Fogarty at 50

Advancing science for global health since 1968

FOGARTY INTERNATIONAL CENTER
NATIONAL INSTITUTES OF HEALTH
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

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MESSAGE FROM THE DIRECTOR

Dear Colleagues and Friends,

As we mark our 50th year, it is appropriate that we both celebrate our many accomplishments and consider how best to tackle the new global health challenges of the 21st century.

The Fogarty International Center at NIH has had a rich and varied legacy since its establishment in 1968. In our first decade, our infancy, Fogarty served as a conference center for global health policy discussions and a convener of outstanding scientists from around the world to build collaborations with U.S. investigators. In the 1980s, as the extent of the global HIV/AIDS epidemic became clear, we began our first institutional extramural grant program, the AIDS International Training and Research Program or AITRP. Fogarty developed a model of partnering U.S. and foreign institutions in low- and middle-income countries to train the next generation of young investigators, to build a research base in areas where this was lacking, with the infrastructure required to conduct ethical, groundbreaking research. This approach has become the hallmark of Fogarty programs—taking science where the problems are and building local research capacity to solve them. The scientists who were first trained through our programs have become world leaders on the front lines in the battle to staunch the global epidemic of HIV/AIDS through innovative research, in collaboration with U.S. investigators, and with additional support from many others at NIH and beyond. The return on investment in people, partnerships and policies has truly changed the world.

More recently, this model has been extended beyond infectious diseases to chronic, noncommunicable diseases and disciplines critical to advancing the global health agenda from every specialty of the medical and health sciences—including areas not traditionally considered part of global health—such as economics, law, business, architecture, engineering and others.

Fogarty remains the smallest center at NIH with what is perhaps the broadest goal—investing to build the next generation of leaders in biomedical research and supporting training to make them productive collaborators who can contribute to discoveries that improve health globally, as well as in the U.S. For the last 50 years, Fogarty's focus has been on cultivating partnerships that advance science for global health. On behalf of all of our staff and our alumni, we thank you for your continued support.

Warm regards,

Roger I. Glass, M.D., Ph.D.
Director, Fogarty International Center
Associate Director for Global Health Research, NIH

How do Americans benefit from global health research?

Ensuring our nation's safety and security

As people and goods travel ever more quickly around the globe, so too do diseases. To protect Americans from deadly outbreaks of SARS, Ebola, bird flu and Zika, it is in our own best interest to train scientists in developing countries so that they are equipped to study pandemics at their origin, contain outbreaks and minimize their impact. We are all only as safe as our weakest link, and preparedness is much less expensive than disaster response.

At Fogarty, our core mission is to build research capacity in low- and middle-income countries—a long-term investment that pays huge dividends. In the case of the Ebola outbreak, countries with little or no scientific capacity suffered the most, and the cost of unpreparedness soared above $2 billion. Sufficiently strengthening expertise at local institutions, training health leaders and linking them to the global network of experts would require just a fraction of that amount. We know people with Ebola traveled across borders into some of the countries surrounding Guinea, Liberia and Sierra Leone. Why didn't outbreaks occur there? Because well-trained epidemiologists, lab technicians and others were on the scene, prepared to identify and treat those who were infected and ensure the disease did not spread. They were linked to global resources, and had access to technical advice and support—essential for pandemic response.

Promoting stability and economic development abroad

By supporting research that improves health in developing countries, NIH and Fogarty are also helping ensure societal stability and a healthy workforce, which can drive economic productivity. Data show malaria-free countries have economic growth that is five times greater than that of countries struggling with the disease.

Life expectancy has risen dramatically across sub-Saharan Africa as HIV/AIDS treatment and prevention programs have made inroads, but now chronic illnesses of aging pose new threats and require research to determine cost-effective interventions. Six of the fastest growing global economies are located in Africa, according to the World Bank, which makes the continent an increasingly important U.S. trading partner.

Remaining globally competitive in science

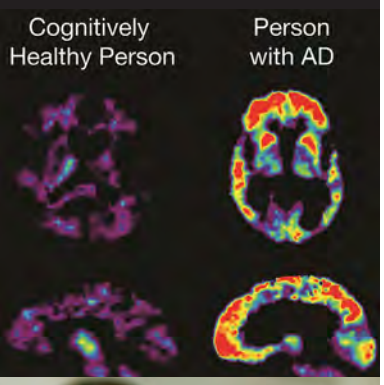
The growing complexity of health problems, advances in genomics and other fields, and the explosion of resulting data make international scientific collaboration more important than ever, if we are to maintain our position as a global leader in biomedical research. After all, good ideas can come from anywhere. Only by collaborating with others can Americans remain at the forefront of scientific discovery, in a position to rapidly move new drugs, diagnostics, vaccines and other advances from the lab to the clinic.

Producing discoveries that improve health

Global health research also pays dividends through scientific breakthroughs that result in new treatments that benefit Americans:

▶ Chemotherapy

Research conducted in Uganda in the 1960s laid the groundwork for chemotherapy treatment and accelerated research into whether viruses can cause cancer. After establishing a link between the newly discovered Epstein-Barr virus and a disfiguring form of non-Hodgkin lymphoma that mainly affected African children, Dr. Denis Burkitt brought chemotherapy drugs from the U.S., where they were being developed, back to Uganda and administered them to a child with full-blown disease. The child's tumor melted away in several weeks and chemotherapy became the treatment of choice for this lymphoma.



▶ Alzheimer's disease

We may learn the key to preventing the ravages of Alzheimer's disease by studying a small population in Colombia. Members of an extended family carry an unusual genetic mutation that raises the risk of both early onset Alzheimer's—as young as 35 years—and its rapid progression to severe senility. A U.S.-Colombian research collaboration is studying the relatives for genetic clues, trying to identify new biomarkers to monitor disease progression, and testing new treatments to slow down or ultimately halt its progression. With the economic cost of Alzheimer's set to reach $1 trillion annually by 2050, this is critically important work.

▶ Oral rehydration therapy

Studies conducted during a deadly cholera epidemic in Bangladesh in the 1970s, showed a simple, homebased remedy—a package of oral rehydration salts—when added to water could exactly replace the fluids and electrolytes lost from the disease and save the patient's life. The medical journal *The Lancet* touted this as one of the greatest public health breakthroughs of the 20th century and has attributed the treatment to saving one million lives a year. Today, many parents in America treat their sick children with Pedialyte® and similar products, which have their roots in the original cholera research.

In almost every branch of medicine, research conducted overseas has allowed us to advance our discoveries faster, cheaper and more efficiently than we ever could have at home. Americans are leaders in global health because we have been able to engage others to do studies that are not only locally relevant but also have clear implications for the U.S. Global health research truly is the new frontier of science.

Fogarty at 50: an introduction

These are exciting times for global health, with new opportunities for partnerships, emerging technologies with the potential to transform research, and scientific priorities that are evolving to match the changing burden of disease. Capitalizing on these developments demands a nimble and multidisciplinary research workforce that can function across cultures and borders to solve health problems.

Over the decades, Fogarty's programs have made significant contributions by filling the pipeline of global health leaders, extending the frontiers of science and accelerating discovery. Above all, Fogarty has invested and will continue to invest in people—the most important resource in global health research—who serve on the front lines of the fight against diseases that threaten populations in the U.S. and around the world.

Since its formation, Fogarty has served as a bridge between NIH and the greater global health community by facilitating exchanges among investigators, providing training opportunities and supporting promising research initiatives in developing countries. Over the last five decades, Fogarty programs have provided significant research training for about 6,000 scientists worldwide.

Fogarty supports research training at all career stages

Fogarty Scholars

Initial Experience

Dr. Magaly Blas began her global health career as a Fogarty Scholar, with a year of mentored research on HIV/AIDS. After earning her master's and Ph.D., she was able to conduct independent research as a Fogarty Fellow. Like her, 80 percent of all program participants continue in global health.

Fogarty Fellows

Early Career

Post-docs like **Dr. Bhakti Hansoti** can receive support for a year or two to continue field research and generate findings necessary to secure future funding, in addition to helping train foreign scientists. Participants form international research partnerships they often maintain throughout their careers.

Today, Fogarty funds some 500 research and training projects involving about 100 U.S. and foreign universities, as well as supporting activities in 120 countries. Fogarty research training programs are anchored to peer-reviewed research grants and designed to be collaborative, long-term, and flexible, meeting the research priorities of both the U.S. and foreign collaborators. Newly trained foreign scientists are encouraged to return home with the skills that allow them to conduct research. In countries where a critical mass of scientific capacity has been developed, local training programs are created and customized to address national research needs and priorities.

Health research in the 21st century is increasingly a team effort. Interdisciplinary research groups have been prime movers in the development of low-cost diagnostics and cost-efficient ways to prevent and treat disease. Research groups are best suited to address global health issues when the teams are multinational and sensitive to local culture and context. Building such teams in institutions around the world has been an important Fogarty strategy for decades.

To ensure research discoveries are more efficiently translated into health policy and practice, Fogarty has supported implementation science across its programs. Another area of focus has been to explore how mobile

Support to bridge the gap

Senior Scientist

Mid-Career

Bridging support is available to enable mid-career scientists, such as **Dr. Thomas Gaziano,** to advance to the next stage. He received a Fogarty Independent Research Scientist Development Award, which provided a stepping stone to competing successfully for an R01.

Trainee becomes trainer, research leader

After earning her master's and Ph.D. with Fogarty support, **Dr. Patty Garcia** became a principal investigator and mentor, building a research and training grant portfolio that encompasses more than 40 NIH awards at her institution in Peru. Recently, she served as her country's Minister of Health.

devices, electronic medical records and new technologies can be leveraged to revolutionize research approaches, support online collaborations and develop new teaching tools and methods of knowledge exchange.

Fogarty also convenes the best scientific minds around the world to address critical global health research problems such as polio eradication, the impact of climate change on disease outbreaks and strengthening research capacity in Africa. The Center's in-house scientists collaborate with colleagues globally to conduct research on the epidemiology and modeling of infectious diseases, producing data used to develop countermeasures for potential bioterror agents and public health actions to control the spread of infectious diseases. Meanwhile, Fogarty's international relations team identifies opportunities for collaboration and develops new partnerships among U.S. scientists, institutions and counterparts abroad to advance research and training.

Given the success of international efforts to prevent and treat HIV/AIDS, malaria and TB, life expectancy has risen dramatically in low- and middle-income countries (LMICs). These countries now share the same health challenges that we are facing in the U.S., such as cardiovascular disease, cancer, diabetes and other chronic diseases. Today, global health and local health are becoming one and the same and research conducted anywhere can help people everywhere.

Fogarty principles of successful programs