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Preserving the Fogarty International Center — Benefits for Americans and the World

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In his proposed budget for fiscal year 2018, President Donald Trump recommended eliminating the Fogarty International Center (FIC) at the National Institutes of Health (NIH). Although the NIH actually received increased funding in the fiscal year 2017 budget that was signed on May 5, the FIC — a leader of U.S. global health research efforts for the past 50 years — may be vulnerable in upcoming negotiations over the 2018 budget. NIH Director Francis Collins has signaled that while awaiting congressional guidance, he is evaluating whether he can justify continuing the FIC if the NIH faces budget cuts down the line.¹ In our view as current or past recipients of FIC support, the center represents a valuable and effective scientific and diplomatic

 **An audio interview with Dr. Drain is available at NEJM.org**

investment, and the small reduction in the federal budget that would result from its elimination would be far outweighed by what would be lost.

The FIC mission is threefold: to advance NIH goals by supporting global health research conducted by U.S. and international investigators, to build partnerships between research institutions in the United States and

abroad, and to train the next generation of scientists to address global health needs. The center's efforts have produced medical innovations that transcend borders. Its closure would not only be detrimental for global health but would also affect the health of Americans and impede training of U.S. scientists.

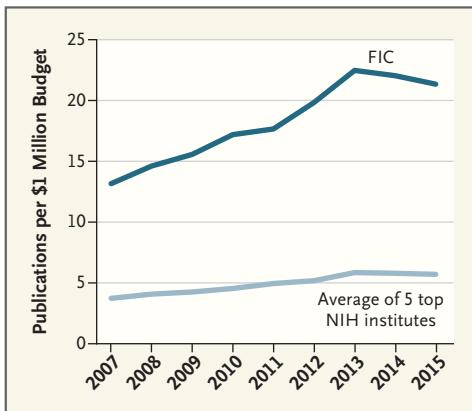
The FIC fosters research collaborations between U.S. and overseas institutions to develop treatments that reduce disability and save lives. Although the center has the smallest budget among the NIH's 27 institutes and centers (\$70.4 million in fiscal year 2016), FIC grantees have been among the most productive in publishing peer-reviewed articles (see graph). In 2015, researchers supported by the center published more than 20 articles per \$1 million of annual budget. Applications for FIC grants are highly competitive. In fiscal year 2016, applicants for a K01 career-development award from the center had a 22.7% success rate, as compared with 32.1% for such awards across all NIH institutes.

The FIC has funded wide-ranging studies whose findings are relevant to major health issues in the United States and elsewhere. FIC-supported researchers are

working to improve stroke prevention, treat multidrug-resistant tuberculosis, and evaluate HIV vaccine candidates. FIC-funded efforts are tackling the problem of fake medications that kill millions of patients worldwide and that many Americans purchase unwittingly; identifying new cancer drugs in the waters off the Panama coast; and finding ways to address the number-one killer of young American travelers, road traffic accidents.

About one third of FIC grants focus on scientific discovery, and two thirds support research training. The center's training programs have been a model of sustained, mission-driven efforts to equip U.S. scientists and their colleagues in low- and middle-income countries (LMICs) to collaboratively tackle the world's health challenges. For example, since 2003, the Fogarty Global Health Fellows and Scholars Program has provided yearlong research training experiences for doctoral and postdoctoral scientists at U.S.-funded LMIC research sites. Anchored by leadership and funding from the FIC, the program has leveraged support from many additional NIH institutes and centers.

Systematic evaluations of 558



Scientific Publications Indexed in PubMed from Fogarty International Center (FIC) Grantees and Grantees from the Five Highest-Funded National Institutes of Health (NIH) Institutes.

The NIH institutes with the largest budgets are the National Cancer Institute; the National Institute for Allergy and Infectious Diseases; the National Heart, Lung, and Blood Institute; the National Institute of General Medical Sciences; and the National Institute of Diabetes and Digestive and Kidney Diseases. Data are from the NIH Research Portfolio Online Reporting Tools (RePORT): Success Rates, 2017. Data obtained April 1, 2017. Publication numbers were obtained by PubMed searches based on the two- and three-letter grant codes for each NIH institute and center.

trainees supported by this program at 61 sites in 27 countries through 2012 showed that they had sustained engagement in research (67% success rate with subsequent grant applications) and that grantees considered the FIC funding to have been pivotal in establishing their careers and allowing them to develop the skills to mentor other research trainees.² Topics investigated by FIC trainees had substantial relevance to U.S. health conditions, including both infectious diseases (especially HIV–AIDS) and noncommunicable diseases; grants also cover research in basic science, health systems, and health behavior.² The majority of fellows are of U.S. origin, so the program represents an unusual and successful investment in U.S. research

capacity as well as diplomacy, yielding substantial research productivity, providing future research leaders with training experiences not available in the United States, and fostering supportive international relationships.

The FIC has also supported training for LMIC scientists through additional programs, including the AIDS International Training and Research Program, now called the HIV Research Training Program. This program has increased research capacity at both U.S. and LMIC institutions, since the U.S. institutional recipients of these grants have established or expanded their global health units and attracted U.S. and LMIC students for scientific training. LMIC trainees bring an added dimension to U.S. classroom discussions, with their firsthand knowledge of the conditions, culture, and health requirements in their countries. Some past trainees are now in leadership positions in international organizations such as the Pan American Health Organization, the Indian Council of Medical Research, and the Network of AIDS Researchers in Eastern and Southern Africa — enhancing the possibilities for global collaboration to address emerging disease threats that transcend borders.

These capacity-building investments in LMIC researchers have also provided foundations for groundbreaking studies implemented by other NIH institutes and U.S. and multinational organizations. A prime example is the HIV Prevention Trials Network (HPTN) 052 study, a randomized trial led by the National Institute of Allergy and Infectious Diseases, that proved that effective antiretroviral therapy stops the sexual

transmission of HIV (<https://hptn.org/research/studies/hptn052>). The trial, which could not have succeeded without LMIC sites, employed a network of 13 FIC-supported research sites in nine countries in Africa, Asia, Latin America, and North America and at least 13 key investigators who had received FIC-funded research training. The study provided a critical tool for breaking the back of the global HIV pandemic and transformed U.S. and global HIV treatment guidelines. Similarly, the PROMISE (Promoting Maternal-Infant Survival Everywhere) trial, conducted at 14 sites in seven countries with multiple key investigators who had received FIC-funded training, has informed strategies for preventing mother-to-child transmission of HIV in the United States and around the world.

The FIC's capacity-building investments are also facilitating innovative research in noncommunicable diseases. A region of Colombia has one of the highest rates of early-onset Alzheimer's disease in the world. The FIC and the National Institute on Aging supported the development of a U.S.–Colombian collaboration investigating this cohort, which laid the foundation for the first clinical trial of a U.S.-manufactured anti-amyloid therapy to prevent Alzheimer's disease.³

The center's investments in studying diseases that primarily affect LMICs also have considerable benefits for the U.S. population. The public health questions raised because of airplane travel by an American with multidrug-resistant tuberculosis in 2007, the infection of two American nurses in Texas with the Ebola virus in 2014, and cases of local

transmission of Zika virus in Florida in 2017 all highlight the security relevance of addressing diseases of global importance. The FIC's support of studies elucidating transmission patterns of multidrug-resistant tuberculosis in China⁴ and facilitating the elimination of pork tapeworm, which causes neurocysticercosis, in a region of Peru,⁵ for example, may thus have strong long-term benefits for the United States as well as for LMICs.

The FIC has been instrumental in extending the frontiers of health research around the globe and ensuring that advances in science are implemented to reduce the burden of disease, promote health, and extend longevity for all people. By facilitating rare training experiences for U.S. scientists in LMICs, the center has created a cadre of productive researchers with the capacity to find solu-

tions with regard to global diseases such as Zika and Ebola that will continue to threaten human health everywhere. FIC funding of training experiences for LMIC researchers has undergirded the NIH's capacity to conduct multinational studies, yielding insights that have transformed the care of patients in the United States and many other countries. For these reasons, we believe the U.S. Congress, the President, and the NIH should ensure that the FIC's funding is sustained. Preservation of the FIC and its globally oriented mission represents a critical investment in the health of the American people as well as the global community.

Disclosure forms provided by the authors are available at NEJM.org.

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