



FOGARTY INTERNATIONAL CENTER • NATIONAL INSTITUTES OF HEALTH • DEPARTMENT OF HEALTH AND HUMAN SERVICES

## Grantees assess long-term benefits of Fogarty training



The biomedical research enterprise in many developing countries has been transformed through decades of support from Fogarty's programs, which have provided training for thousands of scientists, improved early disease

detection capacity, launched scores of collaborations and produced numerous scientific breakthroughs. Through personal stories, statistical analyses and scientific examples, senior Fogarty grantees presented compelling evidence of the long-term impact of the Center's programs at a session held during the recent International AIDS Society (IAS) conference in Paris.

"I've seen firsthand the pivotal, central and critical role Fogarty played in building the science base in southern Africa to enhance the response to both the HIV and TB epidemics," said Dr. Quarraisha Abdool Karim, who co-chaired the panel discussion marking Fogarty's 50th anniversary, together with the Center's Deputy Director, Dr. Peter Kilmarx.

Fogarty was prescient in anticipating in the mid-1980s what the clinical trials capacity needs would be as the

HIV/AIDS epidemic spread across Africa and other low- and middle-income countries (LMICs), observed Abdool Karim, who is associate scientific director for the Center for AIDS Program of Research in South Africa (CAPRISA). A longtime Fogarty grantee, she said being able to build a critical mass of well-trained researchers created the opportunity for cutting-edge questions—relevant both locally and globally—to be asked and answered. Fogarty's research training programs helped foster international collaborations and effective mentor-trainee relationships, she said. "I think when we are dealing with a global problem, it's really important [to consider] how do we bring the best brains together and how do we work in a synergistic manner?"

In addition to encouraging young people to pursue scientific careers, Abdool Karim said Fogarty support helped establish strong research institutions "that create a very solid foundation to generate an evidence base for smarter and more efficient decision making." That has helped ensure the \$70 billion the U.S. has allocated to the HIV response in LMICs has been spent wisely, she noted. When the President's Emergency Plan for AIDS Relief (PEPFAR) was rolled out, many of the people who implemented the program on the ground were former Fogarty trainees, she said.

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## Senate proposes \$2M funding increase for Fogarty

The U.S. Senate has proposed \$74.38 million to fund Fogarty in Fiscal Year 2018, about \$2 million more than its current allocation. The House previously earmarked \$73.4 million for Fogarty in its appropriations bill.

In addition, the Senate suggested a \$2 billion increase for NIH, about double the amount specified in the House

version. Both contain language that would preserve NIH's current practices regarding support for indirect costs, which pay for administrative and facilities resources needed for research.

Congress passed a Continuing Resolution in September, funding the government through Dec. 8, 2017.

### FOCUS



#### Preventing childhood obesity in Latin America

- Fogarty-organized publication addresses rising obesity rates
- Authors propose a research agenda for the region
- Latin America's innovative interventions are examined

Read more on pages 8 – 9

# Fogarty supports training in Ebola-affected countries

Ebola struck hardest in three West African countries that had little scientific capacity to monitor or respond to the 2014-2016 outbreak. To better prepare health officials in Guinea, Liberia and Sierra Leone to deal with future infectious disease epidemics, Fogarty has issued a second round of four grants to help the countries develop research training plans.

In Guinea, an award will strengthen an ongoing south-south collaboration between Mali's University of Science, Technique and Technologies of Bamako and the University of Conakry to develop advanced degree and non-degree programs. The effort, which stresses clinical and health services research, brings together two French-speaking countries and principal investigators who were on the frontlines of the Ebola epidemic. It also draws on the expertise of researchers from NIH's National Institute of Allergy and Infectious Diseases (NIAID), Johns Hopkins University and Northwestern University.

The other three grants focus on Liberia. Boston University will use its award to assist the University of Liberia's (UL) medical school and health ministry to strategize how to

deploy training to address both a shortage of scientific faculty and lack of opportunity for mentored research. In addition, the University of California, San Francisco will collaborate with UL and UCLA to devise a master's-level training program for clinical and epidemiologic research in collaboration with PREVAIL, the Partnership for Research on Ebola Virus in Liberia, a clinical research initiative supported by NIAID. Finally, the University of Hawaii will team up with the University of Yaoundé in Cameroon to improve biomedical sciences at UL where only about one-third of the faculty have degrees above the bachelor's level. Initial goals include devising a career development plan, determining how to strengthen the curriculum and assessing the feasibility of distance learning.

The Fogarty program is intended to help institutions prepare to compete for larger, longer-term grants to implement their research training plans. In 2016, the first year of the program, Fogarty made four awards to fund projects in Sierra Leone and Liberia.

More info: <http://bit.ly/EbolaResearchTraining2017>

Photo by Karin Zaitvogel for Fogarty



## Fogarty welcomes new board members

Fogarty Director Dr. Roger I. Glass recently welcomed four new members to the Center's advisory board. Clockwise from right are Glass; Dr. Robert M. Einterz, associate dean for global health at Indiana University (IU) and director of the IU Center for Global Health; Dr. Gretchen L. Birbeck, neurology professor and research director of the Epilepsy Center at the University of Rochester Medical Center; Dr. Robert Bollinger, infectious disease professor and founding director of Johns Hopkins University's Center for Clinical Global Health Education; and John Monahan, senior advisor for global health to the president of Georgetown University and a senior fellow and scholar with its McCourt School of Public Policy and O'Neill Institute for National and Global Health.

## Funding partners relaunch World Report



An upgraded online database and mapping tool of global research investments has been relaunched. The new version of the interactive, open-access site for the first time depicts both direct and indirect awards supported by some of the world's largest biomedical research funders. Known as World Report, the website provides information by continent, country, funding organization, research organization and year. It has been updated to include funding data from 2016 and its archive of information goes back to 2012. Research projects can be searched by keywords in titles

and abstracts, filtered by location (continent, country or city), funding organization, research organization, principal investigator name, or any combination.

The project is intended to provide a public means to track international research activities and partnered investments, increase awareness of funding opportunities and share results with the broader research and funding community.

The site includes funding data from the Bill & Melinda Gates Foundation, Canadian Institutes of Health Research, European Commission, European & Developing Countries Clinical Trials Partnership, France's INSERM, Institut Pasteur, Max Planck Society, U.K.'s Medical Research Council, NIH, Swedish International Development Cooperation Agency, Swedish Research Council and the Wellcome Trust.

### RESOURCE

Website: <https://worldreport.nih.gov>



Fogarty staff and supporters celebrated 50 years of the Center's accomplishments at the International AIDS Society meeting in Paris.

## Grantees assess long-term benefits of Fogarty training

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As Ebola, bird flu, Zika and other challenges emerge, LMIC scientists are essential to global security. “This whole notion of early-warning signals, early responses to epidemics, they are also offshoots of this investment that was initially training for building clinical research capacity,” Abdool Karim noted.

In Haiti, Fogarty trainees have been “essential” to progress in HIV prevention and treatment research, said Dr. Jean William (Bill) Pape, director of GHESKIO, the world’s first institution dedicated solely to fighting HIV/AIDS. Pape looked back at some of the most significant scientific advances that GHESKIO has achieved with the help of several generations of Fogarty trainees. “There was a time when some prominent scientists didn’t want antiretroviral therapy (ART) to be used in LMICs because they feared lack of adherence to treatment protocols would increase drug resistance.” He and his colleagues showed in a series of landmark studies that Haitians living with HIV can follow complicated ART regimens, resulting in survival rates on a par with those in the U.S. These findings paved the way for widespread provision of ART in low-resource settings, saving millions of lives.

A Fogarty fellow himself from 1989-1990, Pape’s nearly three decades of Fogarty funding has enabled him to train hundreds of researchers. He says these scientists have, in turn, provided instruction to some 16,000 health care workers, helped scale up HIV and TB models to the national level, and notched up numerous firsts, including the establishment of Haiti’s national laboratory, the creation of the country’s national public health program and the introduction of a nurse practitioner initiative.

In Africa, “Fogarty has really changed the game” and has had a great impact on HIV/AIDS policy and practice, according to Dr. Salim (Slim) S. Abdool Karim, CAPRISA director and longtime grantee. Fogarty trainees have contributed to significant research that has advanced the understanding of the HIV transmission cycle, led to new

interventions to prevent transmission, and discovered how broadly-neutralizing antibodies are manufactured by HIV, which might be harnessed for a vaccine to prevent AIDS. He says the latter is an example of the multiplier effect of Fogarty, with three generations of trainees and mentors carrying this promising work forward over two decades. “This has been a rolling stone that’s gathering a lot of moss along the way and generating a whole slew of really exciting young scientists.”

There was little opportunity to conduct research during his medical studies, said Dr. James Hakim, professor at the University of Zimbabwe. The situation has improved, thanks to a program Fogarty helped establish in 2010 designed to strengthen medical education across Africa. The Medical Education Partnership Initiative (MEPI), supported by PEPFAR and NIH, was transformative and created a vital regional network that continues today, Hakim reported. The MEPI awards improved the quality and quantity of medical school graduates, increased faculty retention and promoted regionally relevant research, he said.

Another former trainee described how Fogarty support opened a whole new world of science and discovery for her when she was merely “an inconsequential, young African doctor.” Now deputy director of the Desmond Tutu HIV Centre—as well as IAS president—Dr. Linda-Gail Bekker said the four years she spent in the late 1990s earning her Ph.D. at Rockefeller University in New York City propelled her career forward. “The wonderful combination of being able to move north-south meant that I was able to access the best animal facilities, leading laboratories, really engage in translational science in inspirational settings, establish great networks, get linked into academia, while able to leverage the disease burden at home—an unbelievable set of opportunities.”

Worries about how to cultivate young African scientists today are what keeps Dr. Glenda Gray awake at night. A former Fogarty trainee and grantee, Gray is now president and CEO of the South African Medical Research Council, responsible for ensuring the quality of her country’s clinical researchers. The pipeline of scientists is not robust, she said. “The research opportunities and the need for research currently outstrip our ability to develop world-class scientists in Southern Africa,” Gray continued. “This is the time that we need Fogarty more than ever.”

The Center remains firmly committed to its research training mission, its director Dr. Roger I. Glass assured the gathering. “We at Fogarty think that investing in capacity building, in future researchers, is perhaps one of the most influential contributions we can make to advance HIV studies and the entire global health agenda.”

### RESOURCES

<http://bit.ly/FogartyIAS2017>

# PROFILE

## Fogarty Fellow studies suicide prevention in teens with HIV

By Karin Zeitvogel

Dr. Dorothy Dow had been working since 2011 in a clinic in Tanzania, focused on pediatric infectious diseases and prevention of mother-to-child transmission of HIV, when she observed something troubling: HIV mortality rates were increasing among teens even as they declined in most other age groups. The deaths weren't caused by the virus itself or lack of access to treatment, said Dow, but by the stigma associated with being diagnosed with the illness and teens' inability to cope mentally with the news. "There was an adolescent HIV epidemic unfolding and youth were committing suicide. I wanted to dig deeper into this and find out why it was happening," said Dow.

Having gone to Tanzania to conduct biomedical research into HIV, Dow shifted her focus to the mental health of teens with the disease, most of whom had been infected perinatally. She harnessed the Fogarty Global Health Fellowship she was awarded and in 2014 began conducting research to try to better understand the psychological difficulties experienced by youth living with HIV in Tanzania.

As she compared the interventions used for HIV-positive teenagers at the Kilimanjaro Christian Medical Center (KCMC) with those at the nearby Mawenzi Government Hospital, Dow found that the rate of mental health problems among teens at Mawenzi was double that at KCMC. One key difference between the two healthcare facilities was that KCMC ran a clinic just for teens, while the other had no such program. Dow and her colleagues presented data they'd gathered to Mawenzi, showing the difference in outcomes between its approach to HIV-infected teens and that of KCMC, and encouraged the hospital to offer a clinic where those adolescents could discuss not only prevention and treatment options but also the mental health issues associated with the disease.

"Had I not been on the ground in Tanzania, I don't think I'd have seen the problem the same way," said Dow. "Fogarty has been instrumental in my career path by allowing me first to be on the ground with my fellowship, and then to stay on the ground with an International Research Scientist Development Award



**Dorothy Dow, M.D., M.Sc.-G.H.**

Fogarty Fellow: 2014 – 2015

Fellowship at: Kilimanjaro Christian Medical Center, Tanzania

U.S. partner: Duke University

Research focus: Mental health needs of HIV-positive teens

(IRSDA), or K award, which I received in 2015."

Supported by Fogarty and the National Institute for Mental Health, Dow is using her grant to research how to improve teenagers' HIV outcomes and adherence to antiretroviral therapy by addressing the mental health treatment gap that exists in Tanzania.

"We've helped more and more children survive until their teenage years through interventions such as preventing mother-to-child transmission and by raising awareness of what causes HIV, but once they hit adolescence, we start to lose them," said Dow. "Around half of new HIV cases in Tanzania occur in the 15-24 years' age group, and there are no mental health professionals available to help them with the psychological distress of living with HIV. I think that's because we've neglected the social determinants and the mental health components, and because the youth need to be at the table with us, to help us figure out how to help them."

With 85 percent of the world's HIV-infected teens living in Africa, the continent is the best place to conduct meaningful research into the intersection of HIV infection and adolescents, Dow said. But she insisted her research results from East Africa are highly relevant to the United States. "The HIV patients I see in Tanzania are very similar to the HIV patients I see at Duke University," where Dow is an assistant professor. "There are lessons from our project in Tanzania that we can apply in the U.S., and I fully expect our project in Tanzania to be an example of the south teaching the north, of how global is local."

## LINDA-GAIL BEKKER, MBCHB, DTMH, DCH, FCP(SA), PHD

*Dr. Linda-Gail Bekker began a two-year term as president of the International AIDS Society in 2016, after years of working as a physician-scientist focused on HIV, tuberculosis and related diseases. Born in Zimbabwe, Bekker did her undergraduate and postgraduate medical training in South Africa, and completed her Ph.D. in the United States with Fogarty support. She is a professor of medicine at the University of Cape Town, deputy director of the Desmond Tutu HIV Centre at the university's Institute of Infectious Disease and Molecular Medicine, and COO of the Desmond Tutu HIV Foundation, a nonprofit that works to improve the well-being of people from some of South Africa's poorest communities.*



### What impact has Fogarty had on your career?

Fogarty funded my Ph.D., which I see as the foundation of my research career. At the time, in the late 1990s, there were few options in South Africa for stepping out of a clinical career and going into research. It's only because I had Fogarty support that I was able to go to an amazing hall of learning, Rockefeller University in New York, to do my Ph.D. There, my horizons expanded logarithmically. I found a world of research that it would have taken me years to discover if I'd stayed in South Africa—if I'd discovered it there at all. It's impossible to put a price on the opportunity Fogarty gave me.

After I completed my Ph.D., I came back to South Africa, where I've been a researcher ever since. With my husband, I now run a research organization called the Desmond Tutu HIV Center, which employs some 400 people who do a variety of clinical and implementation science research projects in South Africa. We've accessed a variety of Fogarty opportunities, including a small grant that allowed us to bring implementation science fellows into our organization. This was a great opportunity to build the capacity of young people. Fogarty's investment may appear to be in a few individuals in a small country in the global south, but the ramifications for public health are felt worldwide.

### How has Fogarty helped advance global HIV research?

NIH funds fantastic research and Fogarty backs this up with excellent capacity building. Thinking that we can do research without good training, without building scientific capacity is wrong and in many ways deluded. The two go hand in hand, and HIV illustrates this in the most extraordinary way. In 30 years, we've taken the worldwide HIV epidemic, which could have killed 78 million people, and through excellent clinical, basic and translational research, have brought it pretty much under control. It's through science and research that we've arrived at this extraordinary place in a very short space of time, in large part because of the amazing

commitment of the U.S. and its ability to channel money into good science and good translational work.

### What role does U.S. support play in the fight against HIV?

U.S. funding for programs like PEPFAR (the President's Emergency Plan for AIDS Relief), research opportunities through the NIH and Fogarty-supported training have literally changed lives, not only in low-income countries but also in the U.S. I've met HIV-infected mothers who've been able to raise their children; breadwinners who have been able to continue to support their families. I've seen great science being done around the world because of the amazing generosity of the U.S. We're all looking to build a world where we understand each other better, tolerate each other better, and U.S. support for training and research helps to make that kind of world a reality—one where we get on a lot better, one that has less disease and where we can go about our lives in ways that most people want to.

### How do you see the future of HIV/AIDS?

My husband and I have a 15-year-old son and I imagine that, one day, he'll walk in a world where HIV is no longer a threat. We're going in the right direction, but if we don't walk quickly and resolutely down that road, we could lose all the gains we've made in the first 30 years of the fight against HIV.

Research has a key role to play in achieving that. Let's take the story of the automobile as an example. We didn't make the first car and then stop working on that original design. Cars have changed and grown over the years, and no one thinks we should stop improving on them. Health care is the same. Public health requires us to constantly be finding new solutions, sometimes to the same old problems, but in many cases to new problems that come around the corner and require an innovative approach. To stop funding research now would not only be a tragedy, but would take us back further than we were a few years ago.



The emocha mobile app, now used with TB patients, was originally developed in Africa and tested by Fogarty grantees.

Courtesy of emocha Mobile Health

# Tech designed for Africa helps US fight disease, save money

By Karin Zeitvogel

A mobile health tool conceived by a Fogarty grantee to support clinicians caring for HIV patients in Uganda is now creating American jobs, fighting disease, tackling the opioid epidemic, and saving money in health departments across the U.S. The platform is called emocha, which stands for electronic mobile comprehensive health application.

“It allows us to harness a piece of technology that most people have—a cellphone—and use it to not only improve health care for villagers in Uganda, but also for people in rural Texas and inner-city Maryland,” said Dr. Robert Bollinger, the founder of Johns Hopkins University’s Center for Clinical Global Health Education, and the Fogarty grantee who came up with the concept for emocha. “It’s helped health departments in the U.S. save money, has created over a dozen jobs in Baltimore, and is spawning new employment and partnerships elsewhere.”

It was in 2008, sitting under a shade tree in an East African village, that Bollinger sketched out on a piece

of paper how the mobile phones that even the poorest Ugandan in the remotest village seemed to have could be harnessed to improve health. Bollinger wanted an app that would allow information to be sent by the touch of a button on a phone, and trigger “a series of strategic public health and clinical reactions throughout the health system,” he said. The platform had to be secure enough to meet strict U.S. patient privacy rules, and the whole process—from the message being sent to the health authorities’ response being activated—should happen within 10 minutes. It was a fairly tall order, but within months, clinicians in rural Uganda were using emocha on their cellphones to securely exchange data with health officials in distant cities.

The app developed for Uganda allowed health workers to watch training videos, access university libraries, securely enter patient data and capture their location using GPS technology—all via a mobile phone touch-screen. Within six years, emocha had been deployed

in 20 countries and expanded its portfolio of applications, allowing health workers from India to South Africa, and Bolivia to Australia to use mobile phones to control dengue; screen for HIV, cancer or diabetes; track the insects that transmit Chagas disease; and more.

With doctors from around the world contacting Bollinger to get emocha deployed in their countries, Johns Hopkins in 2014 licensed the technology to emocha Mobile Health. The Baltimore-based company added video directly observed therapy (video DOT) to emocha, allowing patients to use their phone to film themselves taking medication; enter cravings, symptoms, or side effects data for conditions like opioid addiction, tuberculosis or hepatitis C; and send the information to their care providers.

“By digitizing directly observed therapy, where a health care worker has to physically be with the patient to confirm they take their medications, we’ve made it more affordable for health departments to manage diseases like tuberculosis,” said emocha co-founder and managing director, Morad Elmi. “By law, TB patients must be observed when they take their medication. Until we created our video DOT application, there was no efficient, scalable, cost-effective way to confirm dose-by-dose medication ingestion.”

To be cured of TB, patients must take antibiotics daily for at least six months, and be observed by a medical practitioner while doing so. The regimen is costly—more than \$1 million for a single patient with drug-resistant TB—and missing a dose can set the patient’s treatment plan back to zero. In places where video DOT has been introduced, adherence to TB treatment has increased from 50 percent to 90 percent, not only saving lives but also money.

Emocha Mobile Health has expanded to include about a dozen employees in Baltimore and is continuing to attract clients with new apps addressing U.S. and global health concerns including weight control, smoking cessation, congestive heart failure and infectious diseases such as measles, Ebola or MERS. Without Fogarty, none of that would have happened, said Bollinger.

“It was Fogarty scholars and former trainees who tested our mHealth app and gave us honest, scientific and properly validated assessments and reviews of it when we launched in Uganda,” he explained. “Fogarty has a very strong program that has produced well-trained researchers there. Without access to Uganda’s Fogarty alumni, we never would have gotten anywhere with emocha—or at least not as quickly as we did.”

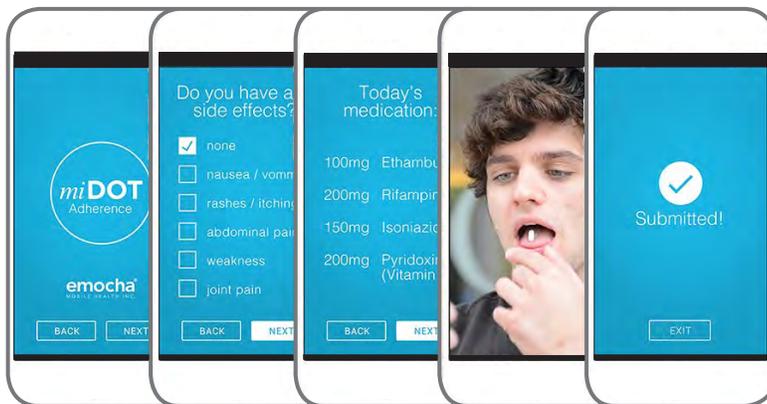
Among the scientists who tested the mobile health platform was former Fogarty trainee, Dr. Elioda Tumwesigye, now the head of Uganda’s Ministry of Science, Technology and Innovation. He worked with another Fogarty alum, Dr. Henry Tumwebaze, to capture data about the HIV status of nearly 900 adults living in the southwestern region of the country. The study, supported by the NIH’s National Institute of Allergy and Infectious Diseases, found that providing in-home HIV counseling and testing led to higher uptake of HIV prevention and care services through referrals, and better targeted follow-up than had been accomplished through other strategies.

With a \$1.7 million grant from the



NIH’s National Institute on Drug Abuse, emocha is testing how video DOT can help bring the U.S. opioid crisis under control. Specifically, video DOT is being used to monitor adherence to a treatment regimen that uses buprenorphine, a drug that acts on the receptor targets of heroin

report side effects and cravings, access local resources, receive medication reminders, and visualize progress in their recovery,” said Elmi. “Providers or a care team can then assess the data and engage with the patients who need it most. This will help more patients recover faster and can help reduce medication diversion.”



An emocha app provides a directly observed therapy (DOT) interface for TB patients, reducing the number of clinic visits needed for their treatment, lowering costs.

and morphine without producing the same intense “high” or dangerous side effects. Unlike methadone, which must be administered in a highly structured clinic, buprenorphine can be dispensed in a doctor’s office or prescribed for take-home use, reducing stigma and increasing access to treatment. But for buprenorphine to successfully help someone to kick addiction, a well-regimented treatment plan must be followed. That’s where video DOT can play a role.

“Our technology will support patients who are beginning or struggling to achieve stability in buprenorphine treatment. Patients will record themselves taking buprenorphine,

“Just as it has done with TB, video DOT could save American lives and money if it is found to be successful in helping opioid users to kick their habit. The U.S. opioid epidemic is estimated to cost more than \$78.5 billion a year, in health care and criminal justice expenses, as well as lost productivity. In Harris County, Texas, where emocha is being used to improve adherence to costly TB and hepatitis C treatments, health officials say they have seen “noticeable reductions in outreach worker costs and travel expenses.” A study conducted in Maryland by Johns Hopkins researchers concluded that video DOT saved more than \$1,400 per TB patient over a six-month treatment period compared to traditional observed therapy.

“Emocha is showing that a project conceived to improve health in Uganda can have a huge return on investment in the U.S.,” said Elmi. “We’ve hired people, all U.S.-based, we’re helping health departments save taxpayers’ money—and we’re improving the health of people in the United States, and around the world.”

## Preventing childhood obesity in Latin America

By Shana Potash

**G**rapppling with childhood obesity rates that are among the highest in the world, Latin America is experimenting with a number of innovative prevention strategies. To better understand the causes of the epidemic and the most effective ways to address them, a new publication organized by Fogarty staff offers a research agenda for the region, examines recent programs and policies, and identifies areas where research capacity could be improved.

“Preventing Childhood Obesity in Latin America: An Agenda for Regional Research and Strategic Partnerships,” a special issue of the journal *Obesity Reviews*, is the result of a workshop hosted by Fogarty’s Center for Global Health Studies. The meeting brought together U.S. and Latin American scientists, policymakers and implementers and laid the foundation for the five-article supplement authored by Fogarty staff along with researchers in the U.S., Argentina, Chile, Guatemala, Mexico and Peru.

“This is a problem that has to do with behaviors, and you really need to look at the factors in the environment and the individual that influence those behaviors,” explains Dr. Juan A. Rivera, General Director of Mexico’s Institute of

*A new Fogarty-organized publication provides a research agenda that includes study of interventions to increase children’s physical activity, especially in urban areas, to reduce the obesity epidemic in Latin America.*

Public Health, who co-chaired the meeting and co-edited the supplement. “It’s a complex issue,” he says. “There is no silver bullet in the fight against obesity.”

For the best chance of success, interventions should be evidence-based and developed and implemented with support from multiple disciplines and sectors—from academia to industry and grassroots to government, the authors suggest. And, to have the greatest impact—and head off comorbidities such as cardiovascular disease and diabetes—prevention efforts must start at an early age.

“Obesity is kind of a wave that is catching younger children who are adopting different lifestyles and eating patterns,” says Dr. Benjamin Caballero, professor emeritus with Johns Hopkins Bloomberg School of Public Health, who also co-chaired the meeting and co-edited the supplement. “A child who reaches puberty being obese can have a big risk of continuing to be obese as an adult, and this type of obesity is very difficult to overcome.”

### Examining the drivers of obesity

Currently, more than 20 percent of the region’s children younger than 20 years old are overweight or obese and those rates are expected to rise if no action is taken.

Improved socioeconomic conditions, rapid urbanization and a proliferation of supermarkets and fast food outlets

are among the factors researchers have identified as contributors to unhealthy diets, sedentary behaviors and childhood obesity.

A nutrition transition toward foods that are energy-dense and nutrient-poor is evident throughout the region, the supplement reports. Since 1998, sales of snacks, sugar-sweetened beverages and frozen, ready-to-heat foods have climbed in many countries. An increasing share of the retail sector is occupied by supermarkets, which sell more packaged and processed goods than traditional open-air markets. And, fast food chains have grown exponentially—McDonald’s, for example, surged from 100 outlets in 1995, to more than 2,200 in 2014.

This increased availability of calorie-laden foods is occurring in what is



the most inactive and urbanized region in the world, the scientists say. Almost 80 percent of people in Latin America live in metropolitan areas where crime, traffic and limited open space can lead to physical inactivity.

### A research agenda to prevent obesity

Adding to the complexity of the obesity epidemic is the problem of undernutrition which, while improving, is still prevalent in some areas, creating a dual burden of disease and the need for interventions addressing both ends of the nutrition spectrum.

While the region has its challenges, it also has its strengths. “We have a bit of a sweet spot in Latin America,” says Dr. Michael Pratt, a professor with the University of California, San Diego School of Medicine who was a workshop participant and an author on two articles. “There’s a political will and interest in taking these issues on that’s spurring very innovative approaches,” he says. Additionally, there are some strong research and training institutions providing a base on which to build.

It is against this backdrop that supplement authors propose a research agenda focusing on five areas. To understand the relationship between undernutrition and obesity, the authors say “biological challenges across the life cycle” should be examined. Can a mother’s physical activity during pregnancy, early feeding and activity patterns, and ethnicity or indigenous ancestry play a role in obesity?

Another line of inquiry would explore direct and indirect drivers of dietary and activity patterns. How does the availability and price of food, or the marketing of products, impact choices? Are government efforts, such as dietary guidelines and package labeling policies, effective?

Noting a need for more data, research to improve surveillance and measurement is among the priorities. Recommendations include incorporating routine monitoring of physical activity and nutrition into national health surveys and examining how transportation systems, for example, impact activity.

Evaluation of programs that encourage people to make lifestyle changes is another suggested focus and includes leveraging technology to encourage children and teens to exercise and eat a healthy diet. Recognizing Latin America’s leadership in adopting innovative policies, the agenda calls for research to assess their implementation and to determine how an effective intervention can be adapted elsewhere.

### Translating research into policy and practice

Mexico’s tax on sugar-sweetened beverages, package labeling requirements in Chile and Ecuador, and Argentina’s regulation of trans fatty acids are examples of policies based on scientific evidence. There’s also research



The rise in fast food consumption is one reason more than 20 percent of Latin American children are overweight or obese, researchers report.

Photo by David Rockkind for Fogarty

to support *Ciclovía recreativas* or “open streets” programs, which temporarily close roads to vehicular traffic to transform them into recreational areas for cycling and other activities. The idea, which began in Colombia, has spread to nearly 500 cities in Latin America as well as countries outside the region, including the U.S.

These interventions are highlighted in the supplement as case studies of how research was successfully—although not always easily—translated into practice. Collaborations among scientists, policymakers and advocates were key to communicating research findings to different audiences, overcoming potential barriers and directing investigators to policy-related questions. Implementation science, the authors note, can contribute to the successful deployment of policies.

There is room for growth in the research capacity needed to generate evidence for prevention initiatives, according to an analysis of published articles reported in the supplement. Obesity was the most-covered research topic, appearing in about half of the articles, signaling a need to invest in capacity to address nutrition, physical activity and other obesity-related issues. Few articles reflected partnerships or collaborations among scientists from different countries, which the supplement authors say would strengthen institutions and harness complementary expertise, as exemplified by HIV research in Africa. In addition, there were very few intervention studies and policy research papers published, which suggests a void in capacity related to that type of work. Further efforts have the potential for great impact globally, the authors agree.

“Improving research and capacity in Latin America might really pay off not just for the region, but around the world because there are some fascinating things going on,” says Pratt. “If they are well evaluated, they can guide policies not just in the region, but with a certain amount of adaptation, potentially in many other countries.”

### RESOURCES

Website: <http://bit.ly/PreventingChildhoodObesity>

## How can we conduct research in humanitarian crises?



When Hurricane Harvey struck Texas, I found myself stranded in Houston. From my perch on the 16th floor of a downtown apartment building, I watched the water rise, inching up until it covered many of the roadways around me. Turning on television news, I saw similar images from the other side of the world,

as people in Bangladesh, India and Nepal struggled to survive horrific floods. My sense of helplessness at my inability to alleviate their suffering was overwhelming.

Then came Hurricanes Irma and Maria, devastating much of the Caribbean and causing death and destruction across Florida and Puerto Rico. In their aftermath, we have seen elderly die from the extreme heat, and others succumb to infections from polluted water. We are watchful for an increase in mosquito populations and the disease risks they bring. In the aftermath of flooding in South Asia, thousands became ill with diarrhea and respiratory infections.

Officials are also struggling to provide services for about half a million Rohingya people who've arrived in Bangladesh since August. Many fled Burma with nothing but the clothes on their backs and are traumatized and in need of clean water, sanitation and shelter.

Disaster also struck closer to home, when Mexico City was again rocked by an earthquake that killed hundreds and left many others with terrible trauma and injuries.

It is astonishing to me that these are only the crises we have witnessed in the last month! When we consider the world's ongoing humanitarian disasters, numerous conflict zones, overflowing refugee camps, deadly infectious disease outbreaks, famine-ridden territories and on and on, we can see there is great unmet global need. How can we improve our response to these all-too-common occurrences? How can we better prevent and treat the resulting physical and emotional injuries? How can we help communities be more resilient to these shocks? What is the research agenda and how can we conduct studies in the midst of these tragic events?

So it is timely that we are launching a new activity—Conducting Health Research in Humanitarian Crises—led by our in-house think tank, Fogarty's Center for Global Health Studies. This cross-cutting project aims to encourage more research in humanitarian emergencies, increase collaboration among investigators and aid organizations, and identify strategies to ensure uptake of evidence into policy and practice.

Natural disasters affect about 160 million people worldwide each year, with a disproportionate impact falling on those living in low- and middle-income countries (LMICs). Another 170 million people globally have seen their lives disrupted by armed conflict. Many of them have been forcibly displaced and are living in temporary circumstances that may lack security, clean water, sanitation, medicine and an adequate food supply. Children in LMICs experiencing conflict are at tremendous risk and are twice as likely to die before the age of five than children in more stable settings.

While humanitarian crises are incredibly difficult environments in which to conduct research, there are many pressing questions that cry out for answers. Response efforts are often based more on anecdotal experience rather than evidence from rigorous research. Importantly, we are building on a wealth of expertise from the NIH Disaster Research Response program, which offers data collection tools and protocols. Our project will further develop that by adding a focus on LMIC settings, and take a deeper look at cross-cutting challenges such as methodological barriers, ethical issues, partnership strategies, research capacity building, implementation science and research uptake.

To assist us in this endeavor, we are fortunate to have two excellent project co-chairs—Dr. Iman Nuwayhid of the American University of Beirut and Dr. Brandon Kohrt of George Washington University. For this initiative, we are collaborating with our partners across NIH and representatives from the world's leading research and humanitarian organizations.

I hope other members of our community will also see this as a priority and provide input. For the millions suffering around the world, research to improve the global humanitarian response can't come a day too soon.

### RESOURCES

<http://bit.ly/ResearchCrises>



## Green tapped as USAID administrator

Mark Andrew Green has assumed leadership of USAID. A former U.S. congressman with international experience, Green has served as U.S. Ambassador to Tanzania, and as a board member of the Millennium Challenge Corporation, an independent U.S. government agency tackling global poverty. Most recently Green was president of the International Republican Institute.



## Dybul leads Georgetown's new global health center

Georgetown University Medical Center named Dr. Mark Dybul director of its new Center for Global Health and Quality. He previously served as executive director of the Global Fund to Fight AIDS, Tuberculosis and Malaria. During his tenure as U.S. Global AIDS Coordinator he oversaw development of the President's Emergency Plan for AIDS Relief (PEPFAR).



## Roux Prize awarded to Mali's Samba Sow

Malian scientist and University of Maryland professor Dr. Samba Sow has been awarded the 2017 Roux Prize. A Fogarty collaborator, Sow will receive \$100,000 in recognition of his work using health data to save children's lives. He generated metrics on the Haemophilus influenzae type b disease that convinced policymakers to institute a nationwide vaccination program.



## CDC's Khabbaz has new infectious diseases role

Dr. Rima Khabbaz has a new position as the CDC's Director of the National Center for Emerging Zoonotic Infectious Diseases. Khabbaz, a graduate of the American University of Beirut, has held numerous CDC leadership roles since the 1990s and currently also serves as acting deputy director for infectious diseases.



## UVA honors Vivian Pinn for leadership, contributions

The University of Virginia has recognized Fogarty scientist emeritus Dr. Vivian Pinn by renaming one of its buildings for her. The sole female and minority student in UVA's medical school class of 1967, Pinn went on to become the first director of NIH's Office of Research on Women's Health.



## Former grantee joins Argentine Ministry of Health

Former Fogarty grantee Dr. Adolfo Rubinstein, a physician and epidemiologist, has joined Argentina's Ministry of Health as Secretary of Health Promotion, Prevention and Risk Control. Rubinstein held a Fogarty NCD research training grant while serving as director of the nonprofit Institute for Clinical Effectiveness and Health Policy in Buenos Aires.



## CGD names new Global Health Policy Director

The Center for Global Development, an independent nonpartisan think tank that works to reduce poverty in developing countries, has named Dr. Kalipso Chalkidou as its new director of Global Health Policy. Chalkidou most recently worked at the Imperial College London and previously was with the UK's National Institute for Health and Clinical Excellence.

## Former CDC director to helm new venture

A \$225 million global health initiative to accelerate progress in reducing cardiac deaths and preventing pandemics will be led by former CDC director Dr. Tom Frieden. The effort—titled Resolve—is backed by Bloomberg Philanthropies, the Chan Zuckerberg Initiative and the Bill & Melinda Gates Foundation. Website: [www.resolvevetosavelives.org](http://www.resolvevetosavelives.org)

## Gates foundation measures progress

A new annual report called Goalkeepers will measure progress on achieving the Sustainable Development Goals, the Bill & Melinda Gates Foundation has announced. The initiative is intended to accelerate progress by diagnosing problems, identifying solutions, measuring results and promoting best practices. Website: [www.globalgoals.org](http://www.globalgoals.org)

## WHO offers free crisis response courses

WHO has launched a new e-learning platform with free video courses on epidemics, pandemics and health emergencies. Called OpenWHO, the programs transform complex scientific knowledge into easy-to-understand introductory video lessons. Website: [www.openwho.org](http://www.openwho.org)

## GBD study reveals leading causes of illness

Obesity, conflict and mental illness form a "triad of troubles" that cause the greatest impact on the world's health, according to the latest Global Burden of Disease study. On the positive side, the data published in *The Lancet* show under-five childhood mortality has been cut by more than half since 1990. Journal: [www.thelancet.com/gbd](http://www.thelancet.com/gbd)

## Global Health Innovation journal launched

Social and technological innovation for improved health and health care in developing settings will be the topics covered by a new journal jointly produced by Northwestern University and the Universities of Lagos, Ibadan and Cape Town. Its development was supported by a Fogarty grant. Website: <http://bit.ly/GHInnov>

## White House details US priorities for science

America's standing as a world leader should be maintained, according to a White House memo released in August that describes the administration's research and development priorities. Agencies were directed to focus investigations on finding solutions for an aging population, combatting drug addiction and addressing other public health crises. Memo: <http://bit.ly/WHscience>

Funding Opportunity Announcement	Details	Deadline
Global Brain and Nervous System Disorders Research across the Lifespan (R21) (R01)	<a href="http://bit.ly/GlobalBrainR21">http://bit.ly/GlobalBrainR21</a> <a href="http://bit.ly/GlobalBrainR01">http://bit.ly/GlobalBrainR01</a>	Nov 7, 2017 Nov 7, 2017
Emerging Global Leader Award - Career Development (K43)	<a href="http://bit.ly/GlobalLeaderOp">http://bit.ly/GlobalLeaderOp</a>	Nov 7, 2017
Reducing Stigma to Improve HIV/AIDS Prevention, Treatment and Care in LMICs (R21)	<a href="http://bit.ly/StigmaHIVAIDS">http://bit.ly/StigmaHIVAIDS</a>	Dec 11, 2017
Global Noncommunicable Diseases and Injury Research (R21)	<a href="http://bit.ly/NCD-injury">http://bit.ly/NCD-injury</a>	Dec 14, 2017
International Research Scientist Development Award (IRSDA) (K01)	<a href="http://bit.ly/IRSDA2018">http://bit.ly/IRSDA2018</a>	Mar 7, 2018
Planning for Noncommunicable Diseases and Disorders Research Training Programs in LMICs (D71)	<a href="http://bit.ly/NCDlifespans">http://bit.ly/NCDlifespans</a>	Mar 14, 2018
International Research Ethics Education and Curriculum Development Award (R25) (D43)	<a href="http://bit.ly/Ethicsop">http://bit.ly/Ethicsop</a> <a href="http://bit.ly/EthicsTrainingop">http://bit.ly/EthicsTrainingop</a>	May 17, 2018 May 17, 2018

For more information, visit [www.fic.nih.gov/funding](http://www.fic.nih.gov/funding)

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### Fogarty grantee receives Hilton Humanitarian Prize

A Bangladesh-based nonprofit organization is the 2017 recipient of the Hilton Humanitarian Prize, which is accompanied by \$2 million in unrestricted funding. The Conrad N. Hilton Foundation said it's honoring icddr,b for "its innovative approach to solving global health issues impacting the world's most impoverished communities."



@Shumon Ahmed/icddr,b

Icddr,b, a longtime Fogarty collaborator and grant recipient, has served for decades as a global hub for cutting edge studies of enteric diseases. Its research portfolio includes evaluations of new vaccines and treatments for enteric and respiratory infections, novel interventions for preventing and treating malnutrition, and innovative approaches for detecting and containing emerging infectious diseases, among others.

The institution was established to discover treatment solutions for cholera and other diarrheal diseases, and has since grown into the world's largest diarrheal hospital treating more than 200,000 patients a year, almost all of whom recover within 36 hours. Notably, its development of Oral Rehydration Solution, an inexpensive treatment for the symptoms of diarrheal disease connected to cholera, has saved tens of millions of lives.

### RESOURCE

Website: <http://bit.ly/HiltonICDDRB>