0	0	0	0
Research Project Grants	68	$14,404	70	$12,917	78	$14,896	8	$1,978
Research Centers:								
Specialized/Comprehensive	0	$700	0	$700	0	$582	0	-$118
Clinical Research	0	0	0	0	0	0	0	0
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	0	$700	0	$700	0	$582	0	-$118
Other Research:								
Research Careers	74	$7,164	80	$7,706	93	$8,973	13	$1,267
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	141	35,611	151	38,025	184	46,346	33	8,321
Other Research	215	$42,775	231	$45,730	277	$55,319	46	$9,589
Total Research Grants	283	$57,878	301	$59,347	355	$70,797	54	$11,449
Ruth L Kirschstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	0	$0	0	$0	0	$0	0	$0
Institutional Awards	0	0	0	0	0	0	0	0
Total Research Training	0	$0	0	$0	0	$0	0	$0
Research & Develop. Contracts	0	$4,282	0	$4,868	0	$5,057	0	$190
(SBIR/STTR) (non-add)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Intramural Research	0	0	0	0	0	0	0	0
Res. Management & Support	59	18,666	61	19,798	61	20,468	0	670
SBIR Admin. (non-add)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, FIC	59	$80,827	61	$84,013	61	$96,322	0	$12,309

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

NATIONAL INSTITUTES OF HEALTH

JOHN E. FOGARTY INTERNATIONAL CENTER

For carrying out the activities of the John E. Fogarty International Center (described in subpart 2 of part E of title IV of the PHS Act), [$84,044,000] $96,322,000.

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Summary of Changes

(Dollars in Thousands)

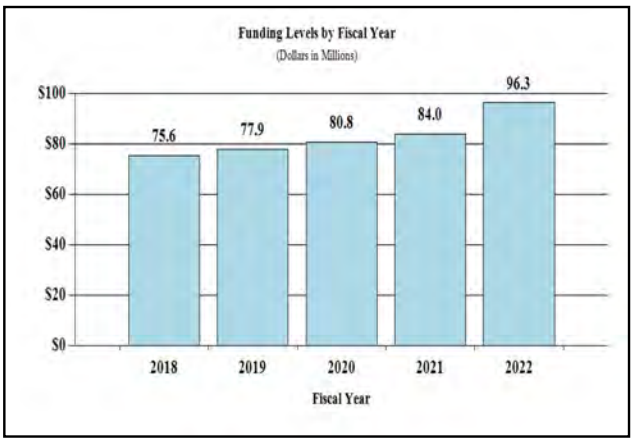
FY 2021 Enacted	$84,013
FY 2022 President's Budget	$96,322
Net change	$12,309

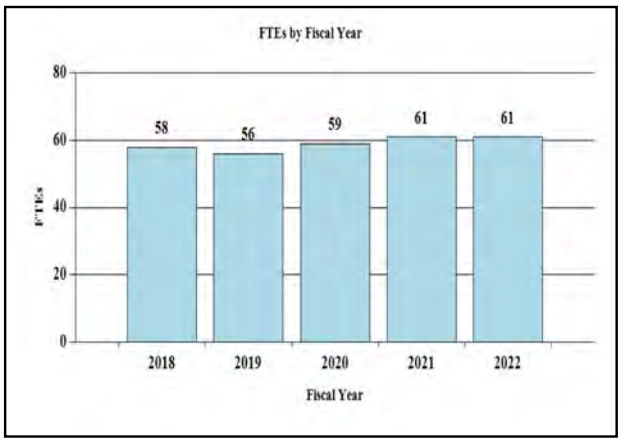
CHANGES	FY2021 Enacted FTEs	FY2021 Enacted Budget Authority	FY 2022 President's Budget FTEs	FY 2022 President's Budget Budget Authority	Built-In Change from FY 2021 Enacted FTEs	Built-In Change from FY 2021 Enacted Budget Authority
A. Built-in:						
1. Intramural Research:						
a. Annualization of January 2021 pay increase & benefits		$0		$0		$0
b. January FY 2022 pay increase & benefits		0		0		0
c. Paid days adjustment		0		0		0
d. Differences attributable to change in FTE		0		0		0
e. Payment for centrally furnished services		0		0		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		0		0		0
Subtotal						$0
2. Research Management and Support:						
a. Annualization of January 2021 pay increase & benefits		$9,263		$9,550		$25
b. January FY 2022 pay increase & benefits		9,263		9,550		262
c. Paid days adjustment		9,263		9,550		0
d. Differences attributable to change in FTE		9,263		9,550		0
e. Payment for centrally furnished services		0		0		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		10,535		10,918		296
Subtotal						$583
Subtotal, Built-in						$583

CHANGES	FY2021 Enacted No.	FY2021 Enacted Amount	FY 2022 President's Budget No.	FY 2022 President's Budget Amount	Program Change from FY 2021 Enacted No.	Program Change from FY 2021 Enacted Amount
B. Program:						
1. Research Project Grants:						
a. Noncompeting	41	$7,907	28	$6,209	-13	-$1,699
b. Competing	29	5,010	50	8,687	21	3,677
c. SBIR/STTR	0	0	0	0	0	0
Subtotal, RPGs	70	$12,917	78	$14,896	8	$1,978
2. Research Centers	0	$700	0	$582	0	-$118
3. Other Research	231	45,730	277	55,319	46	9,589
4. Research Training	0	0	0	0	0	0
5. Research and development contracts	0	4,868	0	5,057	0	190
Subtotal, Extramural		$64,215		$75,854		$11,639
	FTEs		**FTEs**		**FTEs**	
6. Intramural Research	0	$0	0	$0	0	$0
7. Research Management and Support	61	19,798	61	20,468	0	87
8. Construction		0		0		0
9. Buildings and Facilities		0		0		0
Subtotal, Program	61	$84,013	61	$96,322	0	$11,726
Total built-in and program changes						$12,309

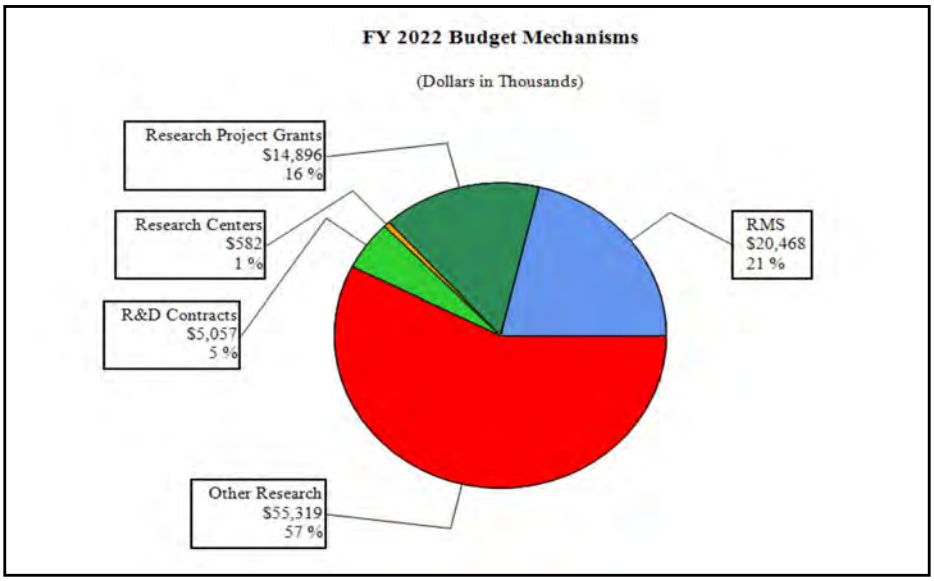
Fiscal Year 2022 Budget Graphs

History of Budget Authority and FTEs:

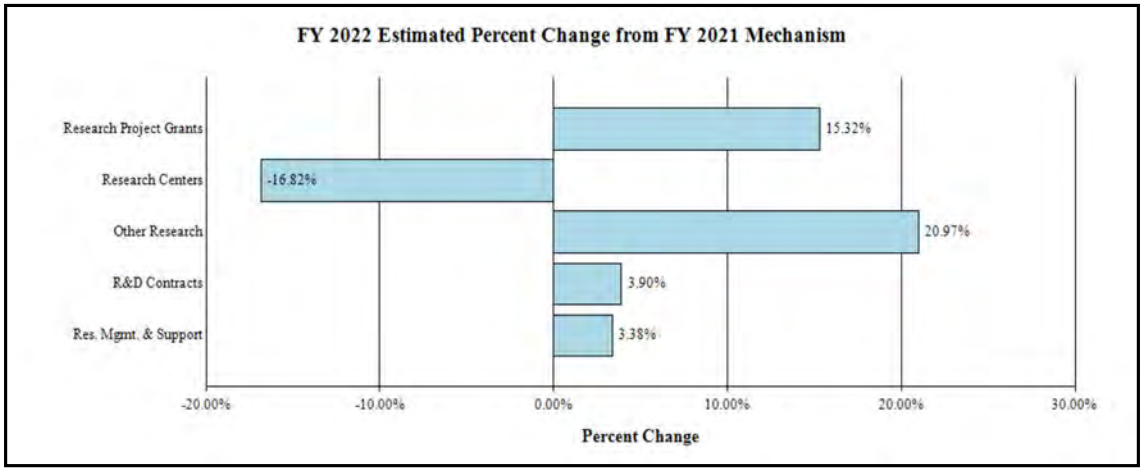




Distribution by Mechanism:



Change by Selected Mechanisms:



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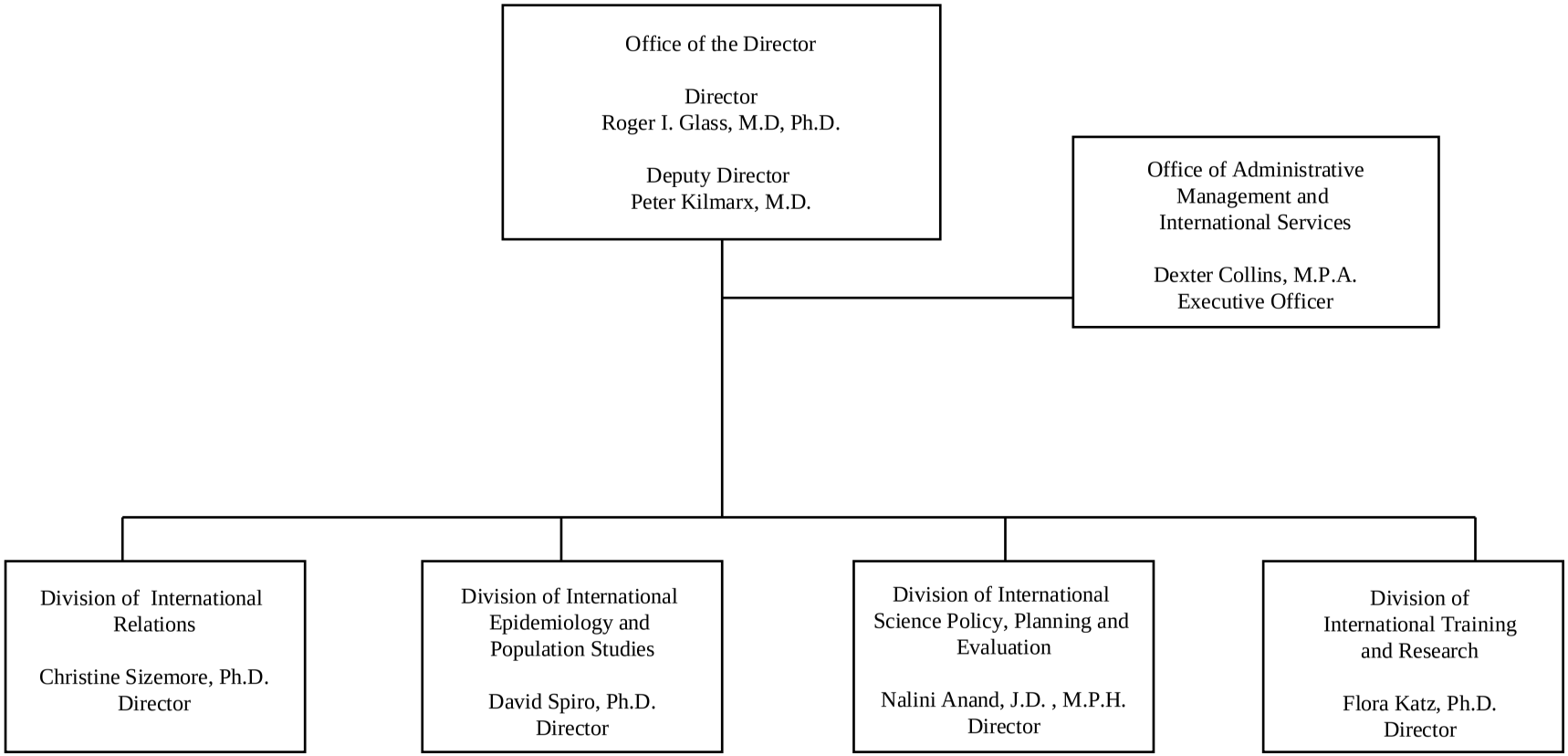
John E. Fogarty International Center



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Fogarty International Center

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

	FY 2020 Final		FY 2021 Enacted		FY 2022 President's Budget		FY 2022 +/- FY 2021 Enacted	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail								
Research Capacity Strengthening		$5,787		$5,978		$7,062		$1,084
Development of Human Resources for Global Health Research		40,704		42,049		49,670		7,621
International Collaborative Research		15,670		16,188		19,122		2,934
Subtotal, Extramural		$62,161		$64,215		$75,854		$11,639
Intramural Research	0	$0	0	$0	0	$0	0	$0
Research Management & Support	59	$18,666	61	$19,798	61	$20,468	0	$670
TOTAL	59	$80,827	61	$84,013	61	$96,322	0	$12,309

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

Justification of Budget Request

Fogarty International Center

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

Budget Authority (BA):

	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
BA	$80,827,000	$84,013,000	$96,322,000	$12,309,000
FTE	59	61	61	0

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

Program Descriptions and Accomplishments

Research Capacity Strengthening: The development of effective measures to address shared health challenges requires U.S. and LMIC institutions that can conduct robust research and train the next generation of scientists to solve complex problems. These institutions can stimulate innovative and multidisciplinary research, generate effective and implementable solutions, and build a nimble and networked research workforce. Given that important scientific findings can come from anywhere in the world, Fogarty's research capacity strengthening approach provides LMIC institutions and researchers with the tools to develop strong, sustainable research environments that contribute to the advancement of global health. This program area includes extramural research programs addressing a broad range of health and disease areas, including bioethics, infectious diseases, information and communication technology, trauma and injury, and epidemics such as Ebola and HIV/AIDS.

Budget Policy:
The FY 2022 President's Budget estimate is $7.1 million, an increase of $1.1 million, or 18.1% percent, from the FY 2021 Enacted level. Fogarty's Strategic Plan provides the pathway toward developing sustainable global health research and training programs where they are needed most. Goals of the plan include investing in the critical infectious diseases agenda, as well as mobilizing the scientific community to address the growing epidemic of chronic, non-communicable diseases related to increased longevity and changing lifestyles in the developing world.

Program Portrait: HIV Research Training Program (Research Capacity Strengthening)

Building upon U.S. investments through PEPFAR, scientists have made incredible advances to address the global HIV/AIDS epidemic. Current and former Fogarty trainees have been involved in the development of interventions to: reduce mother-to-child HIV transmission; understand HIV/tuberculosis co-infection; and prevent HIV infection through behavior change, microbicides, and antiretroviral drugs. Strengthening scientific research capacity is essential to realizing the goal of an AIDS-free generation. The Fogarty approach allows each cohort of scientists to learn from and build upon the global HIV research conducted before them.

Fogarty's **HIV Research Training Program** supports HIV research capacity development in LMIC institutions by equipping scientists with the skills needed to conduct high-quality research and compete independently for research funding. Dr. Lloyd Mulenga, for example, received his Ph.D. through the Fogarty-funded University of Zambia-Vanderbilt Training Partnership for HIV-Nutrition-Metabolic Research. He is now a leading infectious disease researcher at the University of Zambia who teaches at the university's hospital and engages in policymaking at the national level. He designed a clinical trial which demonstrated that the drug dolutegravir (DTG), which is less expensive than standard treatments, and is effective and safe to treat HIV. The study helped change World Health Organization guidelines to recommend DTG as the preferred HIV treatment option, a shift in regimen with implications for people across the world.

Dr. Mulenga credits his Fogarty training for preparing him for his hybrid role as physician-scientist-policymaker by giving him opportunities to not only conduct research but also learn how to collaborate with people across sectors and institutions, extending the reach of his work. His achievements demonstrate that important scientific findings can come from anywhere in the world and that fostering the research capacity of LMIC investigators can influence global standards of HIV treatment and care.

Grantee Dr. Carey Farquhar of the University of Washington leads a training grant in the program in partnership with the Kenya Medical Research Institute (KEMRI) which aims to improve HIV treatment and prevent new infections among women and adolescent girls in Kenya. The project will provide implementation science training to increase investigators' capacity to conduct novel research and develop partnerships with local organizations and stakeholders to improve care delivery.

Program Portrait: Mobile Health (International Collaborative Research)

The advancement and ubiquity of mobile technologies has the potential to improve how diseases are prevented, diagnosed, and treated, as well as how healthcare is delivered, particularly in low-resource settings.

Since 2014, Fogarty's **Mobile Health: Technology and Outcomes in Low- and Middle-Income Countries (mHealth)** program has supported over 60 multidisciplinary grants that study innovative mobile technology interventions and tools specifically suited to overcome barriers to diagnosis, treatment, and care in LMICs. Grantee Dr. Virginia LeBaron from the University of Virginia, for example, is developing a digital platform that will provide decision-making support for health providers treating patients experiencing cancer pain. The app gathers responses from providers about their knowledge of managing cancer pain and of treatment guidelines, the availability of medicines, and other potential barriers to determine where the care gaps and challenges lie and how they can best be addressed. Its applicability relies on collaboration among U.S. and LMIC researchers and clinicians and feedback from patients to design and implement treatment guidelines that are culturally and contextually appropriate. Though the app is piloted in Nepal, it can be a tool for nurses, physicians, and pharmacists to make more informed and thus better tailored decisions about palliative care and pain management for cancer patients in any setting in the world.

Another research team from the University of Texas at Dallas and the University of Texas Southwestern Medical Center is harnessing their mHealth grant to work with local officials to help prevent road traffic accidents in Nigeria. The intervention leverages low-cost mobile phone technology to gather location data of road accidents to help officials determine exactly where ambulances should be sent, reducing delays in response and thus increasing the likelihood that accident victims receive timely medical care. The data can also help identify where major traffic problems lie and where resources should be allocated to improve road safety, tools that could be useful in settings across the world.

International Collaborative Research: Fogarty-supported research collaborations between U.S. and LMIC scientists make U.S. academic institutions more globally competitive and enable U.S. scientists to lead and participate in international research teams that address key global health priorities. These partnerships lead to more robust solutions to global health problems, as the respective strengths and expertise of local and U.S. scientists are brought to bear on complex challenges. Whether the focus is international collaborative research on disorders and diseases of the brain and nervous system, or the prediction and containment of emerging infectious diseases, discoveries and evidence generated by these projects have implications for U.S. populations. This program area includes extramural research programs addressing a broad range of health topics, including brain disorders, ecology of infectious diseases, NCDs, environmental and occupational health, mobile health, and HIV/AIDS-related stigma.

Photo by Dr. Bill Tierney

Budget Policy:
The FY 2022 President's Budget estimate is $19.1 million, an increase of $2.9 million, or 18.1 percent, from the FY 2021 Enacted level. This area supports implementation science to address the "know-do" gap, and would continue research training opportunities for U.S. and foreign scientists, foster a sustainable research environment in LMICs, and build strategic partnerships to further global health.

Sustainable Development of Human Resources for Global Health Research: Breakthrough scientific advances in global health are built upon a foundation of well-trained researchers. Investing in the best and brightest minds and catalyzing research and training partnerships between talented U.S. and LMIC scientists continues to be a high priority. Well-trained LMIC researchers bring an understanding of the unique biological, epidemiological, social, and cultural contexts of their communities, thereby contributing this knowledge to research on health challenges that often have broader, global implications. This program area includes a range of multidisciplinary fellowships for U.S. and LMIC scientists.

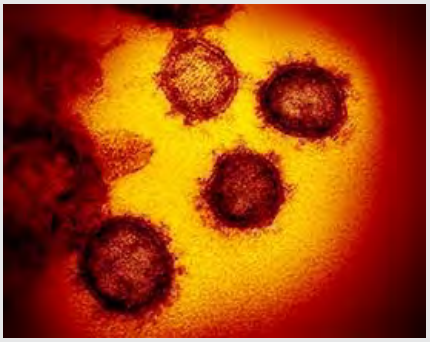
Budget Policy:
The FY 2022 President's Budget estimate is $49.7 million, an increase of $7.6 million, or 18.1 percent, from the FY 2021 Enacted level. FIC's impact has historically been most significant in developing the pipeline of U.S. and foreign research talent. FIC intends to continue support of overseas research experiences available for young U.S. scientists in order to encourage them to adopt careers in global health. FIC will also continue its research training partnerships between U.S. and foreign institutions and strive to enhance research opportunities for foreign scientists when they return to their home countries.

Program Portrait: Computational modeling in response to the COVID-19 pandemic (RMS)

Fogarty's **Division of International Epidemiology and Population Studies (DIEPS)** includes an in-house team of scientists who use data-driven modeling and innovative computational tools to study the spread of infectious disease and guide policies to prepare for future pandemics. The group leverages "big data" to provide highly granular information on transmission patterns, disease burden, human behavior and the environment.

The team is currently focused on the urgent need to study the epidemiology and transmission dynamics of COVID-19. From December 2019 to September 2020, DIEPS authored 15 publications on the pandemic, with an additional 12 manuscripts submitted or in preparation. Their published data addresses a wide range of matters including: global COVID-19 mortality rates; the impact of travel bans, social distancing measures and contract tracing on transmission of the virus; demographic patterns of COVID-19 patients; genomic epidemiology of SARS-CoV-2 for the reconstruction of viral spatial dynamics; and the use of novel data sources to study the pandemic, such as crowdsourced data, patients' travel history and social media information. DIEPS' commitment to conducting high-quality research and quickly sharing its analyses with the scientific community has been an essential contribution to our understanding of the virus and its progression. For example, research from the team is now being used to inform mathematical models that visualize the progress of the pandemic and inform how public health officials can best respond.

The team is also collaborating with scientists in Pakistan and across Africa to provide training and support for testing and genomic sequencing efforts as the virus spreads across the continent. These crucial research efforts are providing decision-makers with the best science available to respond appropriately and rapidly to COVID-19.



A transmission electron microscope image shows SARS-CoV-2, the virus that causes COVID-19; Courtesy of NIAID-RML

Research Management and Support (RMS): This program area includes several units within Fogarty.

The **Office of Administrative Management and International Services (OAMIS)** provides administrative, budgetary, logistical, and scientific support to review, award, and monitor research grants, training awards, and contracts. OAMIS also ensures regulatory compliance, supports all NIH international travel by issuing and tracking official government passports and international visas, reviews and approves of Notice of Foreign Travel requests, and then creates and coordinates official travel cables to U.S. Embassies.

The **Division of International Epidemiology and Population Studies (DIEPS)** is an in-house research program focusing on mathematical modeling and genomic analysis of infectious diseases, household air pollution implementation sciences, biosafety/biosecurity training, and data science analytical capacity building for LMIC partners.

The **Division of International Science Policy, Planning and Evaluation (DISPPE)** leads strategic planning and evaluation of FIC's programs, coordination of international science policy, and legislative affairs. DISPPE manages Fogarty's Center for Global Health Studies, a platform for international scientific dialogue and collaboration in global health research at the NIH.

The **Division of International Relations (DIR)** develops new partnerships between U.S. scientists, institutions, and counterparts abroad to advance research and training in the biomedical and behavioral sciences. The division works on behalf of Fogarty and the whole of NIH to identify opportunities for collaboration with foreign science funding agencies, the Department of State, U.S. technical agencies, and international organizations. DIR advises NIH on bilateral arrangements with foreign governments and non-governmental organizations and establishes and manages multi-lateral international arrangements that govern trans-NIH projects and programs.

Budget Policy:
The FY 2022 President's Budget estimate for RMS is $20.5 million, an increase of $0.7 million, or 3.4 percent, from the FY 2021 Enacted level.

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Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2013	$69,758,000		$69,969,000	$69,622,165
Rescission				$139,244
Sequestration				($3,494,554)
2014	$72,864,000		$72,380,000	$67,577,000
Rescission				$0
2015	$67,776,000			$67,786,000
Rescission				$0
2016	$69,505,000	$68,627,000	$70,944,000	$70,447,000
Rescission				$0
2017[1]	$70,117,000	$72,141,000	$73,026,000	$72,213,000
Rescission				$0
2018		$73,353,000	$74,380,000	$75,733,000
Rescission				$0
2019	$70,084,000	$76,637,000	$78,150,000	$78,109,000
Rescission				$0
2020	$67,235,000	$84,926,000	$82,338,000	$80,760,000
Rescission				$0
2021	$73,531,000	$86,455,000	$83,460,000	$84,044,000
Rescission				$0
2022	$96,322,000			

[1] Budget Estimate to Congress includes mandatory financing.

NATIONAL INSTITUTES OF HEALTH
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Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2021 Amount Authorized	FY 2021 Enacted	2022 Amount Authorized	FY 2022 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$84,013,000	Indefinite	$96,322,000
Fogarty International Center	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$84,013,000		$96,322,000

NATIONAL INSTITUTES OF HEALTH
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Amounts Available for Obligation[1]

(Dollars in Thousands)

Source of Funding	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Appropriation	$80,760	$84,044	$96,322
Mandatory Appropriation: (non-add)			
Type 1 Diabetes	*(0)*	*(0)*	*(0)*
Other Mandatory financing	*(0)*	*(0)*	*(0)*
Rescission	0	0	0
Sequestration	0	0	0
Secretary's Transfer	0	0	0
Subtotal, adjusted appropriation	$80,760	$84,044	$96,322
OAR HIV/AIDS Transfers	67	-31	0
HEAL Transfer from NINDS	0	0	0
Subtotal, adjusted budget authority	$80,827	$84,013	$96,322
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$80,827	$84,013	$96,322
Unobligated balance lapsing	-16	0	0
Total obligations	$80,811	$84,013	$96,322

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

FY 2020 - $10,355 FY 2021 - $10,562 FY 2022 - $10,759

Budget Authority by Object Class[1]

(Dollars in Thousands)

	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021 Enacted
Total compensable workyears:			
Full-time equivalent	61	61	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	$0	$0	$0
Average GM/GS grade	13.0	13.0	0.0
Average GM/GS salary	$126	$129	$3
Average salary, Commissioned Corps (42 U.S.C. 207)	$0	$0	$0
Average salary of ungraded positions	$222	$227	$5

	OBJECT CLASSES	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
	Personnel Compensation			
11.1	Full-Time Permanent	5,697	5,826	130
11.3	Other Than Full-Time Permanent	647	662	15
11.5	Other Personnel Compensation	136	139	3
11.7	Military Personnel	127	131	4
11.8	Special Personnel Services Payments	113	116	3
11.9	**Subtotal Personnel Compensation**	**$6,720**	**$6,874**	**$154**
12.1	Civilian Personnel Benefits	2,491	2,623	132
12.2	Military Personnel Benefits	52	53	1
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$9,263**	**$9,550**	**$287**
21.0	Travel & Transportation of Persons	179	182	3
22.0	Transportation of Things	1	1	0
23.1	Rental Payments to GSA	0	0	0
23.2	Rental Payments to Others	0	0	0
23.3	Communications, Utilities & Misc. Charges	60	61	1
24.0	Printing & Reproduction	0	0	0
25.1	Consulting Services	1,148	1,199	51
25.2	Other Services	4,551	4,633	82
25.3	Purchase of goods and services from government accounts	8,506	8,924	418
25.4	Operation & Maintenance of Facilities	405	413	7
25.5	R&D Contracts	172	175	3
25.6	Medical Care	0	0	0
25.7	Operation & Maintenance of Equipment	31	31	1
25.8	Subsistence & Support of Persons	0	0	0
25.0	**Subtotal Other Contractual Services**	**$14,812**	**$15,374**	**$562**
26.0	Supplies & Materials	168	171	3
31.0	Equipment	183	186	3
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	59,347	70,797	11,449
42.0	Insurance Claims & Indemnities	0	0	0
43.0	Interest & Dividends	0	0	0
44.0	Refunds	0	0	0
	Subtotal Non-Pay Costs	**$74,750**	**$86,772**	**$12,022**
	Total Budget Authority by Object Class	**$84,013**	**$96,322**	**$12,309**

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

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Salaries and Expenses

(Dollars in Thousands)

OBJECT CLASSES	FY 2021 Enacted	FY 2022 President's Budget	FY 2022 +/- FY 2021
Personnel Compensation			
Full-Time Permanent (11.1)	$5,697	$5,826	$130
Other Than Full-Time Permanent (11.3)	647	662	15
Other Personnel Compensation (11.5)	136	139	3
Military Personnel (11.7)	127	131	4
Special Personnel Services Payments (11.8)	113	116	3
Subtotal Personnel Compensation (11.9)	**$6,720**	**$6,874**	**$154**
Civilian Personnel Benefits (12.1)	$2,491	$2,623	$132
Military Personnel Benefits (12.2)	52	53	1
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$9,263**	**$9,550**	**$287**
Travel & Transportation of Persons (21.0)	$179	$182	$3
Transportation of Things (22.0)	1	1	0
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	60	61	1
Printing & Reproduction (24.0)	0	0	0
Other Contractual Services:			
Consultant Services (25.1)	204	208	4
Other Contractual Services:			
OC 25.115 Management Fund (25.1)	944	991	47
Other Services (25.2)	4,551	4,633	82
Purchases from government accounts (25.3)	5,352	5,654	302
Operation & Maintenance of Facilities (25.4)	405	413	7
Operation & Maintenance of Equipment (25.7)	31	31	1
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	**$10,543**	**$10,939**	**$396**
Supplies & Materials (26.0)	$168	$171	$3
Subtotal Non-Pay Costs	**$10,951**	**$11,354**	**$403**
Total Administrative Costs	**$20,214**	**$20,905**	**$690**

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Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2020 Final			FY 2021 Enacted			FY 2022 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Common Fund									
Direct:	-	-	-	-	-	-	-	-	-
Reimbursable:	2	-	2	2	-	2	2	-	2
Total:	2	-	2	2	-	2	2	-	2
Division of International Epidemiology and Population Studies									
Direct:	3	-	3	3	-	3	3	-	3
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	3	-	3	3	-	3	3	-	3
Division of International Relations									
Direct:	6	-	6	6	-	6	6	-	6
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	6	-	6	6	-	6	6	-	6
Division of International Science Policy, Planning and Evaluation									
Direct:	8	-	8	8	-	8	8	-	8
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	8	-	8	8	-	8	8	-	8
Division of International Training and Research									
Direct:	11	-	11	11	-	11	11	-	11
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	11	-	11	11	-	11	11	-	11
Office of Administrative Management									
Direct:	15	-	15	17	-	17	17	-	17
Reimbursable:	-	-	-	-	-	-	-	-	-
Office of Administrative Management									
Reimbursable:	-	-	-	-	-	-	-	-	-
Office of Administrative Management									
Total:	15	-	15	17	-	17	17	-	17
Office of the Director									
Direct:	14	-	14	14	-	14	14	-	14
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	14	-	14	14	-	14	14	-	14
Total	59	-	59	61	-	61	61	-	61
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
2018	12.0
2019	12.0
2020	13.0
2021	13.0
2022	13.0

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Detail of Positions[1]

GRADE	FY 2020 Final	FY 2021 Enacted	FY 2022 President's Budget
Total, ES Positions	0	0	0
Total, ES Salary	0	0	0
General Schedule			
GM/GS-15	8	8	8
GM/GS-14	17	17	17
GM/GS-13	15	15	15
GS-12	7	7	7
GS-11	0	0	0
GS-10	0	0	0
GS-9	4	4	4
GS-8	2	2	2
GS-7	3	3	3
GS-6	0	0	0
GS-5	0	0	0
GS-4	0	0	0
GS-3	1	1	1
GS-2	0	0	0
GS-1	0	0	0
Subtotal	57	57	57
Commissioned Corps (42 U.S.C. 207)			
Assistant Surgeon General	0	0	0
Director Grade	0	0	0
Senior Grade	0	0	0
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	0	0	0
Ungraded	4	4	4
Total permanent positions	57	57	57
Total positions, end of year	61	61	61
Total full-time equivalent (FTE) employment, end of year	59	61	61
Average ES salary	0	0	0
Average GM/GS grade	13.0	13.0	13.0
Average GM/GS salary	124,254	126,155	129,025

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