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\$45 million USAID award goes to African HIV consortium

By Susan Scutti



Dr. Sophia Osawe, a member of the BRILLIANT Consortium and former Fogarty Global Health Fellow, works at the international research center of the Institute of Human Virology in Nigeria.

The South African Medical Research Council (SAMRC) received a grant worth more than \$45 million to implement the HIV Vaccine Innovation, Science, and Technology Acceleration in Africa (HIV-VISTA) program. SAMRC President and CEO and former Fogarty trainee, Dr. Glenda Gray guided the application process for this grant from the U.S. Agency for International Development (USAID).

To compete for funding, Gray established the BRILLIANT consortium (BRinging Innovation to cLinical and Laboratory

research to end HIV In Africa through New vaccine Technology). BRILLIANT, which includes scientists from eight African countries, will design and implement early-stage clinical trials of HIV vaccine immunogens and conduct laboratory analyses and epidemiological studies.

The consortium plans to test HIV vaccine concepts and advance the most promising candidates while working with existing scientific talent and community engagement channels in sub-Saharan Africa (SSA). As part of their SSA-led HIV vaccine effort, consortium members plan to partner with policymakers, affected communities (including people living with HIV/AIDS), advocates, and communicators. A complementary goal of the consortium is to strengthen systems of collaboration throughout SSA while increasing career opportunities for promising regional scientists. One such scientist is Dr. Sophia Osawe, who has been working at the Institute for Human Virology in Nigeria (IHVN) for the past 16 years.

In her role at IHVN, Osawe, a former Fogarty Global Health Fellow who recently defended her PhD in medical microbio-

logy and immunology, writes, implements, and manages grants, and coordinates researchers and study participants. Osawe sees BRILLIANT as an opportunity “to develop more of my skills in the lab and in immunology, interact with other early career researchers, and just continue improving my ability to write grants and help implement studies in my community.”

To date, a vaccine to sustainably control the HIV pandemic has been elusive. UNAIDS estimates that 1.3 million people became newly infected in 2022, with almost two-thirds of these new infections occurring in SSA. And while women and girls accounted for 50% of new infections globally, they accounted for 63% of all new infections in SSA. Already, there are twice as many young SSA women as men between the ages of 15 and 24 living with HIV, and they struggle to access treatment and prevention due to stigma and policies. BRILLIANT sees communities as a central part of its effort to design a pivotal HIV vaccine, and so it includes community representatives in all its decision-making bodies.

Experts believe it is crucial that HIV vaccine candidates be designed to neutralize virus types prevalent in the SSA region, where most new infections occur. Dr. Linda-Gail Bekker, a BRILLIANT scientist and a former Fogarty trainee who is now director and CEO of the Desmond Tutu HIV Centre and Health Foundation, commented, “Africa has borne an enormous burden of the HIV epidemic, and it is fitting that our continent plays a significant role in bringing an effective, affordable and accessible HIV vaccine to the world.”

The BRILLIANT consortium also includes three other former Fogarty trainees and grant recipients: Osawe’s colleague at IHVN, Dr. Evaezi Okpokoro; Dr. Penny Moore of the National Institute for Communicable Diseases/University of Witwatersrand, South Africa; and Dr. Wilbert Mbuya of the National Institute for Medical Research, Tanzania.

FOCUS



The Indian diaspora & global health

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- Diaspora influence on clean cooking in India
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FDA approves first chikungunya vaccine

By Susan Scutti

Ixchiq, the world's first chikungunya vaccine, was approved by the U.S. Food and Drug Administration on November 9, 2023. The WHO describes chikungunya as a disease that causes fever and severe joint pain, often debilitating and varied in duration. Chikungunya, which is transmitted to humans by mosquitoes primarily in tropical and subtropical regions of Africa and Asia, and parts of the Americas, may also trigger joint swelling, muscle pain, headache, nausea, fatigue, and rash. Ixchiq, also known as VLA1553, is produced by Valneva Austria GmbH, a specialty vaccine company based in Vienna, Austria.

"This virus can cause extensive outbreaks and significant morbidity," Dr. Lesia K. Dropulic, Branch Chief, Clinical Trials Program, Vaccine Research Center (VRC) at the National Institute of Allergy and Infectious Diseases, told Fogarty. "The ability to prevent this, especially in parts of the world where the virus spreads endemically, is an important contribution to global public health."

FDA approval of Ixchiq is based on Phase 3 clinical trial data in 4,115 adults "showing a 98.9% seroresponse rate at 28 days with a single vaccination," according to Valneva. (In Phase 3 clinical trials a drug or vaccine is tested for efficacy and side effects; "seroresponse rate" is the percentage of people whose blood serum shows a developing antibody response capable of preventing infection.)

Ixchiq, which contains a live, weakened version of the chikungunya virus, is approved for individuals 18 years and older who are at increased risk of exposure to the virus, the FDA stated. Ixchiq is a single shot vaccine, injected into the muscle, that can cause symptoms similar to a chikungunya infection. Severe reactions occurred in 1.6% of recipients; some participants had prolonged adverse reactions that lasted for at least 30 days. The FDA requires that the company conducts a post-marketing study to assess the risk of adverse reactions. Prescribing information warns clinicians that it is unknown whether giving the shot to pregnant women can cause adverse effects in newborns.

Valneva, which develops, manufactures, and commercializes vaccines addressing unmet medical



Aedes mosquitoes, like the one shown here, can be vectors for the virus which causes chikungunya.

needs, reported that the vaccine is currently under accelerated assessment by the European Medicines Agency (EMA), while a standard regulatory review is underway with Health Canada. "To make VLA1553 more accessible to low- and middle-income countries, Valneva and Instituto Butantan in Brazil signed an agreement in January 2021 for the development, manufacturing and marketing of VLA1553," the company stated.

Dropulic noted that, previously, the Vaccine Research Center had worked on a separate chikungunya vaccine. "The VRC developed a viral like particle (VLP) vaccine that we evaluated in Phase 1 and Phase 2 trials during the 2015 outbreak in the Caribbean." Bavarian Nordic, another global vaccine development company, headquartered in Denmark, is now advancing the clinical development of this product, known as CHIKV VLP. Currently in Phase 3 trials, CHIKV VLP has demonstrated a high seroresponse rate and fast onset of response, according to Bavarian Nordic, which plans to submit to regulatory authorities this year. CHIKV VLP has already received from FDA the Breakthrough Therapy and Fast Track designations (designed to expedite the development and review of drugs) and the PRIME designation from EMA (designed to enhance support for the development of medicines).

Given the progress achieved, the VRC is currently focusing its efforts on researching vaccines against other publicly significant mosquito-borne infections such as malaria, Zika, dengue, and West Nile Virus. Chikungunya was first identified in the United Republic of Tanzania in 1952 and subsequently in other countries in Africa and Asia, according to the WHO. Since 2004, the virus has been identified in over 110 countries in Asia, Africa, Europe and the Americas, while outbreaks have become more frequent and widespread. The FDA considers chikungunya an emerging global health threat with at least 5 million cases reported over the past 15 years.

Photo courtesy of National Institute of Allergy and Infectious Diseases

Research Roundup NOVEMBER 2023–JANUARY 2024

Between November 1, 2023, and January 31, 2024, Fogarty's Division of International Epidemiology and Population Studies published studies on a range of topics related to domestic and international health in peer-reviewed journals.



Impact of cookstove use on rates of severe infant pneumonia Fogarty's Dr. Joshua Rosenthal contributed to this analysis published in the *New England Journal of Medicine*. The Household Air Pollution Intervention Network (HAPIN) trial team compared rates of severe infant pneumonia in households using traditional cookstoves, which use biomass fuels (wood, dung, or agricultural waste) versus those using liquefied petroleum gas (LPG) cookstoves. There was no significant difference in severe pneumonia between the intervention group (LPG stoves) and the control group (traditional stoves), despite achieving major reductions in exposure to cooking smoke during the 18-month intervention period.

Article title: Liquefied Petroleum Gas or Biomass Cooking and Severe Infant Pneumonia

Does changing to clean cookstoves reduce the risk of stunting in infants? A related paper co-authored by Rosenthal appeared in the *New England Journal of Medicine*. The HAPIN team explored whether replacing biomass fuels with LPG cookstoves could reduce the risk of stunted growth in infants. (Stunting has been linked to household air pollution.) Personal exposure to fine particulate matter was monitored starting at pregnancy and continued until children were 12 months old, at which time the length of each infant was measured. The intervention resulted in lower prenatal and postnatal exposures to fine particulate matter compared to controls. Stunting occurred in 27.4% of infants born to women in the intervention group and in 25.2% of those born to women in the control group.

Article title: Effects of Cooking with Liquefied Petroleum Gas or Biomass on Stunting in Infants

Using multiple models is best for long-term disease outbreak projections Samantha Bents, a Fogarty research intern, and Fogarty's Dr. Cécile Viboud contributed to this study, which suggests that a collection of models that preserves variation between models is consistently more reliable than any single model for longer-term projections of disease outbreaks.

Article title: Evaluation of the US COVID-19 Scenario Modeling Hub for informing pandemic response under uncertainty, Publication: Nature Communications

Lessons learned by the COVID-19 Scenario Modeling Hub A second paper co-authored by

Bents and Viboud describes the history of, and lessons learned from, the US COVID-19 Scenario Modeling Hub's collective research effort.

Article title: The US COVID-19 and Influenza Scenario Modeling Hubs: Delivering long-term projections to guide policy, Publication: Epidemics

COVID-19 masking & behavior changes reduced RSV rates in South Africa Bents and Viboud co-authored this study that looked at how the use of nonpharmaceutical interventions to reduce SARS-CoV-2 transmission affected the circulation of respiratory syncytial virus in South Africa in 2020-2021.

Article title: Modeling the impact of COVID-19 nonpharmaceutical interventions on respiratory syncytial virus transmission in South Africa, Publication: Influence and Other Respiratory Viruses

Cross-species data is useful when designing flu vaccines This study co-authored by Fogarty's Dr. Nidia Trovão and Dr. Josh Cherry uncovered surprising features of the evolution of influenza A virus hemagglutinin protein sequences that could inform vaccine evaluation and design.

Article title: Comparative evolution of influenza A virus H1 and H3 head and stalk domains across host species Publication: mBio

Multiple trait subsampling improves suboptimal datasets Trovão and co-authors determined that including as many traits as possible when subsampling genetic data contained in large datasets is the best strategy to mitigate bias and optimize a dataset for analysis.

Article title: Optimizing ancestral trait reconstruction of large HIV Subtype C datasets through multiple-trait subsampling, Publication: Virus Evolution

Profile of cohort for SARS-CoV-2 study in Costa Rica Fogarty's Dr. Kaiyuan Sun co-authored this paper describing participant recruitment, initial phase, and future goals of the RESPIRA study evaluating immune response to SARS-CoV-2 in Costa Rica.

Article title: Cohort profile: evaluation of immune response and household transmission of SARS-CoV-2 in Costa Rica: the RESPIRA study, Publication: BMJ Open

PROFILE

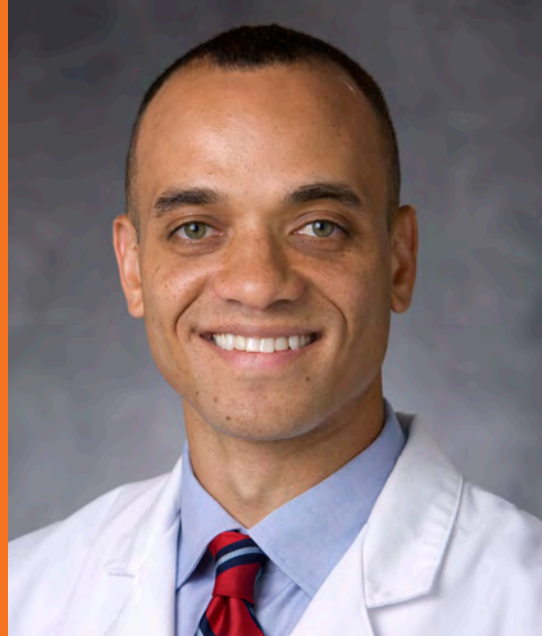
Finding causes of heart failure in Western Kenya

When Fogarty first launched its Global Health Fellows and Scholars Program, now known as Launching Future Leaders in Global Health Research Training Program (LAUNCH), in 2004, many candidates were focused on some combination of HIV/AIDS, public health, or infectious disease research. Yet, as the cohorts grew, so did the diversity of specialties. An example is Dr. Gerald Bloomfield, who joined the Fogarty program in 2009 as a member of the first group of cardiologist fellows. This original cohort of heart doctors paved the way for other cardiologists to enter the program.

The premise of Bloomfield's Fogarty project was to search for markers of atherosclerosis in heart failure patients in Western Kenya. At that time, atherosclerosis, a buildup of plaque and cholesterol on the wall of the arteries, wasn't thought to be a common cause of heart disease or heart failure in places like Kenya. His team conducted a case-controlled study of patients with and without heart failure. They found that the most common causes of heart failure in the region, including untreated high blood pressure, matched precisely what was described in the literature. However, amongst men, markers of atherosclerosis were the second most common cause of heart failure in the 300 study participants. Bloomfield said, "While atherosclerosis certainly is not the number one cause of heart failure in Western Kenya, it is becoming much more common than it was decades ago."

During his fellowship in Kenya, Bloomfield observed an epidemic of heart failure and high blood pressure and quickly realized there was a lack of expertise available. To address these issues, he and his mentors developed a Cardiovascular Center of Excellence to conduct research, provide multidisciplinary training, and enhance care delivery for heart disease patients.

He and his colleagues also found an interesting overlap with heart failure among people living with HIV who had well-controlled disease, something he went on to study in 2011 through a Fogarty International Research Scientist Development Award with additional funding from the National Heart, Lung, and Blood Institute. In Western Kenya, he continues this research by investigating subclinical cardiac dysfunction—heart conditions that might be asymptomatic or undetected by the usual clinical



Gerald Bloomfield, MD, MPH

Fogarty Fellow:	2009-2010
U.S. institutions:	Duke University, Brown University
Foreign institution:	Moi Teaching Hospital, Eldoret, Kenya
Research topic:	The cross-section between HIV and heart disease
Current affiliation:	Associate professor, with tenure, at Duke University School of Medicine and associate research professor at the Duke Global Health Institute

tests—among people living with HIV, including children and adolescents with perinatal (pre-birth) HIV infection.

His work in Kenya continues, yet Bloomfield also applies what he has learned globally to local settings in the United States. He currently leads a project looking at best practices in heart disease care for people living with HIV in the Southern U.S., working to understand when and how a cardiologist should get involved in their care and what types of referrals and consultations would be required. Additionally, Bloomfield is heading a study in rural areas of Southern U.S. that uses non-invasive imaging to study heart function and detect early dysfunction. When he is not involved with research, Bloomfield continues his work at Duke University as a clinician and as an associate professor in the department of medicine with a secondary appointment in the Global Health Institute, where he teaches a master's level course in noncommunicable diseases in low- and-middle-income countries.

Bloomfield credits his Fogarty fellowship as the stepping stone to where he is today and welcomes opportunities to give back. Since his own fellowship in 2009, he has mentored several of the dozens of cardiologists who have gone through the program. "It's been fantastic to see prior mentees now leading noncommunicable disease programs, holding academic positions, and doing public health work internationally and in the U.S.," said Bloomfield. "Fogarty fellows are very engaged and passionate about their work, and it's been great to help them get to the next stage in their career."

CHANDY C. JOHN, MD, MS

Dr. Chandy C. John is the director of the Ryan White Center for Pediatric Infectious Disease and Global Health at Indiana University School of Medicine. A practicing clinician, he also conducts research and training programs in Kenya and Uganda, focusing on malaria pathogenesis, immunology, and epidemiology. John served as the president of the American Society of Tropical Medicine and Hygiene in 2019. He currently serves on the Thrasher Research Scientific Advisory Board and Fogarty Advisory Board and is a member of the American Academy of Pediatrics' Committee on Infectious Diseases. His authorship includes more than 250 peer-reviewed scientific publications and 30 book chapters in addition to published poems, essays, and short stories.



Tell us about your study of malaria and neuro-behavioral development.

We don't have final results yet, but I can tell you that the preliminary data are quite clear in showing that severe malaria affects cognition long-term. Children with severe malaria have lower cognitive scores for a long time afterwards, and this seems to be largely limited to cerebral malaria and severe malarial anemia. The other forms of severe malaria don't seem to have the same strength of effect as those two, which is what we found in a previous study as well.

We have also looked at whether severe malaria in a child affects the economic productivity of their household. If the child has impairment or repeated episodes of malaria that may play into the family not doing well because of disruptions in work. Early results show that severe malaria does affect economic productivity of a household long-term. So that's another important outcome. We've done a lot of analysis, so these preliminary results are unlikely to change.

Has serving on Fogarty's board helped advance your knowledge?

Absolutely. I really enjoy being on the board because members are deliberately chosen to include not only researchers, but also people who work in public health and related areas of global health. People who are experts in education, people who work at societies and professional organizations. It's a very broad range of expertise, deliberately chosen so that Fogarty gets the best input from people with different expertise in global health. I've learned a lot from the other researchers on the board, but also from people across all fields about how they evaluate questions of global health significance. Also, at the open board meetings we have experts from all over, including the heads of various NIH institutes, come in and talk to us about their global health priorities. They get input from us on what we think

might be important for global health in their particular area. And that's really great too.

What role does collaboration play in your work?

Great work gets done because of great collaborators and a great team, and I have the best. My key collaborators at Indiana University are Drs. Andrea Conroy, Dibya Datta, Nathan Schmidt, Prasida Holla, and Giselle Lima-Cooper. My primary collaborators at Makerere University are Drs. Ruth Namazzi, Robert Opoka, Paul Bangirana, Anthony Batte, and Richard Idro, who've led the way for many of our studies and taught me a lot. Four of my key collaborators in Uganda (Namazzi, Opoka, Bangirana, and Batte) have received Fogarty fellowships, while Idro is a joint principal investigator with me on our Fogarty training grant for Ugandan students and post-doctoral fellows.

Though we focused on my work in Uganda in this interview, I've also worked in Kenya with the Kenya Medical Research Institute, Moi University, and Jaramogi Oginga Odinga University (JOOU) studying the effect of malaria transmission on immunity. My chief collaborator at JOOU has been Dr. George Ayodo. Fogarty-supported training has also been critical for that work, including support of a former student and current collaborator, Dr. Bartholomew Ondigo of Egerton University. So, this incredibly strong Fogarty connection has been key to advancing research capacity and strength in our programs.

What's ahead for you?

I'm excited about a new project called "SMART Brain," short for Severe Malaria And Risk to the Brain, that will use mobile MRIs in Uganda to look at the brain in children with severe malarial anemia who have long-term cognitive impairment. The addition of MRI, along with EEG and transcranial Doppler testing, to our established tests should enable us to really delve into what leads to brain injury in severe malaria.

India's impact on global health

By Mariah Felipe

With the largest population in the world (over 1.4 billion citizens) India also boasts one of the largest diaspora populations. More than 18 million Indians lived abroad in 2022, according to the UN World Migration Report. India's diaspora reflects the nation's rich and diverse cultural heritage and provides an invaluable bridge between home and host societies.

Members of the diaspora have built transnational networks connecting cultural, social, and economic interests that impact almost every sector from business to engineering, health care, research, and global health initiatives worldwide.

When it comes to the world of global health and medicine, India is a powerhouse. According to NIH World Report, since 2016 more than 4,300 health research studies have been funded in India by some of the world's largest biomedical research funders, including NIH, the European Commission, Institut Pasteur, and the Japan Agency for Medical Research and Development, among others. Between 2022 and 2023, Fogarty funded over 30 studies in the country covering such diverse topics as eye health, mental health, environmental exposures, women's health, and more.

India also plays a major global role in vaccine and pharmaceutical manufacturing. The nation supplies 60% of the world's vaccines and exports vaccines to more than 170 countries globally, earning India the title, "the world's pharmacy." Having these capabilities allowed India's Serum Institute to manufacture the Oxford-AstraZeneca vaccine in the country during the COVID-19 pandemic through the COVAX program, widely expanding vaccine access to lower-income economies.

Dr. Nandini Kumar, president of India's Forum for Ethics Review Committees and distinguished scientist chair at India's Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), notes that as India's economy continues to grow alongside its positive reputation in health care, there has been an influx of non-Indians as well as Indians returning to the country to study and conduct research across various fields.



In 2023, India led the G20 summit, making One Health a key theme of the conference.

India's traditions of Ayurveda, yoga, and other holistic health practices, managed by AYUSH, gives the country a unique place in the global health space. The combination of these practices, along with conventional Western medicine, has started to gain a larger influence in India and beyond. AYUSH released official guidelines for remedies to treat mild to moderate COVID-19 in 2021, and a recent publication in the *British Journal of Dermatology* highlighted successful Ayurvedic treatments for filariasis, a disease caused by mosquito-borne parasitic infection, and lymphedema, swelling in the arms or legs due to a buildup of lymph fluid.

As India and its diaspora gain more influence globally, the country continues to engage in health diplomacy by collaborating with international organizations and participating in global health initiatives. Serving as the home base for WHO's South-East Asia chapter, India leads the region in developing public health guidelines that are appropriate and adaptable in the South Asian context.

India isn't just a provider of medical products, services, and health information technology, it also is a source of talent in the health sector, including nurses, doctors, and researchers, many with influential positions at home and in the West.

“India and its diaspora continue to play a pivotal role in shaping the future of global health.”

India and its diaspora continue to play a pivotal role in shaping the future of global health. Whether through the contributions of health care professionals, advancements in pharmaceuticals, or the promotion of traditional healing practices, India's impact is felt on a global scale. Health practitioners and researchers around the world benefit from the diverse perspectives and expertise coming from the Indian diaspora. Recognizing and harnessing its potential also contribute to developing a robust medical research ecosystem in India.

Diaspora influence on clean cooking in India

Dr. Praveen Kumar's journey into climate change research wasn't a typical one. He began his studies as a technology major at the University of Mumbai, and went on to work as an engineer, where he says, "I started observing the detrimental impact of factories on poorer communities." He noticed that vulnerable populations in Mumbai were constantly being exposed to toxins and pollutants due to industrial activities taking place in their surroundings which posed severe health risks.

This led him back to academia in pursuit of a master's degree in social sciences from the Tata Institute of Social Sciences in India and later a PhD in social work from Washington University in St. Louis. Today, he works as an associate professor at Boston College School of Social Work. He's focused on interdisciplinary research related to environmental justice and global health while emphasizing the role that climate change plays in both.

"When you start working on the environment and its impact on vulnerable communities, and you take a 30,000-foot view, climate change becomes one of the most important pieces of it," he explains.

In 2023, Kumar was named an NIH Climate and Health Scholar for Fogarty. In this role he is currently working with Fogarty's Center for Global Health Studies to analyze proposals for case studies to advance research on climate adaptation strategies and their impact on public health. The call for proposals received over 130 applications; eight to 10 case studies will be selected for publication.

With his academic experience in both India and the United States, Kumar acknowledges their similarities with an emphasis on technical and quantitative skills in both settings. However, he notes a significant difference in international diversity, stating, "In the U.S., the student body is quite diverse, but in India, not so much, which has a great impact on the types of perspectives available to you in a research setting."

His PhD project at Washington University was part of the Clean Cooking Implementation Science Network (ISN), led by Fogarty with support from the NIH Common Fund, and focused on using clean cooking methods to improve the health of mothers and their children by reducing their exposure to household air pollution.

Based on this study, he published a paper highlighting



One type of clean cookstove is a smokeless mud model developed by the Smokeless Cookstove Foundation.

Photo courtesy of the Smokeless Cookstove Foundation

some of the issues with previous clean cooking policies in India, which subsidized gas tanks needed for cooking but did not emphasize their health benefits. He identified three main obstacles for families living in rural areas in India and other parts of the world in implementing clean cooking practices: affordability, accessibility, and awareness. "It's a global health problem," he says, pointing out that the health implications for women and children exposed to household air pollution include heart disease, stroke, cancer, chronic lung disease and pneumonia, and even stunted growth in infants whose mothers were exposed while pregnant to household air pollutants from biomass fuels.

A major Indian news publication wrote a story based on his paper, which led to policy changes by the Indian government, exemplifying how researchers in the Indian diaspora can use their expertise and resources to address critical public health issues in India.

In addition to influencing policy on critical public health issues, Kumar hopes to help students and up-and-coming researchers in India hone their skills and contribute to larger research projects, like the clean cooking initiative. "That's where the role of Fogarty is so crucial," says Kumar. "Because the center focuses on building the capacity and works with global health institutions, including nonprofit organizations and academic institutions." Through such capacity building efforts, Kumar sees a future for more cutting-edge research at Indian institutions.

Encouraging knowledge circulation between India & the West

Brain drain generally refers to the emigration of a group of educated individuals, often from lower-income countries to higher-income ones, in search of better economic opportunity and has long been a point of contention in the field of global health. While this phenomenon can have negative impacts, especially in countries in which the percentage of doctors is below WHO guidelines, this globalization of education, research, and medicine can also create a circulation of knowledge between two countries with differing cultures or resources.

This could not be more evident in India, a country with the world's largest population and diaspora, and a growing economy. Dr. Nandini Kumar, president of India's Forum for Ethics Review Committees and distinguished scientist chair at India's Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH), says while she still sees some "brain drain" in India, it's started to become more of a circulation of knowledge with an influx in recent years of Indians coming back and non-Indians moving to the country to study and conduct research. "I know there's always been this fear of brain drain, but in reality, there's a place for everyone, everywhere," says Kumar.

Kumar has a unique perspective on this topic as an expert in bioethics who was born in India, trained abroad, and returned to India to lead a bioethics training program that has trained thousands in India over the last two decades. She began her journey into the field in 2001 as one of the first trainees in Fogarty's International Research Ethics Education and Curriculum Development Award (or Bioethics) program. One of the things she appreciates about Fogarty's approach is that the center puts host nation researchers in charge. "I had a professor tell us, 'I'll teach you about the international bioethics concepts, but we need you to show us the context so that you can apply these concepts in a way that works for India.'" She says this inspired her as she designed her bioethics program to ensure that it captured "Indian-ness" while incorporating cultural and philosophical principles from Indian and Western cultures.

Kumar notes that this transition from brain drain to a "two-way street" in India is the result of huge shifts in recent years. Economic growth and changes in policy and education practices, among other factors, have led to a growth in opportunity in India encouraging many Indians



Dr. Nandini Kumar attended the 2023 G20 summit in New Delhi, India, in September 2023.

Photo courtesy of Nandini Kumar

to stay in the country and for others to return there for work.

Recent policies and guidelines are encouraging interdisciplinary clinical research and the integration of traditional medical systems with modern medicine. The current Indian government is behind the movement to converge traditional Indian medical practices, governed by AYUSH, with conventional Western medicine, creating more acceptance of traditional practices in hospitals and other settings.

“I know there’s always been this fear of brain drain, but in reality, there’s a place for everyone, everywhere.”

“The code of conduct for many of these practices protected by AYUSH was established hundreds of years ago, but the organization is now learning to adapt to the modern world, working to bring to the program more collaboration and cohesion between the two systems,” says Kumar.

Adaptions of this approach include official guidelines from AYUSH on the use of remedies to treat mild to moderate COVID-19, released in 2021, and a recent publication in the *British Journal of Dermatology* highlighting successful Ayurvedic treatments for filariasis and lymphedema.

Whether it is traditional or Western medicine that is being studied at home or abroad, Kumar asks her fellow researchers in the diaspora, in any field, to impart what they've learned to researchers in India, and to help build their research capacity through research or workshops, “because there are no global health issues that are confined to a particular geographical area. We have to learn from each other's shortcomings and successes to grow.”

Simplifying heart failure care in South Asia

Dr. Anubha Agarwal began her research in India as a Fogarty Global Health Fellow during 2017–2018. She was co-mentored by Dr. Doriaraj Prabhakaran, executive director of the Centre for Chronic Disease Control (CCDC) in India, and Dr. Mark Huffman, professor of medicine and co-director of the Global Health Center at Washington University in St. Louis (WUSTL), Missouri. During her Fogarty year, she developed, implemented, and evaluated, using an interrupted time series design, a heart failure quality improvement intervention including discharge checklists, audit-and-feedback mechanisms, and patient education among 1,400 patients hospitalized with heart failure in eight hospitals in Kerala, India.

Today, she is an assistant professor of medicine and co-director of the Global Cardiovascular Health program at WUSTL. Agarwal received a Pathway to Independence award from the National Heart, Lung, and Blood Institute (NHLBI) in 2022, allowing her to build on her previous research to improve heart failure care in South Asia. She aims to substantially simplify heart failure management for patients with heart failure with reduced ejection fraction (HFrEF, the type of heart failure in which the left ventricle loses its ability to contract normally, and the heart can't pump with enough force to push blood into circulation). Her goal is to shift the treatment paradigm from a multi-drug therapy to a polypill containing several guideline-directed medical therapies for HFrEF in one pill.

Her research still in its early phases, Agarwal and her team have already conducted in-depth interviews and focus group discussions with cardiologists, pharmacists, nurses, and patients throughout India aiming to understand the current context of heart failure care and acceptability, appropriateness, and feasibility of an

Photo of a busy street in Kerala, India, where Anubha Agarwal began her research on heart failure care in India while a Fogarty Global Health Scholar.



Anubha Agarwal (left) speaks during the Fogarty Global Health Fellows & Scholars 20th Anniversary event in April 2023 at NIH. Roxanna Garcia (right) looks on.

Fogarty International Center

HFrEF polypill implementation strategy. The next phase will be a multi-center type 1 hybrid randomized clinical trial among patients with HFrEF in South Asia. It will investigate whether an HFrEF polypill implementation strategy can improve key clinical outcomes compared to usual care. Through the development, implementation, and evaluation of HFrEF polypills, Agarwal hopes to improve heart failure care in South Asia and beyond.

When asked about her motivation for this research, she states that she chose to pursue cardiology after her grandfather, who lived in India, died of a heart attack in his early 50s. She says, “It inspired me to become a cardiologist and, in many ways, inspires my continued commitment to improving cardiovascular care in India and South Asia.” As a part of the Indian diaspora, having left India at only 5 years of age, she adds, “It’s been incredibly rewarding professionally and personally to be a part of a team generating evidence-based research to improve cardiovascular care in India.”

Beyond her clinical and research pursuits, Agarwal embraces the role of a mentor, particularly for aspiring female researchers in cardiovascular medicine and global health science who are often under-represented in both fields. “I have been so lucky to have been surrounded by fantastic feminist mentors who have always elevated me, and I’m trying to give that back.”

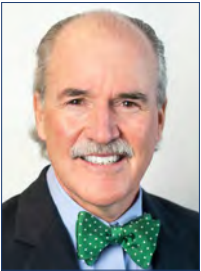
As she continues her work in India, as a part of the Indian diaspora, she wants to ensure there’s an equitable partnership that builds capacity with Indian researchers and institutions to ensure all voices are heard, “While we’re helping to train the research workforce of India, we also need to acknowledge how much we have to learn from them.”

Photo courtesy of Northwestern University

DIRECTOR'S COLUMN

By Dr. Peter Kilmarx, Acting Director, Fogarty International Center

Seeing is believing: My year helming Fogarty



In November, I had the opportunity to see the impact of Fogarty's efforts during a multi-country trip to Africa and Asia. My first stop was in Kigali, Rwanda, for the third annual meeting of the NIH Common Fund program, Harnessing Data Science for Health Discovery and Innovation in Africa (DS-I Africa). This meeting brought together

more than 300 data scientists and other researchers from across the continent. A total of 12 NIH institutes, centers, and offices collaborate on DS-I Africa. This broad engagement and scientific diversity are critical to the goals of both Fogarty and the Common Fund, an internal office at NIH that allows for collaboration on innovative research across institutes and centers.

While in Kigali, I also visited NIH grant recipients Drs. David Tumusiime and Vincent Sezibera at the College of Medicine and Health Sciences, University of Rwanda. Both are actively involved in DS-I Africa research and training programs. I also spent time with Dr. Gad Murenzi, who directs the Einstein-Rwanda Research and Capacity Building Program in Kigali. With him, I visited an HIV clinic that participates in IeDEA (International epidemiology Databases to Evaluate AIDS). IeDEA collects observational data representing over 2.2 million people living with HIV in 44 countries and the Fogarty-IeDEA Mentorship Program (FIMP) trains researchers worldwide using this very large database. Lastly in Rwanda, I met with the Drs. Abebe Bekele, dean, and Daniel Seifu, dean of research, at the University of Global Health Equity.

My next stop was in Singapore for the annual scientific meeting of the Global Alliance for Chronic Diseases (GACD). GACD brings together 12 major international research funding agencies specifically to address the growing global burden of noncommunicable diseases in low- and middle-income countries. With a research network involving hundreds of scientists in more than 70 countries,

the meeting was a lively and informative platform to share research findings and network with a global scientific community, including many Fogarty trainees and grant recipients.

Between meetings, I had a chance to visit Thiravat Hemachudha, director of the Thai Red Cross Emerging Infectious Diseases Health Science Centre at Chulalongkorn University, and Virasakdi Chongsuvivatwong, professor of epidemiology at Prince of Songkhla University in Bangkok, Thailand. Dr. Thiravat is a former Fogarty trainee and now a global leader in research on rabies and other emerging infections, while Dr. Virasakdi is senior infectious disease epidemiologist with a Fogarty grant to train researchers from Thailand, Burma, and Indonesia.



A student (right) demonstrates an "Anatomage" table while Acting Fogarty Director Peter Kilmarx (left) looks on at University of Global Health Equity, Rwanda.

For my final stop, I joined 130 experts from 43 countries in the first Global Clinical Trials Forum at the headquarters of the World Health Organization (WHO) in Geneva convened by its Chief Scientist Dr. Jeremy Farrar. I've been keenly interested in the need to build global clinical trial capacity to address countries' perennial health challenges that can also be available in the event of infectious disease outbreaks or other health emergencies.

January 2024 marks the one-year anniversary of my role as acting director of Fogarty, and with that, acting associate director for international research for NIH. My trip, which included stops in Africa, Asia, and Europe, was an

outstanding opportunity to represent Fogarty and all of NIH in key international fora, to promote global health research partnerships, and to see firsthand the impressive impacts of our exceptional Fogarty team. It's been a privilege to serve in this role. I enter the new year as energized and optimistic as ever about our progress toward achieving our vision of a world in which the frontiers of health research extend across the globe and advances in science are implemented to reduce the burden of disease and promote health for all people.



Alex Mremi wins James G. Hakim Award

Dr. Alex Mremi, of the Kilimanjaro Christian Medical Centre, has been awarded the annual James G. Hakim Award on behalf of Fogarty, AFREhealth, and the Consortium of Universities for Global Health (CUGH). This award recognizes an African who is working toward their terminal degree and received the top score for their submitted abstract for CUGH 2024.



W. Kimryn Rathmell selected for top role at NCI

Dr. W. Kimryn Rathmell was selected by President Biden as the 17th director of the National Cancer Institute (NCI) in December. Rathmell was previously the Hugh Jackson Morgan Chair in Medicine, chair of the department of medicine, and physician-in-chief at Vanderbilt University Medical Center. Rathmell succeeds Dr. Monica M. Bertagnoli, who left NCI to become NIH director.



Prajakta Adsul assumes director role at UNM's CADIS

Former Fogarty Global Health Fellow Dr. Prajakta Adsul has been named director of University of New Mexico's new Center for Advancing Dissemination and Implementation Science (CADIS). Since 2019, Adsul has been a faculty member in the Division of Epidemiology, Biostatistics, and Preventive Medicine and is a member in the Cancer Control and Population Sciences Research Program.



Mikus to lead Global Health Technologies Coalition

Global Health Technologies Coalition (GHTC) appointed Dr. Kristie Mikus as executive director. Mikus spent two decades serving the U.S. government, including as senior policy advisor for the Global Health Center at the U.S. Centers for Disease Control and Prevention (CDC), CDC deputy country director in Zambia, and Zambia country coordinator for PEPFAR.



SAMRC names Ntobeko Ntusi president and CEO

The South African Medical Research Council (SAMRC) has appointed Dr. Ntobeko Ntusi as its new president and CEO, effective July 2024. Ntusi, a cardiologist, currently heads the department of medicine at Groote Schuur Hospital. Ntusi will succeed Dr. Glenda Gray, who has been the SAMRC President for the past decade.



AACR elects John Schiller as fellow

The American Association for Cancer Research has elected Dr. John T. Schiller, deputy chief, Laboratory of Cellular Oncology, National Cancer Institute, as a fellow for "championed research that has reduced the incidence of human papillomavirus (HPV)-associated cancers." He received the NIH Distinguished Investigator designation in 2016.

Bangladesh records worst dengue epidemic

Bangladesh reported more than 300,000 dengue cases, including 1,705 deaths, in 2023, a dramatic increase from the 62,000 infections and 281 deaths the nation recorded the previous year. The incidence of dengue has grown dramatically around the world in recent decades due to more frequent extreme weather events, according to WHO.

Gates Foundation approves record budget

The Bill & Melinda Gates Foundation's board of trustees approved a \$8.6 billion budget for 2024, the largest annual budget to date. A major focus for the foundation has been funding development of new tools and strategies to reduce the number of cases of infectious diseases and decrease causes of child mortality in low-income countries.

Cameroon rolls out malaria vaccinations

In January, Cameroon became the first nation to begin routinely vaccinating children with RTS,S (Mosquirix), the first antimalarial shot recommended by WHO. The Central Africa nation, which boasts an immunization program going back five decades, aims to inoculate almost 250,000 children against the mosquito-spread disease by 2026.

Global Health NOW turns 10

Global Health NOW (GHN) celebrated a decade of sharing global health news, reporting and perspectives on January 2. The publication from Johns Hopkins Bloomberg School of Public Health reaches more than 50,000 readers in 170 countries. Throughout 2024, GHN will post special features, campaigns, and events, stated Editor-in-Chief Brian W. Simpson.

WHO releases ethics guidance for LMMs

WHO is releasing new guidance on ethics and governance of large multi-modal models (LMMs), a type of artificial intelligence (AI) technology that can understand and create content. LMMs are being used for health-related purposes despite documented risks. The guidance outlines recommendations for consideration by governments, technology companies, and health care providers.

Funding Opportunity Announcement	Deadline	Details
Noncommunicable Disease Prevention in Cities	Mar 11, 2024	go.nih.gov/GACD
Mobile Health (mHealth)	Mar 22, 2024	go.nih.gov/mHealth
International Bioethics Training	Jun 6, 2024	go.nih.gov/BioethicsTraining

For more information, visit www.fic.nih.gov/funding

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Opinion pieces help promote research



Scientists should not rely solely on academic papers to circulate news about their research, according to a recent *Nature* article. Many general readers wish to keep abreast of scientific discovery, so writing an opinion piece—also referred to as an op-ed, commentary, or guest essay—is another way to share discoveries or express an informed view on important yet difficult-to-understand topics.

While such articles provide a service to readers unfamiliar with scientific journals, they also might provide personal and professional rewards for their authors. Read by colleagues and policymakers, guest essays raise writers' profiles within institutions and fields. Add to that, articles penned by global health scientists, especially those from low- and middle-income countries, can broaden the usual range of perspectives seen on op-ed pages and may help frame research priorities and funding.

Read our tips for writing op-eds:
go.nih.gov/OpEdTips