



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

## Welcoming Neuzil as Fogarty's 13th director

Photo courtesy of University of Maryland



Dr. Kathleen Neuzil joined the Fogarty International Center as its 13th director on May 6, 2024. She has also been appointed associate director for international research at the National Institutes of Health.

An internationally recognized researcher, Neuzil focuses on vaccine development

and vaccine introduction in low- and middle-income countries and regions. She has conducted clinical and epidemiologic studies on vaccine-preventable diseases and her scientific contributions encompass design and execution of clinical trials as well as leadership of large, multicenter field studies and vaccine implementation programs.

Neuzil's work in the field of vaccinology spans multiple infectious diseases, including influenza, rotavirus, human papillomavirus, Japanese encephalitis, typhoid, and COVID-19. She has authored or co-authored more than 340 scientific publications and has more than two decades of experience in vaccine policy. Neuzil is currently a member of the WHO Strategic Advisory Group of Experts on Immunization and, previously, she served on the Advisory Committee on Immunization Practices for the U.S. Centers for Disease Control and Prevention (CDC).

### First woman director of Fogarty

NIH Director Dr. Monica M. Bertagnoli said, "Dr. Neuzil has decades of experience in global health. Combined with her many years as a vaccine policy advisor to the CDC and the WHO, and her experience establishing new partnerships and directing diverse organization teams, she is very well suited to lead Fogarty."

Immediately prior to Fogarty, Neuzil served as the Myron M. Levine MD DTPH Endowed Professor in Vaccinology, professor of medicine and pediatrics, director of the Center for Vaccine Development and Global Health, and chief of the Division of Geographic Medicine at the University of Maryland School of Medicine. Before this, she was a clinical professor in the departments of medicine and global health at the University of Washington in Seattle. Mentorship of the next generation of vaccine scientists has been a fundamental principle throughout her career; she's committed to academic support of trainees at all levels.

### National and international service

From 2005 to 2015, Neuzil worked for PATH, an international, nonprofit global health organization based in Seattle, Washington. Throughout her career, she has assisted national scientific organizations, including NIH, in various capacities. Most recently, she served on the National Institute of Allergy and Infectious Diseases' Special Emphasis and Vaccine Research Center Scientific Advisory panels. A former vice president and director on the board of the National Foundation for Infectious Diseases, she also has been co-director of the COVID-19 Prevention Network since it launched in 2020.

Neuzil's numerous honors and awards include Vanderbilt University School of Medicine Distinguished Alumna Award; the Sonia Skarlatos Public Service Award from the American Society of Gene & Cell Therapy; and University of Maryland School of Medicine Chairman's Special Achievement Award. She is a member of the National Academy of Medicine, the International Society for Infectious Diseases, and the American Society of Tropical Medicine and Hygiene. She is also a fellow of both the American College of Physicians and the Infectious Diseases Society of America. Neuzil follows Dr. Roger I. Glass, Fogarty's longest serving director of nearly 17 years. Dr. Peter Kilmarx, acting director, will resume his role as Fogarty's deputy director.



### Georgia rising

- Partnerships help this Eastern European nation grow
- Training the next generation of HIV researchers in Georgia
- Improving traumatic injury care in Georgia and beyond
- Learning to CARE for public and environmental health

# Clinical trial could bring first TB vaccine in a century

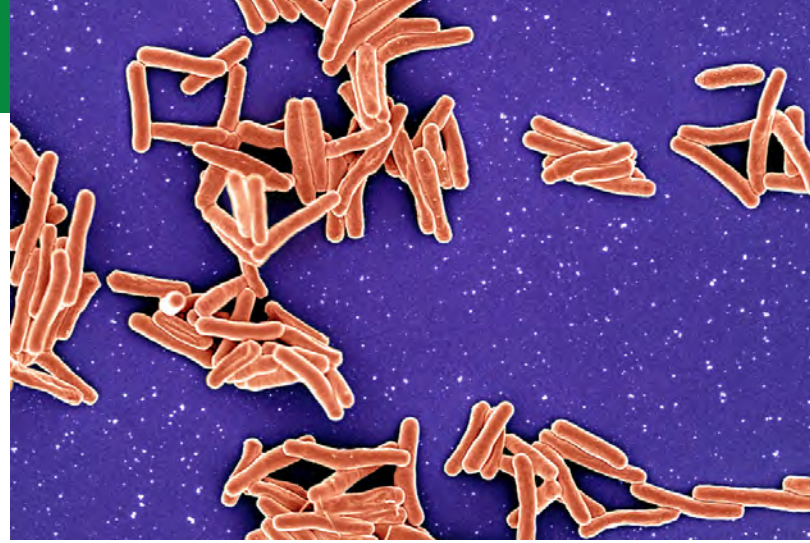
By Susan Scutti

Phthisis, wasting disease, consumption, the white death—tuberculosis (TB) has been known by many names in the past and even appears in the writings of Hippocrates (460-355 BC). Though ancient in origin, this infectious disease remains a scourge in our own time, having killed 1.3 million people in 2022, with an additional 10.6 million falling ill that same year. Notably, this respiratory disease, which is triggered by a form of bacteria (*Mycobacterium tuberculosis*), is the leading cause of death among people living with HIV/AIDS. Overall, nearly a quarter of the world's population has a latent TB infection; free of symptoms, these people are unable to spread TB to others, yet some will progress to active illness. Today's TB patients are often young adults residing in low- and middle-income countries. Though most sufferers can be cured with antibiotics, multidrug-resistant TB is increasingly prevalent and threatens to become a crisis.

Meanwhile, the only licensed vaccine for TB was developed more than 100 years ago by Albert Calmette and Jean-Marie Camille Guérin. A milestone achievement in 1921, the Bacille Calmette-Guérin (BCG) vaccine remains in widespread use today to prevent TB in infants and young children. It shows variable efficacy against different forms of TB, however, with most consistent protection observed against certain forms of the disease that occur outside the lungs. As this vaccine's protection diminishes over time, teens and adults are left vulnerable to pulmonary tuberculosis, which accounts for most infections and deaths in these age groups.

A possible breakthrough is in progress. In March 2024, scientists in seven countries launched a Phase 3 trial of an investigational TB vaccine, M72/AS01E. In a previous Phase 2B trial, this innovative inoculation had stopped progression from latent to active TB in half of adults who participated in the study.

"Fogarty has been proud to support decades of research and research training around the world to address the scourge of tuberculosis, including multidrug-resistant TB," said Dr. Peter Kilmarx, Fogarty's deputy director. "We're excited to see the global roll-out of the M72/AS01E vaccine trial and hope this will be a powerful new tool for the prevention of active TB disease and deaths worldwide."



Scanning electron micrograph of *Mycobacterium tuberculosis* particles (colored orange), the bacterium which causes TB.

Photo courtesy of NIAID

## Accelerating vaccine development

During the COVID-19 pandemic, global annual spending on essential TB services fell below funding targets set by the WHO's End TB Strategy. To stimulate investment, WHO Director-General Dr. Tedros Ghebreyesus announced in January 2023 the establishment of a WHO TB Vaccine Accelerator to identify and overcome barriers to TB vaccine development, licensing and use. M72/AS01E is one of 17 TB vaccine candidates in clinical development as part of this program.

**Though most sufferers can be cured with antibiotics, multidrug-resistant TB is increasingly prevalent and threatens to become a crisis.**

The M72/AS01E vaccine was originally designed by biopharmaceutical company GSK and the International AIDS Vaccine Initiative, a nonprofit research organization. Following the successful Phase 2b trial of M72/AS01E in 2019, the nonprofit Bill & Melinda Gates Medical Research Institute (Gates MRI) licensed the vaccine, intending to push it through to completion of clinical studies. This is all part of the Gates MRI's overall market strategy. "We build the middle piece of the development process—we license the entity and drive it all the way to registration," Emilio Emini, the nonprofit's former chief executive officer recently told *The Lancet*.

Scientists and patients eagerly await the results of this Phase 3 trial. The double-blind study, led by Dr. Alemnew Dagne for Gates MRI, aims to enroll up to 20,000 participants at 60 trial sites across South Africa, Zambia, Malawi, Mozambique, Kenya, Indonesia, and Vietnam. Participants, who include people living with HIV, will receive either M72/AS01E or a placebo. The investigators expect the trial, funded in part by Wellcome Trust, to take at least five years to complete.

# Research Roundup: February–May 2024

Between February and May 2024, researchers within Fogarty's Division of International Epidemiology and Population Studies published the following studies on a variety of topics related to domestic and international health.



This graphic shows the spatial transmission dynamics of hepatitis B virus genotype E from 1824 to 2014.

Image adapted from Figure 6 of the publication, Contemporary and historical human migration patterns shape hepatitis B virus diversity, Potter BI, Thijssen M, Trovão NS, et al.

## People in LMICs at higher risk of flu-related ICU admission

Fogarty's Dr. Cécile Viboud and Chelsea Hansen contributed to this report from the Global Influenza Hospital Surveillance Network (GIHSN), which has provided patient-level data on severe influenza-like-illnesses from more than 100 clinical sites since 2012. The team assessed the risk of intensive care unit admission, mechanical ventilation, and in-hospital death among 73,121 patients hospitalized with respiratory illness, including 15,660 with confirmed influenza, in 22 countries. They found a sevenfold increase in the risk of flu-related ICU admission in LMICs compared with HICs. *Article title: Predictors of Severity of Influenza-Related Hospitalizations: Results From the Global Influenza Hospital Surveillance Network (GIHSN), Publication: Journal of Infectious Disease*

## Heterosexual transmission likely drove spread of HIV-1 subtype C

Fogarty's Dr. Nidia Trovão, senior author, investigated the spread of HIV-1 subtype C, which is thought to have originated in non-human primates in the Democratic Republic of Congo. The authors analyzed near full-length genomic sequences sampled from 32 countries on four continents with sampling dates between 1986 to 2019. They estimated the total number of introduction events of HIV-1 subtype C between continents and between risk groups; the largest number of introductions occurred from Africa to Europe. *Article title: The emergence and circulation of human immunodeficiency virus (HIV)-1 subtype C, Publication: Journal of Medical Microbiology*

## Human mobility & spread of respiratory illnesses

Fogarty's Dr. Amanda Perofsky, Dr. Cécile Viboud, and Chelsea Hansen investigated the impact of human behavior on the transmission of 17 respiratory viruses and SARS-CoV-2 in the greater Seattle, Washington, region from November 2018 to June 2022. During lockdown, mobility was a leading indicator of transmission of all viruses except SARS-CoV-2. Once restrictions relaxed, mobility's influence on SARS-CoV-2 transmission lessened. *Article title: Impacts of human mobility on the citywide transmission dynamics of 18 respiratory viruses in pre- and post-COVID-19 pandemic years, Publication: Nature Communications*

## Impact of seasonal bird migration & trade on avian flu virus dispersal

Fogarty's Dr. Nidia Trovão and her co-authors used wild bird movement tracking data and virus genome sequences to measure how seasonal bird migration facilitates global dispersal of the highly pathogenic avian influenza virus (HPAIV) A H5. *Article title: Synchrony of Bird Migration with Global Dispersal of Avian Influenza Reveals Exposed Bird Orders, Publication: Nature Communications*

## Hepatitis B spread linked to human migration

Fogarty's Dr. Nidia Trovão and co-authors described 133 newly sequenced hepatitis B virus strains from recent African immigrants upon their arrival in Belgium. The analyses showed that the A and D genotypes originated in Southeast Asia, while the E genotype likely originated in Africa; both have spread to other regions. *Article title: Contemporary and historical human migration patterns shape hepatitis B virus diversity, Publication: Virus Evolution*

## Is the U.S. influenza inoculation program effective?

To assess the effectiveness of the U.S. influenza vaccination program, Fogarty's Dr. Cécile Viboud and colleagues estimated population-level effects of influenza vaccination uptake on pneumonia and influenza (P&I) associated deaths. Overall influenza vaccine uptake had a statistically significant protective association with the P&I death rate. *Article title: The association between influenza vaccination uptake and influenza and pneumonia-associated deaths in the United States. Publication: Vaccine*

## Lessons learned from the COVID-19 pandemic

In this report, Dr. Cécile Viboud and co-authors summarize a 2023 meeting organized by the Center of Excellence in Respiratory Pathogens. Main takeaways include the importance of combining traditional surveillance with novel data sources and the need for a common framework for data sharing. *Article title: Redefining pandemic preparedness: Multidisciplinary insights from the CERP modelling workshop in infectious diseases, workshop report. Publication: Infectious Disease Modeling*

# PROFILE

## Crowdsourcing to promote HIV self-testing

Dr. Weiming Tang chose his research area after several years of volunteer work in his home country of China. While in college, he worked on a program that aimed to spread awareness about HIV among students at his college. Later, he established a peer-to-peer training program on HIV education at other universities. Recognizing the need for growth in this area, he decided to make this the focus of his career.

One unique feature of Tang's research is that he often uses crowdsourcing to develop tools for the men who have sex with men (MSM) and transgender populations in China. Crowdsourcing—where information is obtained from a large group of people usually via the Internet—is a bottom-up strategy that allows researchers to work with their target populations and develop interventions tailored to their needs. For the MSM and transgender communities in China, this is important as the stigma around these groups often pushes individuals into the shadows, forcing them to use more discreet forms of communication. "I noticed this trend in the MSM community in China and realized it was an opportunity to develop a tool that would allow for better adherence while they are able to look for resources more discreetly."

Tang's Fogarty project analyzed the cost-effectiveness of a crowdsourcing video and conventional video for HIV testing uptake campaigns among MSM and transgender individuals in China. The randomized controlled trial compared first-time HIV testing rates among 721 MSM and transgender individuals who had received either a crowdsourced video or a conventional health marketing video, both promoting HIV testing. The team measured HIV test uptake within three weeks of watching either video as well as the cost of the services being promoted—a first-time HIV test and an HIV diagnosis.

Tang and his colleagues found a 2% difference in uptake rates between the two videos, with the crowdsourced version being slightly more favorable. They also found that the crowdsourced interventions cost substantially less—just US\$131 vs. US\$238 for the first-time HIV test and US\$415 vs. US\$799 for the HIV diagnosis. The results demonstrated that crowdsourcing may be



**Weiming Tang, PhD**

Fogarty Fellow:	2015-2016
U.S. institution:	University of North Carolina, Chapel Hill
Foreign institution:	Sun Yat-sen University, Guangzhou, Guangdong, China
Research topics:	Promoting HIV/STI testing and healthy behavior change among key populations, digital health, and telemedicine tools
Current affiliation:	Co-director of UNC Project-China, advisor of SESH Global

a more cost-effective tool. "Learning how to do a cost-effective analysis was instrumental for me," said Tang. "It's something I now implement into all of my projects so that we can better understand if projects can be scaled-up sustainably, which is always of concern to decision-makers."

Tang's Fogarty year was a huge transition period for him. He was promoted to postdoctoral fellow and later to faculty the very same year he was accepted into the program. "Fogarty allowed me to conduct independent research and helped me develop the foundation for my future research and build strong relationships with Chinese research institutes."

Today, he is the co-director of the UNC China Project, a collaboration between the University of North Carolina at Chapel Hill and Chinese partner organizations. The project aims to expand collaboration for global health research through research, teaching, and service. There he oversees the research and collaborates with different institutes in China. He also ensures a robust mentoring program for the research assistants in China, giving them the support they need for their career development.

He has since expanded upon his work, using crowdsourcing methodologies for mental health issues related to COVID-19. He continues to use digital health tools to reduce HIV stigma and increase testing among highly affected communities in China. When asked about the future of Fogarty's LAUNCH Program, he says, "I hope that collaborative programs like this one can continue so that Chinese researchers can continue to grow in the global health research space."

## GENE F. KWAN, MD, MPH

*Dr. Gene F. Kwan, a cardiologist and global health researcher, is an assistant professor at Boston University's Chobanian & Avedisian School of Medicine. Since 2008 he's worked in rural Rwanda and Haiti collaborating with each country's ministry of health as well as with the organizations Partners In Health and Zanmi Lasante. He's also worked on projects in Malawi, Liberia, and India. He's presented at several American Heart Association conferences. Kwan serves as a noncommunicable diseases advisor for the nonprofit public health organization Partners In Health and is co-author of "The Partners In Health Guide to Chronic Care Integration for Endemic Non-Communicable Diseases."*



### What's special about Partners In Health?

A lot of it is said in the first word of the name—"partners." They very much collaborate with other organizations, other people, and even policymakers to help them and to understand what barriers and challenges they're facing. Partners In Health also has a tremendous interest in research and scientific discovery. The organization focuses on rural areas of the countries in which it works. Such areas lend themselves to innovative ideas about improving access to care for patients who are most in need.

### Tell us about your NIH funded projects.

My study funded by the National Heart, Lung, and Blood Institute (NHLBI), "Identifying facilitators and barriers to heart failure care in Haiti to adapt a community-based intervention," aimed to understand the barriers patients face. Many patients were not returning to the clinic after a first diagnosis with heart failure, so we wanted to understand why and how we might change that. Patients take two days off from work, walk to a far-away clinic, wait in a really crowded waiting room, and then they get to see a clinician for 10 minutes. That whole experience can be disheartening! Partners In Health designed robust community health worker interventions and networks to improve care for patients. We've also been able to deliver education to patients, so they understand heart failure and how this chronic condition requires continuous medication to keep the symptoms controlled.

Our Fogarty-funded study, "Simulator-Based simplified Focused Cardiac Ultrasound (sFoCUS) Training in Haiti," uses simulators to train for cardiac ultrasound. There are about 10 to 15 cardiologists in all of Haiti, a country of 10 million people, and a lot (if not all) of them are working in the capital. So our resident trainees in the rural areas just don't have access to the same kind of cardiology training. There are simulators (mannequins) that help trainees learn the skill of obtaining and interpreting cardiac ultrasound images. Our program implemented this simulator training

in rural areas. Keep in mind we applied for this before COVID, so our work was very timely!

### Why do you emphasize implementation science?

In global health, a lot of the science is taking evidence that works in other contexts and trying to implement it in a new context with its unique barriers, constraints, challenges, and awareness levels. Implementation science helps us understand how to overcome all of these. A particular context may help an intervention be successful, so we need to understand contextual factors that create success. If you're going to disseminate or scale up in other places, you need to understand what inputs would be needed to be able to get things to work. Without studying the implementation of these interventions, a successful intervention can fail in a new context.

### What lessons learned can you share?

One of my main messages to mentees is "be a very good listener first and foremost." We need to listen to what our collaborators on the ground are telling us and often they also know what the solutions are. A researcher's role is to help implement possible solutions and then study whether they're successful or not. My number two lesson for mentees is "be invited back." You're not going to have long-term collaborations if you're not invited back! A lot of that boils down to being a good partner as opposed to coming in with preconceived ideas of what may or may not work. So always listen... and be invited back.

Global health is hard by nature and research is also very hard; putting those two together is extremely challenging so it takes grit and determination and resilience. There'll be many setbacks along the way. If you keep in mind that people throughout the world aren't getting the care they need and you can make some contribution to changing that—if you keep that as your long-term goal—it will help you get through the setbacks.

## Georgia rising: Partnerships foster nation's growth

By Susan Scutti and Mariah Felipe



Georgia launched the world's first national hepatitis C elimination program in 2015. Tbilisi (pictured) is its capital city.

Photo courtesy of U.S. Army Medical Research Directorate-Georgia

**N**estled in the Caucasus region between the Black Sea and the Caspian Sea, Georgia serves as a cultural and economic link between Central Asia and Eastern Europe. It emerged as an independent nation after the dissolution of the Soviet Union in 1991, a period marked by significant socioeconomic challenges. In the wake of the country's independence, Georgia's public health priorities underwent a significant transformation. The focus shifted from primarily addressing infectious diseases and their prevention to enhancing the overall health care system and tackling broader public health issues, including the prevention of noncommunicable diseases (NCDs).

### Strengthening public health infrastructure

Since 1995, the U.S. Centers for Disease Control and Prevention (CDC) has worked closely with Georgia's National Center for Disease Control and Public Health (NCDC) to improve public health infrastructure in several key areas. This collaboration has focused on enhancing surveillance and laboratory capabilities, developing the public health workforce, managing outbreak responses, and establishing the NCDC as a comprehensive national public health institute. For over two decades, Georgia has maintained a polio-free status and achieved substantial control over hepatitis B. It launched the world's first national hepatitis C elimination program in 2015. The nation is currently working to reduce TB incidence by developing novel treatment protocols for treating the disease.

Since 2016, Fogarty has supported several education and training programs aimed at addressing Georgia's public health concerns, including HIV/AIDS prevention and research, tuberculosis, and NCDs. The goal of these programs, like most Fogarty-supported grants, is to provide training and education and to build capacity. Dr. Denise Esserman, professor of biostatistics at Yale and principal investigator of the Georgian Implementation Science Fogarty Training Program (GIFT), emphasized the need for

local leadership in the country: "I think it's important that our colleagues in Georgia eventually become the drivers of this program, and that our role is just to make sure the program is sustainable for them long-term."

Meanwhile, Georgia continues to seek guidance from the National Institutes of Health (NIH) while bolstering its public health infrastructure. In May, Fogarty hosted a delegation of academic administrators who wanted to better understand the NIH grant system as well as the Institutes' priorities for investing in research and development. This meeting also helped clarify to the visitors how NIH supports international partnership and programs in LMICs.

### Ongoing partnerships

Certainly, collaborations with U.S. universities and research programs benefit Georgian researchers, but regional partnerships are equally important to the nation's scientific growth and advancement. The iCREATE (Injury Capacity in Research in EAsTern Europe) program, co-led by the University of Iowa and University of Babes-Bolyai in Romania, connects Georgian researchers with peers in Armenia and the Republic of Moldova. A shared history of Soviet influence and other regional commonalities "pique our interest in comparing data and trends in our countries," said Dr. Nino Chikhladze, a professor at Georgia's Ivane Javakishvili Tbilisi State University. Neighborly inspiration catalyzes public health progress, she said.

Among its most recent significant achievements, Georgia attained European Union candidate status in December 2023. While EU membership is not guaranteed, the nation, with a population approaching 4 million people, clearly stands on the threshold of a significant transformation. As it continues the hard work of expanding its academic network, enriching its research institutes, and articulating a national public health system, Georgia has the potential to transform itself into a scientific hub.

# Training the next generation of HIV researchers in Georgia

While HIV is decreasing around the world, its incidence and mortality are increasing in Eastern Europe and Central Asia. The country of Georgia lies at the intersection of these two regions. HIV prevalence is lower in the country than in other nations in the region, but it remains higher than in the U.S. Data suggests that certain populations, such as people who inject drugs and men who have sex with men, are particularly at risk in Georgia. This led Dr. Rick Altice, a professor of medicine and public health at Yale University, and his colleagues to ask, “What needs to be done differently here?”

Altice and teams at Yale and Ilia State University in Tbilisi used Fogarty funding to develop the Georgian Implementation Science Fogarty Training (GIFT) program. The program includes a center to train researchers in implementation science, with an emphasis on biostatistical methods. The ultimate goal is to develop researchers who can help overcome prevention and treatment gaps that exist in the country.

Throughout his career, Altice has done research in Eastern Europe, Central Asia, Peru, Malaysia, and the U.S., and he believes in democratizing education and training. “High-income countries should not have a monopoly on this research. Instead, the next generation of researchers should be homegrown, and this is where Fogarty makes such a big difference.”

## Gaps in HIV care

Altice and his colleagues noticed several gaps in the HIV research in Georgia. Before their project, no Fogarty grant in the region focused on the intersection between HIV and substance use, and the country lacked expertise in implementation science methods, specifically in biostatistics. That's where the unique expertise of the grant's co-principal investigator, Dr. Denise Esserman, professor of biostatistics at Yale, comes into play. “The role of a biostatistician in a clinical trial is to help the team come up with the best design to answer their research question and to make sure that this design is implemented appropriately,” she says. “And at the end, they conduct the analysis and help to interpret the results.”

Because so many people with HIV in Georgia go undiagnosed, prevention and treatment methods are underused



*A worker at an HIV testing clinic in Tbilisi, Georgia, meets with a patient.*

in the country. Those most at risk continue to be stigmatized, an issue that Dr. Irma Kirtadze, GIFT's co-principal investigator from Ilia State University, says remains a barrier to prevention and treatment. She referenced a qualitative study of men and women who use drugs in Georgia, funded by the National Institute on Drug Abuse (NIDA) in 2012, which found that stigma was much higher for women than men, resulting in worse outcomes for this group. “Those with HIV who choose to start addiction treatment can and should be tested for HIV,” says Altice. Being in addiction treatment helps people both initially access HIV care and continue with it.

## Training the trainers

The first stage of the program is to train five postdoctoral researchers from diverse medical and behavioral fields, with some working knowledge of advanced biostatistics, in methods related to biostatistics and implementation science and to provide them with immersive opportunities in implementation. These researchers, who began online training in fall 2023, followed by in-person courses at Yale in the spring of this year, will act as mentors for the first group of public health doctoral students who will enter the program in the fall of 2024.

This summer, Ilia State University will host an intensive, three-day boot camp, open to students, faculty, and Ministry of Health public health practitioners. Trainees will learn the principles and the theory, gain skills and experience, share learning experiences, and interact with faculty. The boot camp is supported by the Tbilisi regional office of the U.S. Centers for Disease Control (CDC) and by the WHO. Altice believes this part of the program is integral to GIFT's overall success: “We don't want to leave the country without building in-country expertise.”

# Improving traumatic injury care in Georgia and beyond

The Increasing Capacity for injury Research in EAsTern Europe (iCREATE) grant emphasizes translation across three-related cultures. Led by the University of Iowa (UI) and Babes-Bolyai University (BBU) of Romania, the program aims to improve acute injury treatment while expanding on previous capacity building efforts in Georgia, Armenia, and the Republic of Moldova. This initiative is vital given that all three upper middle-income countries have lacked scientific research focusing on injuries, resulting in critical gaps in evidence-based information. Primary investigator Dr. Cara Hamann, an associate professor at UI, highlighted the political and economic ties linking the three. “Learning to overcome the challenges these countries face makes the work they are doing more relevant and more easily translatable to other former Soviet Union countries,” said Hamann.

Co-investigator Dr. Nino Chikhladze, a professor at Georgia's Ivane Javakishvili Tbilisi State University (TSU), is well acquainted with these transnational bonds. The start of her career coincided with the collapse of the Soviet Union. Despite the turmoil, she saw “an opportunity to make a positive impact on the health and well-being not only of individual patients but also the population of Georgia as a whole.”

After Georgia gained independence from the Soviet Union, a new demand for experts able to lecture on the health care system and public health issues inspired Chikhladze to pursue public health science and education. Over time, prevention of noncommunicable diseases drew her attention. “Since becoming part of the iCREATE project, my research interest is mainly in traumatic injuries,” said Chikhladze.

## Shared shortcomings, common goals

iCREATE, started in 2005, incorporates core curricula related to injury into PhD- and Masters-level public health programs in partner institutions in Georgia, Armenia, and Moldova, while initiating experiential learning projects in the areas of road traffic injury, acute care, and violence against women and children. As part of iCREATE, TSU students attend programs and a summer school organized at BBU, while mentors from both UI and BBU supervise their projects.



Dr. Melinda Gal, former Fogarty trainee, lectures to a summer school class in Cluj, Romania.

After receiving training from iCREATE for almost a decade, BBU became a collaborator on the grant in 2016. Now, they facilitate the implementation of the project in Eastern Europe. Co-principal investigator Dr. Diana Dulf of BBU said, “This type of continuous funding from NIH is a great opportunity to build capacity in research over the long term and support the future leaders in the field of violence and injury prevention in other regions of the world.”

## Publications and potential policy changes

Chikhladze said collaboration with universities in the U.S. and Romania has been vital. In their earliest research, the collaborators observed several shared epidemiological characteristics across various types of injuries, including traumatic brain injuries (TBIs), falls, and road traffic injuries, among the three countries. They also published analyses of data drawn from Georgia's National Center for Disease Control and Public Health database. These comprehensive early studies provided baseline information and data on the main features of injuries, groups at high risk, and general injury trends in Georgia.

“We have now progressed to prospective studies. The comparison of findings from these studies will provide insights into cultural differences in behaviors and risk factors,” said Chikhladze. “Our findings closely align with studies conducted in Europe and the U.S., indicating that falls are a primary cause of TBIs in numerous countries,” said Chikhladze. This work

has significant public health implications, she said. “This evidence can catalyze the development of preventive strategies at the national level.”

The team is expanding its public health focus with forthcoming articles about falls among the elderly and pediatric burns as part of the acute care research portfolio. Meanwhile, Chikhladze is thankful, on behalf of TSU staff and students, to her colleagues at BBU and UI for their continuous support and fruitful partnership. “Collaborative efforts are crucial in preventing injury and violence and improving the health and well-being of the population of Georgia.”



iCREATE summer school in Cluj, Romania



# Learning to CARE for public and environmental health



“Public health is an opportunity to take care of an entire population, not just a small number of people,” said Tamar Kashibadze, a public health specialist at the National Center for Disease Control and Public Health (NCDC) based in Tbilisi, Georgia. It is this expansive focus that attracted her to her profession. “Working in this field means that you are doing

activities not exclusively for your country but for the world. You are a part of global change.”

Kashibadze is currently a doctoral trainee in the Fogarty-funded Clean Air Research & Education (CARE) program, which seeks to enlarge Georgia’s scientific capacity to conduct research related to noncommunicable diseases (NCDs) and environmental health. The program’s ultimate goal is to reduce NCDs through policy and practice. Tamar’s research project, focused on health impacts of ambient air pollution in Tbilisi, is one stepping stone toward achieving that aim.

## Assessing air quality

Both air pollution and secondhand smoke have a great impact on the health of people in Georgia. According to WHO data, the country has the third highest mortality attributed to ambient and indoor air pollution in the world. Meanwhile, existing in-country research opportunities examining NCDs in relation to environmental health are limited in terms of both volume and range of topics. This lack of both scientific evidence on the subject and insufficient research openings in the area prompted Kashibadze to focus her work on air pollution and its impact on human health.

Several years ago, she participated in a workshop on air pollution and health organized by the WHO Regional Office for Europe. There, she was introduced to AirQ+, a software tool that can calculate the magnitude of air pollution’s impact on health. The software is also able to estimate long- and short-term exposures to ambient pollution from several pollutants. “Georgia didn’t have any prior experience in conducting analyses using AirQ+ to determine the potential association between specific diseases and mortality rates linked to air pollution,” explained Kashibadze. “So this was precisely the focus I wanted to pursue.”



An air quality monitoring station in the Saburtalo district of Tbilisi, Georgia.

Insufficient national coverage of 24-hour air quality monitoring stations is one factor that led her to concentrate only on Tbilisi, Georgia’s capital city. Though she’s already conducted several analyses using AirQ+, her research is still in progress.

## A global view

CARE is a collaboration between Emory University, NCDC, the Georgia National Environmental Agency, and Tbilisi State Medical University. The program has allowed Kashibadze to attend online classes at Emory and George Washington University, and she just returned from an intensive course in environmental health at Harvard. She appreciates these educational experiences in the U.S., which also include a previous 2015 Fogarty fellowship at State University of New York, Albany. “I expanded my skills in infectious disease epidemiology research, which I successfully use in the Georgian public health sector,” she said.

Meanwhile, the hard work of developing robust, evidence-based public health policies in Georgia is very much Kashibadze’s priority. The country achieved EU candidate status in December 2023 and “has already made significant progress in some respects,” she said. The introduction of universal health coverage has expanded access to essential health services, while vaccination programs have reduced the incidence of some preventable illnesses. Various prevention and management initiatives have begun to address the growing burden of NCDs, she said. “The environmental health system in Georgia is something that needs strengthening, especially in times when the biggest threat of the 21st century—climate change—is already affecting everyone everywhere.”

Ultimately, Kashibadze’s CARE research that uses AirQ+ software will provide evidence that will help prevent premature deaths. The results will also allow for estimating potential health gains if policies and measures are put in place to reduce air pollution. “Environmental policies in Georgia are not always a top funding priority given the scarcity of public resources and various competing social needs,” she said. “I’m sure this work will contribute to evidence-based decision making regarding national funding priorities.”

# DIRECTOR'S COLUMN

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

## Memory of Joel Breman

Photo courtesy ASTMH



Dr. Joel Breman

It is with a heavy heart but fond memories that I reflect on the life of our esteemed colleague, Dr. Joel Breman, who passed in Chevy Chase, Maryland, on April 6. Joel, a beloved member of the Fogarty community, was born in Chicago in 1936 and grew up in Los Angeles where he excelled as student body president and a football player.

Joel completed his undergraduate studies at UCLA—where he was president of his fraternity and rowed varsity crew—in the late 1950s, and then embarked on a unique path, serving as an artillery officer before pursuing his medical education at the Keck School of Medicine, University of Southern California. His commitment to global health emerged early on when he joined the CDC-supported global smallpox program, stationed in Guinea. There, he worked tirelessly to eradicate smallpox and combat measles across West and Central Africa.

Joel's thirst for knowledge led him to further training in infectious diseases at the Harvard Medical Service at Boston City Hospital and the London School of Hygiene & Tropical Medicine. Armed with a diploma in tropical pediatric hygiene (DTPH), he delved into epidemiological research in francophone countries, focusing on childhood immunizations and the immuno-depressive effect of malaria.

In 1976, Joel's expertise was called for during the response to the first epidemic of Ebola hemorrhagic fever in the Democratic Republic of Congo. Subsequently, he assumed several significant roles at the WHO in Geneva, overseeing the certification of smallpox eradication and pioneering research on human mpox.

Returning to the CDC in 1980, Joel spearheaded efforts to combat malaria, expanding the Malaria Branch's reach and impact in Africa. Under his leadership, the branch flourished, conducting pivotal research that informed national and international control guidelines.

In 1993, Joel embarked on a new chapter of his career becoming the associate director of the National Vaccine Program Office in Washington, D.C., before joining the Fogarty International Center two years later. At Fogarty, Joel's leadership was transformative, establishing research programs focused on emerging infectious diseases and furthering global health initiatives.

Even in his emeritus years, Joel remained dedicated to his passion for epidemiology and disease eradication. He collaborated on epidemiological research, defining the burden of malaria and the pervasiveness of poor-quality drugs. He also taught a course on disease control at George Washington University's School of Public Health, served as president of the American Society of Tropical Medicine and Hygiene (ASTMH), and consulted for the WHO, the Carter Center, the Gates Foundation, USAID, FDA, and the Multilateral Initiative on Malaria. He was also co-chair of the WHO International Commission for the Certification of Dracunculiasis Eradication and chair of an ad hoc group planning the celebration of the 40th anniversary since the World Health Assembly confirmed the eradication of smallpox. Joel has two publications forthcoming this year: his personal memoir, as well as a medical

textbook from Oxford University Press, "The Principles and Practice of Disease Eradication."

I thoroughly enjoyed my interactions with Joel since I came to Fogarty in 2015. We had much in common, including rowing, past appointments at CDC, working in Africa, participating in responses to Ebola and other infectious diseases, writing, and mentoring the next generation of public health leaders. I often stopped by his desk to hear about his latest endeavors and remarkable stories and insights into public health events and personalities, past and present.

We honor a life lived with purpose, dedication, and love, rowing many global health initiatives across the finish line with long and strong strokes of the oar. Joel's legacy will continue to inspire us, guiding our efforts to create a healthier, more equitable world.



Dr. Joel Breman, (kneeling in front row, left), was part of the team established to control the 1976 Ebola outbreak in Yambuku, Zaire (now the Democratic Republic of the Congo).

CDC / Dr. Kyle Conrad



### NCI Center for Global Health branch director retires

Cathy Muha, RN, MSN, has retired from her role as branch director for the planning and operations branch in the National Cancer Institute's (NCI) Center for Global Health. For the last 10 years, Cathy's role focused on international scientific partnerships, cancer control and planning, and program evaluation.



### BMJ Global Health editor-in-chief steps down

Dr. Seye Abimbola has stepped down from his role as editor-in-chief of *BMJ Global Health* after nearly nine years and two terms in post. During his tenure, Abimbola was listed in Vox's "The 2023 Future Perfect 50" list for his work on fighting global poverty and health threats.



### Soubeyran elected head of world animal health body

Emmanuelle Soubeyran, head of France's veterinary services, was elected director general of the World Organisation for Animal Health (WOAH). Her goals include boosting links with other international organizations, such as the United Nations' Food and Agriculture Organization, after recent crises have shown close ties between animal and human health.



### Gates Medical Research Institute names new CEO

Dr. Patrice Matchaba has been named chief executive officer of the Bill & Melinda Gates Medical Research Institute, succeeding Dr. Emilio Emini. Before joining the institute, Matchaba was president of Novartis' U.S. Foundation, group head of Novartis Global Health, and senior research scientist at the Cochrane Centre based at the South African Medical Research Centre in Cape Town.



### Barbados prime minister receives WHO award

WHO Director-General Dr. Tedros Ghebreyesus awarded a Director-General's Award for Global Health to Barbados Prime Minister Mia Mottley at the 77th World Health Assembly. The director said of Mottley, "Her tireless efforts for climate action help protect the health of all peoples, now and in the future."

### Primary health care prevents child deaths

The implementation of primary health care over the last two decades has prevented more than 300,000 child deaths in four countries, according to a study published in *The Lancet Global Health*. The evaluation by Barcelona Institute for Global Health focused on Brazil, Colombia, Ecuador, and Mexico from 2000 to 2019.

### Insight into malaria drug resistance

Malaria led to 608,000 deaths in 2022. A study from SMART (Singapore-MIT Alliance for Research and Technology), published in *Nature Microbiology*, found that a cellular process called transfer ribonucleic acid modification—where cells alter RNA molecules in response to drug-induced stress—influences a parasite's ability to develop drug resistance. The findings could help researchers develop new drugs.

### WHO updates priority pathogens

The WHO's Bacterial Priority Pathogens List (BPPL) 2024, released in May, saw the removal of five pathogen-antibiotic combinations that were included in BPPL 2017, and the addition of four new combinations. Third-generation cephalosporin-resistant *Enterobacterales* are listed as a standalone item and Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) infection was moved from critical to high priority.

### Funding to prevent sepsis in newborns

The Center for Vaccine Development and Global Health at University of Maryland School of Medicine received \$3.96 million to develop a maternal vaccine that prevents sepsis in newborns and infants. An estimated 2.5 million neonates die annually of sepsis, with the greatest burden in low- and middle-income countries.

### Linking dengue to severe disease

A study in *Science Translational Medicine* explains how the four dengue subtypes influence the risk of severe infections. The researchers gathered data from 21 years of dengue surveillance from Bangkok, Thailand, and determined which combinations of subtypes pointed to mild or severe forms of dengue, which is transmitted by infected mosquitoes.

Funding Opportunity Announcement	Deadline	Details
Chronic, NCDs & Disorders Research Training D43 Clinical Trial Optional	Jul 15, 2024	<a href="https://go.nih.gov/NCDtraining">go.nih.gov/NCDtraining</a>
Global Infectious Diseases D43 Clinical Trial Optional	Aug 6, 2024	<a href="https://go.nih.gov/Fogarty-GID">go.nih.gov/Fogarty-GID</a>
Fogarty HIV Research Training G11 Clinical Trials Not Allowed D71 Clinical Trial Not Allowed	Aug 22, 2024	<a href="https://go.nih.gov/HIV-ResearchTraining">go.nih.gov/HIV-ResearchTraining</a>

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

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SCAN AND READ THIS ISSUE ONLINE

## Get ready for NIH grant process updates coming in 2025

Next year brings big changes to the National Institutes of Health (NIH) grants process. Brief summaries of these changes are below. For a full list visit: [go.nih.gov/Grants2025](https://go.nih.gov/Grants2025)



### Changes for applications due on or after January 25, 2025

**Simplified peer review:** The updated framework focuses on scientific merit and reducing reputational bias in grant evaluation. It affects most competing research project grant applications.

**Fellowship updates:** Both the review criteria for fellowship applications and the PHS Fellowship Supplemental Form are being updated.

**Training program form updates:** The PHS 398 Research Training Program Plan Form and the Training Tables are being modified.

**Updated instructions for reference letters:** NIH is updating the instructions for reference letters to provide more structure to their content.

**Transition to FORMS-I:** New forms will help implement the policy updates outlined here and align form instructions and field labels with revised terminology.

### Changes taking effect in May 2025

**Common forms for biosketch and support:** NIH is adopting Federal Common Forms for biographical sketch and current and pending support.