DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

John E. Fogarty International Center (FIC)

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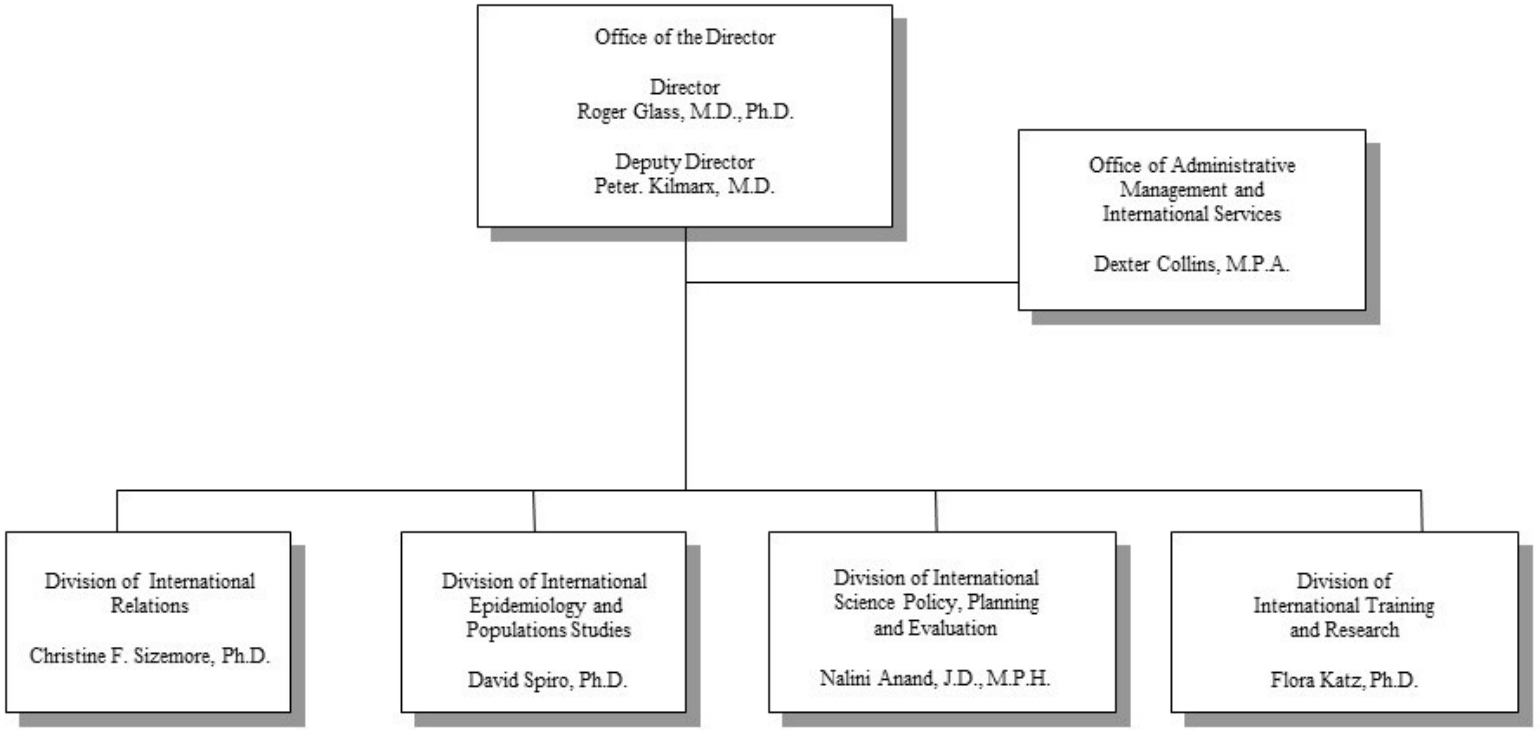
John E. Fogarty International Center



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), [$80,760,000]*$73,531,000*.

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Amounts Available for Obligation[1]

(Dollars in Thousands)

Source of Funding	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget
Appropriation	$78,109	$80,760	$73,531
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	-268	0	0
Subtotal, adjusted appropriation	$77,841	$80,760	$73,531
OAR HIV/AIDS Transfers	80	67	0
HEAL Transfer from NINDS	0	0	0
Subtotal, adjusted budget authority	$77,921	$80,827	$73,531
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	$77,921	$80,827	$73,531
Unobligated balance lapsing	-27	0	0
Total obligations	$77,894	$80,827	$73,531

[1] Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
FY 2019 - $9,061 FY 2020 - $9,248 FY 2021 - $8,449

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Budget Mechanism - Total[1]

(Dollars in Thousands)

MECHANISM	FY 2019 Final		FY 2020 Enacted		FY 2021 President's Budget		FY 2021 +/- FY 2020 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	57	$10,553	38	$8,032	46	$9,054	8	$1,022
Administrative Supplements	*(9)*	680	*(9)*	680	*(8)*	579	*(-1)*	-101
Competing:								
Renewal	0	30	0	31	0	27	0	-5
New	26	4,959	35	6,657	32	5,667	-3	-990
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	26	$4,989	35	$6,688	32	$5,694	-3	-$995
Subtotal, RPGs	83	$16,222	73	$15,400	78	$15,326	5	-$73
SBIR/STTR	0	0	0	0	0	0	0	0
Research Project Grants	83	$16,222	73	$15,400	78	$15,326	5	-$73
Research Centers:								
Specialized/Comprehensive	0	$700	0	$1,000	0	$853	0	-$147
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	$1,000	0	$853	0	-$147
Other Research:								
Research Careers	68	$6,380	71	$6,635	65	$5,648	-6	-$987
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	137	32,788	142	34,094	130	29,025	-12	-5,070
Other Research	205	$39,168	213	$40,729	195	$34,673	-18	-$6,056
Total Research Grants	288	$56,090	286	$57,128	273	$50,852	-13	-$6,276
Ruth L Kirchstein 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	$3,963	0	$4,256	0	$4,209	0	-$47
(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	56	17,868	61	19,442	61	18,470	0	-972
Res. Management & Support (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	56	$77,921	61	$80,827	61	$73,531	0	-$7,296

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

Major Changes in the Fiscal Year 2021 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 2021 President's Budget request for FIC, which is $73.5 million, a decrease of $7.3 million from the FY 2020 Enacted level. The FY 2021 President's Budget reflects the Administration's fiscal policy goals for the Federal Government. Within that framework, FIC will pursue its highest research priorities through strategic investments and careful stewardship of appropriated funds.

FIC will support a total of 32 Competing Research Project Grant (RPG) awards in FY 2021, a decrease of 3 awards and $1.0 million, or 14.9 percent, from the FY 2020 Enacted level. Research Career awards will decrease by 6 awards and $1.0 million, or 14.9 percent. Research Management Support (RMS) – which provides in-house research, strategic planning and coordination, as well as administrative and logistical support for FIC and trans-NIH initiatives – will decrease by 5.0 percent.

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Summary of Changes

(Dollars in Thousands)

FY 2020 Enacted	$80,827
FY 2021 President's Budget	$73,531
Net change	-$7,296

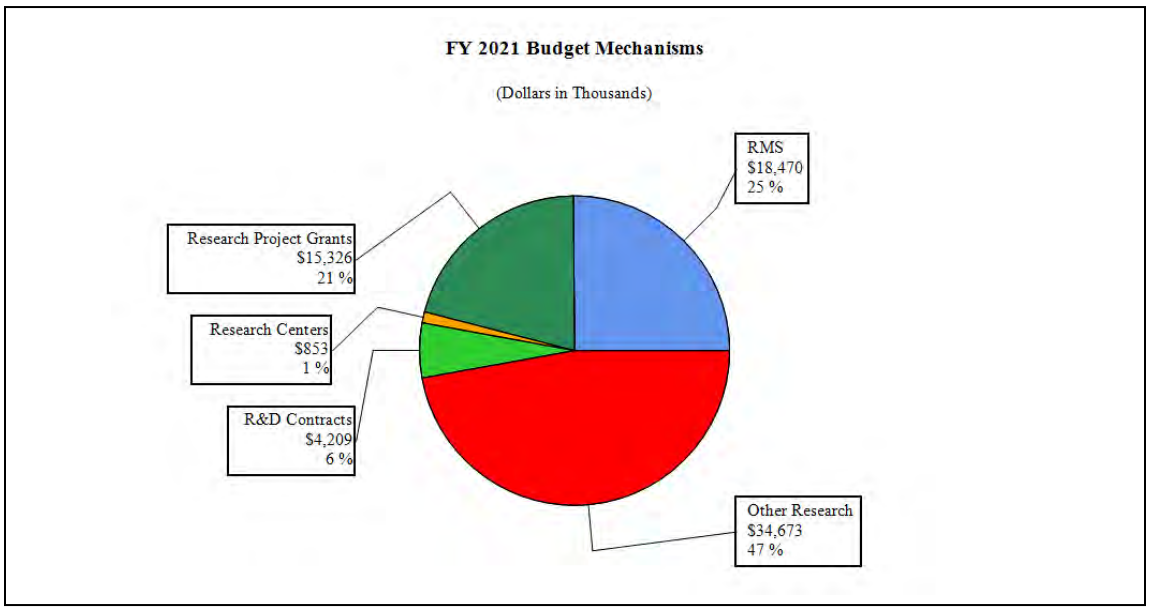
CHANGES	FY 2021 President's Budget FTEs	FY 2021 President's Budget Budget Authority	Change from FY 2020 Enacted FTEs	Change from FY 2020 Enacted Budget Authority
A Built-in:				
1 Intramural Research:				
a Annualization of January 2020 pay increase & benefits		$0		$0
b January FY 2021 pay increase & benefits		0		0
c Paid days adjustment		0		0
d Differences attributable to change in FTE		0		0
e Payment for centrally furnished services		0		0
f Cost of laboratory supplies, materials, other expenses, and non-recurring costs		0		0
Subtotal				$0
2 Research Management and Support:				
a Annualization of January 2020 pay increase & benefits		$11,112		$71
b January FY 2021 pay increase & benefits		11,112		176
c Paid days adjustment		11,112		-41
d Differences attributable to change in FTE		11,112		0
e Payment for centrally furnished services		0		0
f Cost of laboratory supplies, materials, other expenses, and non-recurring costs		7,358		-34
Subtotal				$172
Subtotal, Built-in				$172

CHANGES	FY 2021 President's Budget No.	FY 2021 President's Budget Amount	Change from FY 2020 Enacted No.	Change from FY 2020 Enacted Amount
B Program:				
1 Research Project Grants:				
a Noncompeting	46	$9,632	8	$921
b Competing	32	5,694	-3	-995
c SBIR/STTR	0	0	0	0
Subtotal, RPGs	78	$15,326	5	-$73
2 Research Centers	0	$853	0	-$147
3 Other Research	195	34,673	-18	-6,056
4 Research Training	0	0	0	0
5 Research and development contracts	0	4,209	0	-47
Subtotal, Extramural		$55,061		-$6,324
	FTEs		FTEs	
6 Intramural Research	0	$0	0	$0
7 Research Management and Support	61	18,470	0	-1,144
8 Construction		0		0
9 Buildings and Facilities		0		0
Subtotal, Program	61	$73,531	0	-$7,468
Total changes				-$7,296

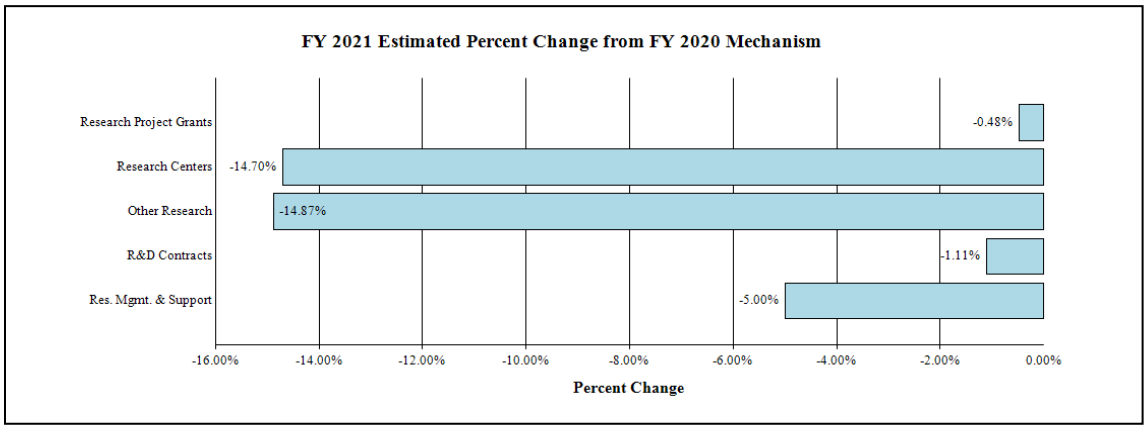
Fiscal Year 2021 Budget Graphs

History of Budget Authority and FTEs:

Distribution by Mechanism:



Change by Selected Mechanism:



NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Budget Authority by Activity[1]

(Dollars in Thousands)

	FY 2019 Final		FY 2020 Enacted		FY 2021 President's Budget		FY 2021 +/- FY2020	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail								
Research Capacity Strengthening		$38,193		$39,040		$35,018		-$4,022
Development of Human Resources for Global Health		11,960		12,225		10,965		-1,259
International Collaborative Research		9,901		10,120		9,078		-1,043
Subtotal, Extramural		**$60,053**		**$61,385**		**$55,061**		**-$6,324**
Intramural Research	**0**	**$0**	**0**	**$0**	**0**	**$0**	**0**	**$0**
Research Management & Support	**56**	**$17,868**	**61**	**$19,442**	**61**	**$18,470**	**0**	**-$972**
TOTAL	**56**	**$77,921**	**61**	**$80,827**	**61**	**$73,531**	**0**	**-$7,296**

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

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2020 Amount Authorized	FY 2020 Enacted	2021 Amount Authorized	FY 2021 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$80,827,000	Indefinite	$73,531,000
Fogarty International Center	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$80,827,000		$73,531,000

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2012	$71,328,000	$71,328,000	$68,653,000	$69,754,000
Rescission				$131,835
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			

[1] Budget Estimate to Congress includes mandatory financing.

Justification of Budget Request

John E. Fogarty International Center for Advanced Study in the Health Sciences

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

Budget Authority (BA):

	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget	FY 2021 +/- FY 2020
BA	$77,921,000	$80,827,000	$73,531,000	-$7,296,000
FTE	56	61	61	0

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

Director's Overview

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 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 uniquely contributed to the NIH mission by identifying scientific gaps and opportunities in global health and catalyzing science on cross-cutting issues that complement and support the work of other NIH Institutes and Centers.

Fogarty strengthens the scientific workforce in the United States and abroad to address existing and future health threats that affect us all. The benefits of these investments are significant as Fogarty-supported trainees from decades ago are now senior investigators on NIH-funded studies, contributing to cutting edge advances in globally relevant science. In addition to their scientific leadership, former Fogarty trainees contribute to health policies in the United States and other countries, strengthen research capacity, and train the next generation of global health leaders.

Fogarty's support for health research is global, with an emphasis on research activities in low- and middle-income countries (LMICs). However, there are many important benefits of this work for Americans. For example, training scientists in developing countries equips them to study pandemics at their point of origin, quickly contain outbreaks, and prevent or limit the spread of communicable diseases to the United States, thereby ensuring our nation's safety and security from emerging diseases. Scientific breakthroughs from global health research also benefit Americans suffering from the same diseases or health conditions. For example, important scientific discoveries in cancer, HIV/AIDS, brain disorders, and child health were based on research conducted in LMICs and are now the basis of treatments in the United States.

Additionally, Fogarty programs extend the reach and competitiveness of U.S. universities where there is high demand for international research opportunities. Currently, Fogarty supports nearly 500 research and training projects involving more than 100 U.S. universities. Roughly 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 at the forefront of scientific discovery.

Science with an Eye the Future: The Long Arc of Research

The impact of diseases on human health has changed dramatically over the last 20 years. Considerable progress has been made in reducing the burden of infectious and communicable diseases, such as HIV/AIDS, though progress has recently slowed. At the same time, non-communicable diseases (NCDs) have become significantly more prevalent and are now the primary cause of death and disability in many LMICs.

Global Health Research: As the landscape of health has changed, the way global health research is conducted has also changed. Twenty years ago, researchers commonly worked in their own specialty areas with limited networking across disciplines. Furthermore, U.S. researchers had few opportunities to study science or conduct research internationally since there were very few trained investigators in LMICs to partner with and research capacity in those countries was weak.

Over the last 20 years, Fogarty invested in cross-cutting health areas, supported training of researchers in LMICs, and fostered collaborations between U.S. and international researchers through several programs, many of which are still running or have evolved to meet the changing global health landscape.

Now, U.S. researchers benefit from vibrant research networks in LMICs across several health and disease areas, enabling more impactful scientific discoveries with global benefits. Furthermore, Fogarty-supported grantees are training a new generation of global health leaders, gradually strengthening capacity and expanding research networks across the globe.

HIV/AIDS and Other Infectious Diseases: The number of new HIV infections in the world peaked at 3.5 million in 1997. The National Institute of Allergy and Infectious Diseases (NIAID) leads the NIH research portfolio on HIV/AIDS-related research, and Fogarty works in a complementary manner by funding programs that train researchers to study the disease, such as the **AIDS International Training and Research Program (AITRP)**. Since it began in 1988, AITRP has trained researchers from LMICs on multidisciplinary biomedical, behavioral, and social science research related to the prevention, care, and treatment for HIV/AIDS and related conditions. Over the past three decades, AITRP trainees have contributed to major HIV-related discoveries, including studies showing that antiretroviral drugs help prevent the spread of the disease, male circumcision reduces HIV infection risk, and screening HIV-positive women for cervical cancer is cost-effective. These studies not only improved health in LMICs, but also

informed treatment protocols in the United States to benefit Americans living with HIV/AIDS. Building on the successes of AITRP, Fogarty's HIV-related programs evolved into the current **HIV Research Training** program.

Since 1997, the number of new HIV infections has steadily decreased, and the number of AIDS-related deaths has decreased since 2005, though progress has slowed in recent years. Fogarty trainees continue to be at the forefront of several promising clinical trials, including studies on an HIV vaccine, a manufactured antibody against HIV, and long-acting injectables for prevention.

Dr. Salim Abdool Karim, Director of the Centre for the AIDS Programme of Research in South Africa, is an example of a long-time Fogarty grantee who is driving the field of HIV research forward. Dr. Abdool Karim has trained hundreds of South African scientists, many of whom are now leading research teams of their own and are training a new generation of HIV scientists. One of Dr. Abdool Karim's former trainees, Dr. Kogieleum "Kogie" Naidoo, is a South Africa-native who contributed to a major discovery around the treatment of people living with AIDS and tuberculosis (TB). Her research findings led to changes in the guidelines from the South Africa government and the World Health Organization for the initiation of antiretroviral therapy in HIV/TB patients.

Fogarty also supports research training on other infectious diseases through programs such as the **Global Infectious Disease Research Training (GID)** program, which aims to build a critical mass of researchers who can conduct independent infectious disease research in developing country institutions. Over the past two decades, more than 1,200 researchers have been trained under the GID program. These scientists have contributed to or led thousands of publications describing groundbreaking health advances on topics such as childhood diarrhea, malaria, tuberculosis, Zika, and other parasites. Many of these scientists are now in leadership roles at their institutions, while others have started companies in their home countries.

Progress on Non-Communicable Diseases (NCDs): Twenty years ago, much of the research on NCDs was focused on populations in high-income countries, while the prevalence of conditions such as heart disease, diabetes, and cancer were rising rapidly in LMICs. In 2001, as the global health research community was turning its attention to this alarming trend, Fogarty has invested more than $80 million in a series of NCD-related programs that strengthen the research capacity of LMIC institutions and support training of in-country experts to conduct research and test the implementation of evidence-based interventions relevant to their countries. More than 600 investigators received long-term NCD research training through these programs, culminating in the publication of more than 1,000 articles covering cardiovascular disease, aging disorders, mental health, environmental health, and many other NCDs. The programs have spurred the development of new curricula and degree programs, as well as new health practices and policies. For example, grantees under these programs contributed to guidelines for the World Health Organization (WHO) and the Governments of Egypt and the United Arab Emirates on medications for people addicted to the opioid Tramadol. Other grantees led projects on: training health workers in Argentina on early detection of psychosis; informing government policy guidelines for osteoporosis and Vitamin D supplementation in Lebanon; and encouraging the Government of Vietnam to prioritize child mental health and include it in health insurance coverage.

Dr. Michèle Ramsay, Professor of Human Genetics at the National Health Laboratory Service and the University of the Witwatersrand in South Africa, is a long-time Fogarty and NIH grantee driving NCD research forward. Dr. Ramsay was recently recognized with a 2019 South African Women in Science Award for her scientific contributions to human genetics related to obesity, hypertension, bone development, kidney disease, and glaucoma. She is a grantee of Fogarty's **Chronic, Non-Communicable Diseases and Disorders Across the Lifespan** program, through which she helps post-graduate students develop their research careers in their home countries, building local capacity in the process.

Today, NCDs account for more than half of the overall burden of disease in LMICs, claiming 32 million lives each year. Fogarty trainees continue to lead research on heart disease, diabetes, cancer, and other NCDs.

Innovative Programs

One of the most exciting and promising innovations in global health is in the use of digital and mobile technology. Accordingly, recent increases in Fogarty's appropriations were invested in the **Mobile Health: Technology and Outcomes in LMICs (mHealth)** program, which supports research on the use of mobile phones, tablets, and other wireless devices to improve health in LMICs. Since the program began in 2014, more than 60 projects have been funded, many in partnership with other NIH Institutes and Centers. Recent grantees are working on cutting edge applications of digital technology such as improving cervical cancer diagnosis in Peru, using telemedicine to diagnose surgical site infections in rural Rwanda, and improving HIV drug adherence in Thailand. These types of leapfrogging technologies are crucial to enhancing clinical care and improving health outcomes in low-resource settings abroad and are also potentially relevant to rural settings in the United States.

The **Global Brain and Nervous System Disorders Research across the Lifespan (Global Brain)** program is a partnership between Fogarty and nine other NIH Institutes that supports collaborative research and capacity building projects related to brain and nervous system disorders, such as autism, cerebral palsy, Alzheimer's, addiction, epilepsy, bipolar disorder, schizophrenia, and posttraumatic stress disorder. These conditions contribute greatly to the global burden of disease and also have huge health impacts in the United States. Grantees from the program are using innovative approaches with global relevance to improve the understanding and treatment of these diseases. For example, Fogarty partners with the National Institute of Environmental Health Sciences (NIEHS) to support a multidisciplinary team of researchers studying the neurological health of children in the Democratic Republic of Congo. The research team examined the link between improper processing of cassava, a staple crop in the region, and cognitive and motor impairment in children. Now, the team is conducting a larger, longitudinal study to determine the effectiveness of interventions to safeguard child development. Another research team in Fiji is working with community health nurses to study innovative tools for assessing mental health. These grantees are studying how digital diagnostic tools – such as mobile phone-based questionnaires – can be used to rapidly and accurately identify patients at risk of suicide.

Dr. Gretchen Birbeck, the Rykenboer Professor of Neurology at the University of Rochester, is an example of a long-time grantee of Fogarty and other NIH Institutes who is driving the field of brain research forward. For the last 20 years, Dr. Birbeck has spent six months of each year studying epilepsy in Africa, on topics such as stigma the social and economic effects of the disease, to help develop more effective interventions. Building on her deep experience, Dr. Birbeck recently chaired a Fogarty effort to identify research priorities related to stigma reduction across infectious and non-communicable diseases.

Amidst the persistent threats of Ebola, influenza, and other emerging infectious diseases, predicting and preparing for the next pandemic is of utmost importance to protecting health. Fogarty's **Division of International Epidemiology and Population Studies** (DIEPS), the Institute's in-house research team, began 20 years ago to address these types of threats. DIEPS uses data-driven modeling and innovative computational tools to improve the study of the spread of disease and guide polices related to preparing for a future pandemic. The unit also implements programs that have strengthened global capacity to study influenza viruses in 80 countries and developed networks of global experts to provide evidence-based recommendations for bioterror and natural outbreaks. The group leverages "big data" – large, electronic datasets including pathogen genome sequences, electronic health records, social media, satellite imagery and cellphone records – to provide highly granular information on transmission patterns, disease burden, human behavior, and the environment. These activities have led to new national and regional vaccination strategies, improved understanding of the role of children in disease transmission, and important insights into how viruses evolve over time.

Vision for the Future

Despite great progress made by the global health research community over the past 20 years, major challenges remain. The prevalence and health impact of NCDs continues to rise, especially in LMICs. Many evidence-based health interventions are not being adopted into health care practice and policy. New and emerging threats and potential pandemics continue to concern governments and health professionals all around the world.

Looking ahead, the Fogarty International Center will continue to address these challenges through its cross-cutting and multi-disciplinary approach, innovation, and implementation science.

Cross-Cutting and Multidisciplinary Approach: Fogarty will continue to play a unique role at NIH in convening partners across different disease areas and health disciplines on relevant science issues with global implications. As such, Fogarty is extremely interconnected across NIH and co-funds research projects with 19 other NIH Institutes and Centers. This unique position at NIH leverages the expertise of other NIH Institutes and enables Fogarty to focus on research topics that cut across diseases, such as implementation science, common risk factors, developmental origins, bioethics, stigma, and mobile health. Fogarty is also able to draw attention to under-represented areas of research training, such as trauma and injury.

Innovation: Fogarty will continue to harness new frontiers of global health science to ensure that the scientific community is prepared to develop and speed discoveries that improve health. Fogarty's **mHealth** program, described earlier, recently adopted a phased innovation approach that begins with a phase of technology development and feasibility studies and follows with second phase transition award for the most successful grantees to further validate and test their innovations at larger scale. Recent grantees are studying mobile ultrasound technology for cancer biopsies, cell phone-based microscopes to detect tuberculosis, online tools that help patients manage diabetes, and digital tools to train community health workers to treat mental health disorders. Fogarty is also partnering with the National Institute of Biomedical Imaging and Bioengineering (NIBIB) on the **Point of Care Technologies Research Network**, which includes support for an innovative center focused on the development and commercialization of point-of-care technologies that improve management of HIV and related diseases in Africa. These types of technologies are especially promising in that they can improve the diagnosis and treatment of diseases in areas with a shortage of health care workers, such as LMICs as well as rural parts of the United States.

Fogarty is also now leading a trans-NIH initiative that will cultivate an ecosystem of innovation and harness the "big data" revolution to improve health in Africa. NIH recently approved a major Common Fund initiative on **Harnessing Data Science for Health Discovery and Innovation in Africa**. The initiative will bring experts together across health, computer science, and engineering disciplines as well as across academia, government, industry, and NGO communities on several research, research training, and coordination activities.

Implementation Science: Fogarty will continue to support implementation science and training, an emerging area of research that promotes the adoption and integration of evidence-based practices, interventions, and policies into routine health care and public health settings. Several Fogarty programs already include a focus on implementation science and more recently, the **Global Brain** program (described above) issued a call for supplemental awards to expand implementation research on brain and nervous system disorders.

In addition to funding implementation science grants, Fogarty's **Center for Global Health Studies** manages the **Adolescent HIV Prevention and Treatment Implementation Science Alliance (AHISA)** in partnership with the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the NIH Office of AIDS Research (OAR), and several other NIH Institutes and Centers. AHISA enhances the prevention, screening, and treatment of HIV among adolescents (ages 15 to 24) in sub-Saharan Africa by catalyzing collaboration and communication among implementation scientists, program implementers, and policymakers through a series of fora in the United States and Africa. By bringing these stakeholders together to exchange ideas and research findings, Fogarty is helping identify critical barriers to successful implementation of proven interventions and ensuring that those interventions are delivered and scaled up effectively.

Looking to the future, Fogarty will continue to bring researchers and other key stakeholders together from across health and disease areas to tackle cross-cutting challenges. For example, Fogarty recently brought together experts on infectious diseases, mental health, cancer, neurological disorders, women's health, and child health to explore the science of stigma

reduction. Participants shared lessons learned, discussed partnership strategies, and set forth key research priorities for this important, but under-researched health issue.

Through these approaches, Fogarty is working to prepare the global health research community for new and emerging trends and threats as well as the rising tide of persistent challenges, such as NCDs and Alzheimer's disease. Fogarty's programs will continue to invest in developing the next generation of scientists to benefit the health of Americans and people across the globe.

Overall Budget Policy:
The FY 2021 President's Budget request is $73.5 million, a decrease of $7.3 million or 9.0 percent from the FY 2020 Enacted level. 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.

Program Descriptions and Accomplishments

Research Capacity Strengthening: The development of effective measures to address shared health challenges requires a critical mass of U.S. and LMIC institutions that can conduct robust research and train the next generation of scientists to solve complex problems. Strong institutions that can conduct health research and train scientists in a wide range of disciplines are critical to finding solutions and to building the research workforce of the future. 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, emerging epidemics such as Ebola, HIV/AIDS, and trauma and injury.

Budget Policy:
The FY 2021 President's Budget estimate is $35.0 million, a decrease of $4.0 million, or 10.3% percent, from the FY 2020 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: International Bioethics Training Program (Bioethics)

Integral to a country's ability to conduct high-quality research is its protection of human subjects. In order to do so, scientific research must adhere to the highest ethical standards and thus a country's research environment must include strong local ethics review boards, appropriate national regulations, and a cohort of experts who can evaluate and advise on matters related to research ethics. Since 2000, Fogarty's International Bioethics Training program has contributed to developing such research environments in LMICs by investing in the training of bioethicists and the creation of culturally relevant bioethics curricula. The program has enabled hundreds of scientists, academics, and health professionals across disciplines to complete master's level and other trainings in bioethics, equipping them to advise LMIC institutions on how to create and strengthen bioethics guidelines, build ethical review boards, and train others locally in research ethics.

Bioethics is increasingly important in countries like Uganda, which is now the third largest destination in Africa for clinical trials. Grantees of Fogarty's Bioethics program have played key roles in developing the Ugandan research ethics landscape. In partnership with the National Institute of Allergy and Infectious Diseases (NIAID) and the National Human Genome Research Institute (NHGRI) the program supported Makerere University, which has created a cadre of Ugandan bioethics experts, instituted bioethics advanced programs, and established a bioethics center that provides leadership to facilitate scientific discovery while maintaining ethical research standards. The program supports trainees' participation in international research ethics conferences, provides short courses, online training tools, and case studies specific to Uganda, and ensures that investigators are mentored by experienced bioethicists. The strengthening of research ethics in Uganda through the program is not only cost-effective, but it has ensured that young investigators can remain at home to receive bioethics training, that they are learning material relevant to the context where they live and work, and that high-quality scientific research can be conducted in-country.

Sustainable Development of Human Resources for Global Health Research: Breakthrough scientific advances in global health are built upon a foundation of well-trained researchers, from both the United States and LMICs, who collaborate to solve major global health problems. 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 2021 President's Budget estimate is $11.0 million, a decrease of $1.3 million, or 10.3 percent, from the FY 2020 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: International Research Scientist Development Award (IRSDA)

A key pathway to advancing global health is to invest in top scientists, develop research and training partnerships, and promote international collaboration. Fogarty's International Research Scientist Development Award (IRSDA) is one such mechanism, a program which since 1999 has helped postdoctoral scientists and junior faculty develop independent research careers in global health. IRSDA provides scientists from the United States with the funding and protected time necessary to conduct high-quality research in LMICs and build long-lasting, global research collaborations that will benefit them throughout their careers. Eighty-nine IRSDA grantees over the life of the program have worked in over 33 LMICs, published over 1,500 peer-reviewed papers, and formed important scientific networks across a wide range of biomedical fields.

IRSDA grantee Dr. Dan Fitzgerald of Weill Cornell Medical College, for example, began his research training in Haiti in 1999. Working with research mentors in both Haiti and the United States, Fitzgerald developed biomedical and clinical research skills and learned best practices for informed consent, both of which are necessary to study HIV transmission and other key health issues in LMICs. The IRSDA program set Fitzgerald on a path to becoming a distinguished investigator in his field. He has received subsequent research and training grants from several other NIH Institutes and is now training the next generation of scientists to conduct research on HIV, tuberculosis, and cervical cancer, extending the impact of his grant beyond his own research.

Another IRSDA grantee, Dr. Thomas Gaziano, utilized his funding to develop his capacity to address cardiovascular disease (CVD), the leading cause of death in the United States and worldwide. His experience in South Africa and India beginning in 2004 provided him opportunities to build scientific collaborations and conduct important research. With his IRSDA funding, Dr. Gaziano first devised and demonstrated the effectiveness of a low-cost screening tool for CVD that can be easily utilized in low-resource settings. He then demonstrated that it is cost-effective to train community health workers to use the tool to identify people at high risk for the disease. Dr. Gaziano has since obtained additional support from the National Heart, Lung and Blood Institute (NHLBI) and other funders to continue his important work.

IRSDA has produced a cohort of U.S. scientists who not only understand the realities of conducting research in resource-limited settings, but who have additionally formed sustainable international collaborations that can be harnessed to address health problems both within the United States and across the world.

International Collaborative Research: Fogarty-supported research collaborations between U.S. and LMIC scientists make U.S. academic institutions more globally competitive, extend their reach, and enable U.S. scientists to lead and participate in international research teams that address key global health priorities. These partnerships also 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, HIV/AIDS-related stigma, and tobacco.

Budget Policy:
The FY 2021 President's Budget estimate is $9.1 million, a decrease of $1.0 million, or 10.3 percent, from the FY 2020 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.

Program Portrait: Global Environmental and Occupational Health (GEO Health)

According to the World Health Organization, nearly a quarter of all deaths worldwide – approximately 12.6 million deaths per year – are attributed to living or working in an unhealthy environment. People across the world are exposed to pollution and chemicals from, for example, pesticides or the solid fuels used to cook food and heat homes. Additionally, the agriculture, mining, and manufacturing industries are high risk environments for work-related illness and injury, costing the global economy billions of dollars. The continued increase of urbanization and industrialization throughout LMICs today thus necessitates a strengthening of research collaborations that can collectively work to address these environmental and occupational hazards and reduce their burden.

The Global Environmental and Occupational Health (GEOHealth) program is a collaboration between Fogarty, other NIH Institutes, and other partners to address this need. Building on the success of a predecessor program which began in 1995, GEOHealth is designed to create a network of expertise by funding seven regional research and training centers. Each of these GEOHealth hubs is a collaboration between a U.S. and LMIC institution and focuses on a health threat that is high priority for its region. This innovative hub model provides a platform for coordinated research, data management, training, curriculum development, and policy support to address targeted goals. By leveraging the resources of multiple funding partners and the needs of academics and practitioners, the LMIC institution increases its research capacity and impact. Over time, it becomes a sustainable resource for scientists and decision-makers around specific health concerns. Each hub has its own combination of training opportunities provided by the U.S. institution, as well as mentorship for trainees by experts in their respective fields, making the institution more globally competitive and giving U.S. scientists a voice related to key global environmental health issues.

A key topic of focus among several of the GEOHealth hubs is the health impact of air pollution, a public health concern globally that kills seven million people prematurely each year. The India GEOHealth hub, for example, works to better understand the relationship between air pollution and cardio-metabolic risk factors and diseases, a key problem as rapid urbanization further augments the country's polluted air. The collaboration between the Harvard T.H. Chan School of Public Health and the Centre for Chronic Disease Control of India has produced a core of environmental health researchers who estimate air pollution exposures in two of India's largest cities and study the impacts of those exposures on cardio-metabolic health outcomes. The hub additionally provides mentored research training opportunities, short-term courses, and a masters-level training program related to environmental health sciences. By simultaneously conducting targeted research in India and training the next generation of scientists, the hub is building a network of expertise around the detrimental cardio-metabolic health impacts of air pollution, producing research that has impacts far beyond India's borders.

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 creates and coordinates official travel cables to U.S. Embassies.

The **Division of International Epidemiology and Population Studies (DIEPS)** is an in-house epidemiology program performing mathematical modeling of infectious diseases.

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 2021 President's Budget estimate is $18.5 million, a decrease of $1.0 million, or 5.0 percent, from the FY 2020 Enacted level.

NATIONAL INSTITUTES OF HEALTH
Fogarty International Center

Budget Authority by Object Class[1]

(Dollars in Thousands)

		FY 2020 Enacted	FY 2021 President's Budget	FY 2021 +/- FY 2020
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	12.0	12.0	0.0
	Average GM/GS salary	$122	$123	$1
	Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	$0	$0	$0
	Average salary of ungraded positions	$203	$205	$3
OBJECT CLASSES		**FY 2020 Enacted**	**FY 2021 President's Budget**	**FY 2021 +/- FY 2020**
	Personnel Compensation			
11.1	Full-Time Permanent	7,278	7,362	84
11.3	Other Than Full-Time Permanent	569	576	7
11.5	Other Personnel Compensation	137	139	2
11.7	Military Personnel	84	0	-84
11.8	Special Personnel Services Payments	17	0	-17
11.9	**Subtotal Personnel Compensation**	**$8,087**	**$8,077**	**-$10**
12.1	Civilian Personnel Benefits	2,681	2,786	105
12.2	Military Personnel Benefits	139	142	4
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$10,907**	**$11,005**	**$99**
21.0	Travel & Transportation of Persons	435	444	9
22.0	Transportation of Things	4	4	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	72	73	1
24.0	Printing & Reproduction	2	2	0
25.1	Consulting Services	6	6	0
25.2	Other Services	3,347	2,677	-670
25.3	Purchase of goods and services from government accounts	8,281	7,910	-372
25.4	Operation & Maintenance of Facilities	70	71	1
25.5	R&D Contracts	119	121	2
25.6	Medical Care	0	0	0
25.7	Operation & Maintenance of Equipment	12	12	0
25.8	Subsistence & Support of Persons	0	0	0
25.0	**Subtotal Other Contractual Services**	**$11,835**	**$10,798**	**-$1,037**
26.0	Supplies & Materials	154	157	3
31.0	Equipment	289	195	-94
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	57,128	50,852	-6,276
42.0	Insurance Claims & Indemnities	1	1	0
43.0	Interest & Dividends	0	0	0
44.0	Refunds	0	0	0
	Subtotal Non-Pay Costs	**$69,920**	**$62,526**	**-$7,395**
	Total Budget Authority by Object Class	**$80,827**	**$73,531**	**-$7,296**

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

NATIONAL INSTITUTES OF HEALTH
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Salaries and Expenses

(Dollars in Thousands)

OBJECT CLASSES	FY 2020 Enacted	FY 2021 President's Budget	FY 2021 +/- FY 2020
Personnel Compensation			
Full-Time Permanent (11.1)	$7,278	$7,362	$84
Other Than Full-Time Permanent (11.3)	569	576	7
Other Personnel Compensation (11.5)	137	139	2
Military Personnel (11.7)	84	0	-84
Special Personnel Services Payments (11.8)	17	0	-17
Subtotal Personnel Compensation (11.9)	**$8,087**	**$8,077**	**-$10**
Civilian Personnel Benefits (12.1)	$2,681	$2,786	$105
Military Personnel Benefits (12.2)	139	142	4
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$10,907**	**$11,005**	**$99**
Travel & Transportation of Persons (21.0)	$435	$444	$9
Transportation of Things (22.0)	4	4	0
Rental Payments to Others (23.2)	0	0	0
Communications, Utilities & Misc. Charges (23.3)	72	73	1
Printing & Reproduction (24.0)	2	2	0
Other Contractual Services:			
Consultant Services (25.1)	6	6	0
Other Services (25.2)	3,347	2,677	-670
Purchases from government accounts (25.3)	5,303	4,925	-378
Operation & Maintenance of Facilities (25.4)	70	71	1
Operation & Maintenance of Equipment (25.7)	12	12	0
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	**$8,737**	**$7,692**	**-$1,046**
Supplies & Materials (26.0)	$154	$157	$3
Subtotal Non-Pay Costs	**$9,404**	**$8,372**	**-$1,032**
Total Administrative Costs	**$20,311**	**$19,377**	**-$934**

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Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2019 Final			FY 2020 Enacted			FY 2021 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:	2	-	2	3	-	3	3	-	3
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	2	-	2	3	-	3	3	-	3
Division of International Relations									
Direct:	5	1	6	6	-	6	6	-	6
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	5	1	6	6	-	6	6	-	6
Division of International Science Policy, Planning and Evaluation									
Direct:	9	-	9	9	-	9	9	-	9
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	9	-	9	9	-	9	9	-	9
Division of International Training and Research									
Direct:	9	-	9	10	-	10	10	-	10
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	9	-	9	10	-	10	10	-	10
Office of Administrative Management									
Direct:	14	-	14	16	-	16	16	-	16
Reimbursable:	-	-	-	-	-	-	-	-	-
Office of Administrative Management									
Total:	14	-	14	16	-	16	16	-	16
Office of the Director									
Direct:	13	1	14	15	-	15	15	-	15
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	13	1	14	15	-	15	15	-	15
Total	54	2	56	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
2017	12 0
2018	12 0
2019	12 0
2020	12 0
2021	12 0

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Detail of Positions[1]

GRADE	FY 2019 Final	FY 2020 Enacted	FY 2021 President's Budget
Total, ES Positions	0	0	0
Total, ES Salary	0	0	0
GM/GS-15	8	8	8
GM/GS-14	14	19	19
GM/GS-13	10	12	12
GS-12	8	9	9
GS-11	0	0	0
GS-10	0	0	0
GS-9	2	2	2
GS-8	1	1	1
GS-7	6	6	6
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	50	58	58
Grades established by Act of July 1, 1944 (42 U.S.C. 207)			
Assistant Surgeon General	0	0	0
Director Grade	1	0	0
Senior Grade	1	0	0
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	2	0	0
Ungraded	3	3	3
Total permanent positions	52	58	58
Total positions, end of year	55	61	61
Total full-time equivalent (FTE) employment, end of year	56	61	61
Average ES salary	0	0	0
Average GM/GS grade	12.0	12.0	12.0
Average GM/GS salary	118,493	121,811	122,761

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