



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

Bill Gates to deliver 2013 Barmes lecture at NIH

Global health philanthropist Bill Gates will visit NIH on Monday, Dec. 2, to present the 2013 David E. Barmes Global Health Lecture. In addition to delivering his talk titled “Why the Future Needs Biomedical Innovation,” Gates will discuss global health priorities with NIH leaders and visit several infectious disease labs.

The Bill and Melinda Gates Foundation supports a broad range of NIH global health research projects involving malaria, diarrheal diseases, nutrition, parasitic worms, tuberculosis and HIV, all in collaboration with the Foundation for NIH.

The annual address, co-sponsored by Fogarty and the National Institute of Dental and Craniofacial Research, honors the late David E. Barmes, a public health dentist. The speech will be available via webcast, live and following the event.

For more information visit: <http://bit.ly/Barmes2013>

Photo courtesy of the Bill and Melinda Gates Foundation/Poashant Panjari

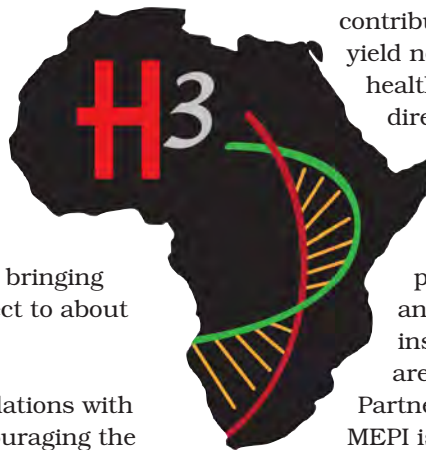


Bill Gates will visit NIH on Dec. 2 to meet with NIH leaders and give a speech on biomedical innovation.

NIH programs build synergy, capacity in Africa

The NIH is increasing its investment in Africa, adding funds for genomics studies, related training and to build biorepositories and other scientific infrastructure. The Human Heredity and Health in Africa (H3Africa) initiative, launched by NIH and the Wellcome Trust in 2010, recently announced its second round of awards, bringing the total funding for the multiyear project to about \$74 million.

“Studying human diseases within populations with the greatest genetic variability and encouraging the



contributions of our African colleagues should yield new insights about the role of genetics in health and disease,” said Dr. Eric D. Green, director of the National Human Genome Research Institute (NHGRI), which helps coordinate NIH H3Africa grants.

There is growing synergy among participants in the genomics initiative and other NIH projects in the region. For instance the majority of H3Africa institutions are also engaged in the Medical Education Partnership Initiative (MEPI). Begun in 2010, MEPI is designed to strengthen medical education,

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- Reviews progress and plans to fill research gaps
- Considers growth in smoking among women and youth
- Suggests leveraging US lessons learned, NCD research

WHO's Chan urges greater focus on chronic diseases

No health system in the world is adequately prepared to cope with the looming surge in noncommunicable diseases such as diabetes, cancer and cardiovascular conditions, and all countries should make prevention of these chronic health threats a top priority, WHO Director-General Dr. Margaret Chan recently told an audience of U.S. Department of Health and Human Services staff.



Photo by Christopher Black/WHO

A profound shift in public health practice is essential to meet the surging noncommunicable disease burden, WHO's Dr. Margaret Chan said.

“Instead of diseases vanishing as living standards improve, socioeconomic progress is actually creating the conditions that favor the rise of noncommunicable diseases,” which now cause more mortality than communicable diseases, she said. “Economic growth, modernization and urbanization have opened wide the entry point for the spread of unhealthy lifestyles.”

Whereas in the past, obesity, cardiovascular disease, hypertension and similar chronic conditions were regarded as rich nations' problems, today 80 percent of the burden from these falls on low- and middle-income countries. Yet, Chan said, the health systems in developing countries were designed, staffed and equipped to manage brief episodes of acute illness from infectious diseases, not long-lasting conditions.

“This is a seismic shift that calls for profound changes in the mindset and profound changes in the practice of public health,” she said. “Prevention must be the cornerstone of the global response to these diseases.”

One way to prepare for this changing outlook is to build adequate capacity for tackling noncommunicable diseases, especially in developing countries, she urged, noting, “We need to provide the technical support so they can build self-reliance. Countries do not expect charity, they want capacity.”

For instance, all countries need the infrastructure to conduct surveillance and respond to unusual disease patterns, to control the quality and safety of medicines and food, discover which diseases cause the heaviest burden and study whether interventions are working. “Some 85 countries in the WHO representing 60 percent of the world's population do not have reliable systems for civil registration and vital statistics,” Chan said. “It begs the question, ‘What are we measuring?’ when you don't even know your denominator.”

Developing countries need to do more to reduce the brain drain of their qualified medical and scientific workforce, Chan suggested, urging governments to provide functioning work environments and keep as low as possible the cost of medicine for their population.

Some noncommunicable diseases pose a particular threat to Asian populations, Chan noted, citing diabetes in China as an example. A national survey published in September's *JAMA* found that 114 million adults have diabetes, about 12 percent of the population. Most shocking, she observed, was the estimate that nearly half the total Chinese adult population has prediabetes—an additional 493 million people who are at risk for developing the full-blown disease. Scientists have attributed this development to rising incomes and changing lifestyles, including physical inactivity and an unhealthy diet.

Chan said the dietary shift is particularly ominous. “The cheapest, most convenient and tastiest foods are also the most unhealthy—high in energy and sodium, and low in nutrients. Their market penetration over a very short time is astonishing. Junk food is becoming the new staple global diet. This should be our concern.”

She asked rhetorically, “When the cost of diabetes devours the economic gains, doesn't health deserve a prime place in the equation of what progress means?”

Even as countries build up their capacity to manage and prevent noncommunicable diseases, they cannot let down their guard against infectious diseases or other threats to public health such as counterfeit medicines, contaminated food and dangerously high levels of air pollution, Chan cautioned. She concluded that more than ever before, “the threats to health are more numerous, the causes more ominous and the burden more onerous.”

RESOURCE

Videocast: <http://1.usa.gov/1dRZtWN>

Fogarty programs spurs global health innovations

In an attempt to create “mini-Manhattan Projects,” Fogarty is funding multidisciplinary teams to identify thorny global health problems and take a solutions-based approach to resolve them. Several shared their ongoing efforts at a recent NIH meeting. For example, presenting novel architectural and engineering approaches to combat tuberculosis and a low-tech diagnostic tool to reduce malaria in low-resource settings.

The Fogarty Framework Programs for Global Health Innovation encourages multidisciplinary research and training aimed at developing new products, processes and policies to solve health problems in low- and middle-income countries. The initiative supports joint training for U.S. and developing country researchers as they brainstorm possible solutions, conduct research to validate their concepts, implement successful solutions and bring them to scale. So far, Fogarty has awarded 10 Framework Innovation grants, totaling nearly \$16 million over five years.

“Not all of the innovation projects will succeed but it is our intention that, by going through this process, the participants will learn to think more creatively and gain experience bringing different disciplines to bear on a single problem,” said Fogarty’s Dr. Flora Katz, who’s overseeing the program. “Our definition of innovation in this context is the translation of a new idea into significant and positive change.”

Developing low-cost malaria diagnostics

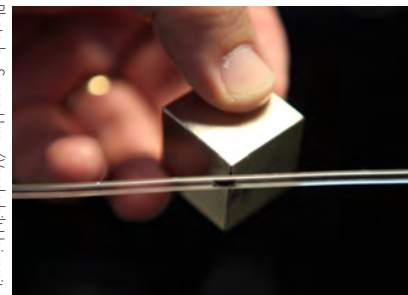
Malaria is notoriously difficult to diagnose, especially in low-resource settings without ready access to lab equipment. A key problem is hidden infection in asymptomatic people. They don’t seek treatment so mosquitoes biting them can transfer *Plasmodium falciparum* parasites to people nearby.

Identifying and treating these malaria reservoirs requires a sensitive diagnostic test, but existing products are either too expensive, unable to detect low infection levels or require highly trained lab assistants. A Framework grant awarded to Drs. Frederik Haselton, Douglas Heimburger and David W. Wright at Vanderbilt University will enable a dozen American and Zambian research trainees to develop and deploy novel solutions for this critical issue. A new inexpensive test would improve the likelihood of detecting infection and also reduce drug resistance in the parasite by treating only those who harbor it instead of blanket-treating anyone with a fever, which commonly occurs in malaria endemic countries.

Wright’s lab previously developed a related low-cost tool that prepares samples for testing. For this, a minimally

trained operator places a few drops of blood into the end of a small plastic tube, which already contains a cluster of tiny magnetic beads that attract molecules from the malaria parasite. The operator then uses a handheld magnet to draw the beads down the tube through various liquid chambers designed to prime the molecules for testing.

Photo by Susan Urry/Vanderbilt University



Tiny magnets and plastic tubing are used in a malaria diagnostic.

Partnering with architects to combat TB

The spread of drug-resistant TB is a growing concern generally and poses a serious problem in confined, crowded spaces such as hospitals, clinics, prisons and refugee camps. A Framework grant led by Dr. Edward A. Nardell at Brigham and Women’s Hospital is bringing together architects and engineers with infectious disease researchers and others to study new ways to slow the spread of TB.

One aspect of his project builds on a previous effort in Rwanda, where Nardell’s team collaborated on the design of a new hospital specifically to minimize airborne TB spread. They located it on the top of a hill to maximize natural airflow, incorporated plenty of windows for cross-ventilation, changed the ward layout, added large fans and installed ultraviolet lights to deactivate TB bacteria. With the Framework grant, Nardell and his colleagues will guide U.S., South African and Peruvian trainees as they look for fresh approaches to combat TB.

Fogarty Framework Innovation grantees at Brigham and Women’s Hospital are looking for new ways to reduce TB’s spread, expanding on previous building design work to maximize air flow to reduce disease transmission in treatment facilities.

Photo by Alan Ricks/MASS Design Group



NIH programs build synergy, capacity in Africa

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improve faculty retention and build clinical and research capacity in Africa. The \$135 million project—funded by NIH and the U.S. President’s Emergency Plan for AIDS Relief—is co-administered by Fogarty and the Health Resources and Services Administration.

Both H3Africa and MEPI were cultivated by the NIH Common Fund, the crosscutting NIH program intended to catalyze high-impact ventures that are broadly relevant to improving health. The expanding network of African researchers involved in the endeavors includes a number of alumni of Fogarty’s research training programs.

“We are increasingly seeing synergies build in African research, as targeted training programs supported by Fogarty and other funders produce a cadre of scientists with excellent skills and knowledge who can then contribute to cutting-edge research across Africa,” said Fogarty Director Dr. Roger I. Glass.

For instance, Dr. Clement Adebamowo, an oncologist and bioethicist at Institute of Human Virology in Abuja, Nigeria, will manage a \$4 million H3Africa grant to learn more about Africa’s most common carcinoma—cervical cancer—and the associated human papilloma virus. Adebamowo’s affiliation with Fogarty began in 2004, when he took a bioethics training course. He then obtained a grant from Fogarty and NHGRI, which helped him launch a bioethics master’s program in Nigeria, its first ever multidisciplinary degree, and establish his country’s first formal code for research ethics.

“Fogarty’s programs opened my eyes to what is possible in terms of developing a high-quality research career, even for someone located in a low-income country,” Adebamowo recalled. “Fogarty also provided the opportunity to meet the scientists you would ordinarily only read about in books. This built our confidence and showed us the value of mentored training.”

Another Nigerian, Dr. Christian Happi of Redeemer’s University, will lead an H3Africa award to study pathogens that cause fevers in rural Africa. Febrile illnesses are a common cause of disability and death in tropical developing countries. Happi and his team from Nigeria, Senegal, Sierra Leone and the U.S. will use new sequencing technologies and microbial metagenomics—the study of microbial communities.

Happi began his research training at Harvard School of Public Health in 2003 under Fogarty’s Global Infectious Disease Research Training Program. Five years later, he received his own Fogarty International Research Collaboration Award to investigate *Plasmodium falciparum* resistance to artemisinin-combination therapies in Nigeria.

“Those grants provided enough resources to increase my specialized skills, my productivity, my visibility, and to make me more competitive,” he said. “Becoming an independent investigator was a major turning point in my career.”

A key component of the H3Africa initiative is to develop biorepositories, so that Africans can build and locally maintain a collection of biological specimens that will be made available to the entire research community. Dr. Moses Joloba of Makerere University in Uganda received one of the biorepository pilot study grants.

Joloba’s history with Fogarty goes back to 1996, when he began studying for a master’s then a postdoctoral degree in molecular biology, supported by Case Western University’s Fogarty AIDS International Training and Research Program grant. “During these years, I received a lot of knowledge and technical skills in handling laboratory-related activities,” Joloba noted. “I developed networks with more experienced scientists that have mentored me in my career.”

He earned a large grant from NIH’s National Institute of Allergy and Infectious Diseases and established a molecular biology laboratory at Makerere. He currently receives support from the International Implementation, Clinical, Operational and Health Services Research Training Award for AIDS and Tuberculosis program, funded by Fogarty and NIH partners.

“I chose to be a scientist because I believed it could offer some solutions to key human health problems,” he said. “The desire to use science to solve some of the human health issues has always motivated me.”

Several participants in Nigeria’s MEPI grant at the University of Ibadan worked behind the scenes to help two investigators—Drs. Mayowa Owolabi and Bruce Ovbiagele—prepare a successful proposal for an NIH H3Africa grant to study stroke, a major killer in Africa. After the pair participated in a MEPI grant writing workshop, their draft application was reviewed by Drs. Ogunniyi, Odaibo and Olaleye and was backed by letters of support, finally netting a \$2.37 million grant.

“As H3Africa, MEPI and other NIH initiatives in Africa mature, they are building the framework and human capacity necessary so the region can take ownership of its research agenda, and set priorities driven by local health needs,” said Glass. “The strong foundation we are putting in place provides promising opportunities for additional funders.”

RESOURCES

NIH press release: <http://bit.ly/H3grants>

H3Africa website: www.h3africa.org

MEPI website: <http://bit.ly/MEPInet>

Researchers suggest phased flu vaccination for China

China should tailor its influenza vaccination strategies to account for its three distinct flu regions, according to the first comprehensive study of the country's flu patterns conducted by a research team of Chinese and American scientists.

Flu season in northern China occurs during the same period as in the world's other northern temperate zones, but in the south the disease peaks in the spring, while patterns in a third, intermediate zone are complex and require more research, according to the study, led by Fogarty researchers. The team has been assisting the Chinese Centers for Disease Control and Prevention with flu studies for several years, including providing training to a number of Chinese scientists who have visited the NIH campus.

"This research suggests the need for staggered timing of vaccination in three broad epidemiological regions," said Dr. Cecile Viboud, who co-authored the study with Fogarty colleagues and Chinese collaborators.

The study recommends that northern China conduct annual vaccination campaigns starting in October, as is typically recommended for the Northern Hemisphere. Southernmost Chinese provinces, in contrast, would be better off vaccinating beginning in February.

The research published by *PLOS Medicine* was part of the Multinational Influenza Seasonal Mortality Study, an ongoing, Fogarty-led collaborative effort to study the epidemiology and evolution of influenza in the tropics and other parts of the globe. NIH and the Chinese CDC funded the work.

The study aimed to characterize the seasonality of the disease across China to help optimize the timing of future vaccination programs. While China introduced seasonal influenza vaccination in 1998, only about 2 percent of the population is routinely immunized. Although health workers in Beijing and a few other cities now vaccinate older adults and school-age children against flu, the country has yet to initiate a countrywide plan. It is estimated that influenza annually causes 11-18 deaths per 100,000 people in China, with underdeveloped rural areas suffering two to three times higher flu-related death rates than wealthier cities.

More research would be helpful to confirm the optimal vaccination policy, particularly for the mid-latitude provinces around Shanghai, the authors stated.



Research conducted by Fogarty and China CDC scientists identifies three regions for influenza vaccination in China: Annual vaccination campaigns should be initiated in October-November in northern China (purple) and in February-March in southern China (green) to accommodate local seasonal influenza activity. In the mid-latitude region around Shanghai (yellow), the optimal timing of vaccination is complicated by semiannual influenza activity and should be clarified based on further research.

"Before a national influenza vaccination program can be established in this large, climatologically diverse country, public health experts need a clear picture of influenza seasonally across the country that could be used to optimize the timing of a future Chinese vaccination effort," Viboud said.

The study showed influenza peaked on average between late December and early January in northern China. A weaker but still significant annual peak occurred from mid-May to mid-June in the south. In mid-latitude provinces, there were semiannual peaks in January-February and again in June-August.

Study data were gathered by collecting samples from participating hospitals in cities in each of China's 30 provinces from 2005-2011. Statistical analyses enabled the researchers to designate three epidemiologically distinct flu regions.

The immunity stimulated by current flu vaccines tends to decay within four to eight months, so it is vital for people to be vaccinated in the months immediately preceding flu season, the authors noted.

Given the growing interest in rolling out national influenza immunization programs in low- and middle-income countries, the authors suggest these findings highlight the importance of ensuring that vaccination strategies are optimized by taking into account local disease patterns.

RESOURCE

Article: <http://bit.ly/chinaflu>

PROFILE

Fulbright-Fogarty Fellow analyzes lung injury in Peru

By Arthur Allen

When Navid Shams first got to Lima, he found it difficult to transition to Peru's chatty culture. He'd arrive home from a hard day's work, but couldn't get into his apartment until his landlady and neighbors had engaged him in 45 minutes of conversation. "I thought I was going directly home, but that almost never happened!" he said. "After a while, though, I started to appreciate the value of just telling stories, and listening."

As it turns out, the power of narratives became the focus of Shams' research in Lima, where he completed a 10-month Fulbright-Fogarty Fellowship in Public Health, working with Dr. William Checkley, an assistant professor of medicine at Johns Hopkins University.

His research, examining the local standards of care for patients with acute lung injury, expanded to explore long-term health issues of intensive care unit (ICU) patients. Shams conducted a series of lengthy interviews with patients six months after they left the ICU to track their recovery over time.

"The patients have problems that the specialists who follow them may not appreciate," he said. "Their pulmonary function usually gets better but that process can take months or even years. The other issue to address that's newer and interesting is mental health. How did the experience in the ICU affect their sleep? Did it cause depression and anxiety? As doctors, we sometimes think of patients being in a coma, but they remember a lot—moments where they felt trapped, people drawing blood, tubes in their throats. Being in that environment leaves them with a kind of post-traumatic stress."

One unique aspect of Shams' project is the extended time he spends with each patient interviewing and examining them to gain a very broad view of their health status. "I really get to understand what they went through," Shams observed. "And that's what's missing from their normal care. It's really comforting for them to



Navid Shams, M.P.H.

Fulbright-Fogarty Fellow: 2012-2013

Fellowship at: AB PRISMA in Lima, Peru

U.S. partner: Johns Hopkins University

Research topic: Long-term outcomes in ICU patients

hear that other people who've been in the ICU experience the same thoughts and problems—that somebody understands them and knows they can get better."

When the project began in 2009, its purpose was to examine 90-day mortality of patients at five intensive care units in Lima, and how it correlated with clinical management, particularly protocols of mechanical ventilation. That aspect of the study continues, but grew to include long-term morbidity outcomes beyond the six-month period, Shams said.

In addition to learning more about how to conduct research, Shams also passed on knowledge to his Peruvian colleagues, including training two nurses to use sophisticated machines to measure lung function.

"Navid has been an asset to our Peru-based project, and has brought an important perspective into our research," Checkley said. "More importantly, Navid has identified potentially intervenable mental and physical health problems in patients receiving critical care."

Shams, who immigrated to the U.S. from Iran with his parents, has long been fascinated by different cultures and their attitudes toward public health and medicine. After obtaining a master's in international health and epidemiology at Boston University in 2009, he conducted clinical field work on Chagas disease in Bolivia. After his fellowship in Peru, he returned to New York Medical College for his fourth year of studies.

His experience as a Fulbright-Fogarty Fellow has caused Shams to reconsider his career options. "Spending so much time with these patients made me really love clinical work. I'd like to go for a mix—continue the research, which I enjoy, but also have time for patient care."

AMBASSADOR ERIC GOOSBY, M.D.

Ambassador Eric Goosby stepped down from his position as U.S. AIDS Coordinator in late October, having directed all U.S. government international HIV/AIDS efforts for the past four and a half years. He oversaw the President's Emergency Plan for AIDS Relief and its related Medical Education Partnership Initiative. He also led U.S. engagement with the Global Fund to Fight AIDS, Tuberculosis and Malaria. Goosby has more than 25 years of experience in HIV/AIDS, from his early years treating patients to his engagement at the highest level of policy leadership.



What are your thoughts as you step down from your position as U.S. Global AIDS Coordinator?

I am deeply grateful to President Obama who gave me this extraordinary chance to serve and to Secretaries Clinton and Kerry for their exceptional leadership in this historic endeavor—and for the faith they put in me. These past four and a half years have been among the most fulfilling of my 30-year career in HIV/AIDS.

I want to express my sincere appreciation to former President Bush, whose bold vision launched U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and brought the full weight of American power and capability to the global effort to combat this epidemic, and to the United States Congress for its leadership, from both sides of the aisle, which has consistently and courageously stood behind this country's global AIDS efforts.

I also want to send my heartfelt thanks to my staff and to all the incredible men and women with whom I have served—Americans of all backgrounds, as well as colleagues around the world. These committed and courageous people are living proof that through determination, dedication, and unflinching effort all things are truly possible. And, above all, I want to thank my family, who stood by my side and gave me the strength to carry on not only in recent years, but for the past three decades of my involvement in the fight against HIV/AIDS.

What progress has been made?

I am extremely proud of all that we have accomplished together. Since 2008, we have more than tripled the number of individuals receiving lifesaving antiretroviral therapy through support from PEPFAR. We have surpassed one million babies being born without HIV due to PEPFAR-supported programs. And perhaps most importantly, we have arrived at a moment in which creating an AIDS-free generation is truly within our reach.

Through our collective efforts, we have also all been a part of transforming the way that development is done. While continuing to rapidly expand access to lifesaving HIV

services, we have moved PEPFAR from an emergency state to a more sustainable footing. We have helped establish a robust health care delivery capability—often where little to none previously existed—that is being used not only to address HIV, but also a broader range of health issues. We have helped elevate issues of health and development into the upper echelons of diplomatic dialogue. And we have evolved our relationship with host countries to a true and enduring partnership—one that positions them to assume greater ownership of their national HIV response.

All of this has only been possible because thousands of committed and compassionate individuals wake up each day and go to bed each night thinking about how we can all do more and do it better. The global AIDS community is truly unlike any other that I have known. I am honored and humbled to have played my small role in this unprecedented worldwide movement.

How do you see the road ahead?

One day in a future we can now clearly see, we will achieve the dream of an AIDS-free generation. When we do, it will mark the completion of an incredible and improbable journey from those terrifying early days of the epidemic in San Francisco.

This epidemic has wrought untold harm on our world, stolen millions of lives, destroyed families and entire communities, and very nearly entire nations. But it also brought out the best in people—in the United States and around the planet.

We can find no better way to honor those we have lost than to keep pushing forward, and to complete the task that we began more than thirty years ago. We must also ensure the lessons of this fight are truly learned and applied to many of the other challenges our world faces. In this way, we can build a future that is not only healthier, but also more peaceful, more just, and more secure for generations to come.

This feature is adapted from the Ambassador's final blog post: <http://bit.ly/Goosby>

Fogarty considers evolving global tobacco landscape

Global efforts to curb tobacco use and secondhand smoke exposure have increased sharply in the past decade, but so has the problem—now one person dies every six seconds because of tobacco, according to WHO data. Alarming, new usage patterns are emerging, with women, young people and developing country populations taking up tobacco at increasing rates.

Low- and middle-income countries (LMICs), where tobacco use is rising fastest, include those least equipped to tackle the associated health burdens from cancer, cardiovascular conditions, and other disease and disability. Many LMICs lack epidemiological data on their population's tobacco use and resulting costs in terms of health care and lost productivity. Consequently, they are not planning preventive action. This prompted Fogarty to establish the International Tobacco and Health Research and Capacity Building Program in 2002. After a decade of investments, Fogarty is reviewing progress and considering new directions.

Fogarty's program has two distinct approaches: supporting observational intervention and policy research, as well as building capacity in fields such as epidemiology, behavior, prevention, treatment, implementation science and health services. Like many Fogarty initiatives, it partners LMIC and U.S. scientists, and emphasizes training and capacity building—the foundations of a robust research infrastructure.

Fogarty's tobacco program has built research skills and infrastructure in developing countries, where tobacco use is rising, particularly among women and children.

“Our support has helped generate tobacco research capacity in many countries that had minimal or no quality data,” said Fogarty Director Dr. Roger I. Glass. “Establishing reliable epidemiological information is essential if countries are to develop a tobacco control program that will be cost-effective and have an impact on their at-risk populations.”

Fogarty recently led an evaluation of the program and found it has made “significant scientific advances” in contributing to tobacco control. It fueled collaborations among investigators in more than 30 countries, trained at least 3,500 individuals and contributed to the publication of over 415 scientific papers.

A number of program participants have reached leadership positions in their home countries, facilitating communication between researchers and policymakers and broadening recognition of the health burden from tobacco use. In Cambodia, for example, one grantee became an in-country WHO tobacco control representative and in Laos, another became a finance ministry coordinator of the Southeast Asian Initiative on Tobacco Tax.

Projects have covered a wide range of topics, including study of behavioral, susceptibility and risk interventions, for instance counseling pregnant women in Argentina to avoid smoking. Other common topics have involved epidemiology and policy research, such as generating data on tobacco and cancer in Kenya. A few projects have examined economics, including strategies the tobacco companies are using to promote products in Africa.

Several grantees investigated tobacco use among young people and women. India faces a major problem with youth smoking, especially of cheap hand-rolled cigarettes. With Fogarty support, Indian and University of Texas researchers studied poor communities in New Delhi and found that a school-based intervention successfully curbed tobacco use rates in adolescents, especially among girls and the youngest students. But the study also underscored the need for additional approaches.

Another collaboration examined a



Photo by Stephen Russell Keith G. Valero/PhotoShare

habit that is common in the Middle East and increasingly popular among U.S. college students who believe it to be safer than cigarettes—hookah, or water pipe, smoking. Researchers in Jordan and at the Virginia Commonwealth University examined the urine of Jordanian students after hookah smoking and found plenty of toxins, including higher levels of carbon monoxide, benzene and other carcinogens than yielded by cigarettes. These findings can inform researchers elsewhere in the region, as well as in the U.S.

One novel Fogarty project looked at how technology can help people quit their tobacco addiction. Researchers in Turkey, in collaboration with the nonprofit Internet Solutions for Kids, devised culturally relevant text messages to encourage participants to maintain their smoking cessation plan. A follow-up study showed the messages helped people stick to their resolve. These findings can be applied to other mHealth efforts to spur behavior change.

As data generated by Fogarty’s program mounts, some governments have responded by adopting or strengthening policies aimed at curbing tobacco use. For instance, in Hungary—which has one of the highest smoking rates in Europe—Fogarty-funded studies generated information about smoking patterns for consideration by government officials. Hungary later raised its tobacco sales tax and passed national clean air laws to reduce secondhand smoke exposure. A Fogarty project in China likewise produced data that helped shape a government policy to ban smoking in railways and airports.

Despite the progress made, many LMICs still lack enough research capacity, data, expertise, policies and other resources to implement sufficient action. As the Fogarty program review noted, in developing countries, “government funding still pales in comparison to the enormity of the tobacco-use epidemic,” and tobacco products continue to gain popularity around the world.

To consider these needs, Fogarty’s Center for Global Health Studies (CGHS), along with NIH partners, held a workshop in June. Leaders in tobacco research, current and former grantees and LMIC policymakers discussed gaps, opportunities and emerging new priorities in tobacco-related research and training. The group plans to publish a scientific roadmap to guide tobacco control efforts.

At a recent Fogarty Board meeting where tobacco issues were discussed, NIDA Director Dr. Nora D. Volkow said the U.S. has much to share. “We’re particularly interested

in how to change the attitudes of young people and take advantage of what we learned in the United States where there’s been a dramatic reduction in smoking among young people,” she said. “How will we take that knowledge and export it into the rest of the world?”

Photo courtesy of Campaign for Tobacco-Free Kids



Tobacco use has been rising in developing countries, especially among women.

Dr. Derek Yach, who is on Fogarty’s advisory board and co-chaired the CGHS workshop, emphasized that research data remain key to persuading countries to face up to their tobacco problem. “We need the right evidence at the right time put in the right hands,” said Yach, who heads the Vitality Institute for Health Promotion. “If you don’t have the epidemiology right, nothing flows. Many governments simply don’t believe the data coming from another country.”

The Fogarty program review observed that “notable opportunities exist” for further achievements in the field. For example, there is little information

about the use and health impact of tobacco in sub-Saharan Africa, even as the industry is expanding markets there. More studies are needed on women in LMICs, who are at increased risk for smoking due to changing social norms, higher income and susceptibility to targeted tobacco industry advertising. Data are also lacking about the use of tobacco products other than cigarettes and the economic aspects of tobacco control, including illegal trade and governance. Finally, as more attention is devoted to noncommunicable diseases linked to tobacco—including cancer, cardiovascular disease and respiratory conditions—the report noted there is an opportunity for cross-pollination and collaboration among researchers working on NCDs and those studying tobacco control.

The report concluded that while Fogarty’s program has contributed significantly to tobacco control evidence and capacity building efforts, and has spurred policy advancements in some LMICs, continued support would bolster the broader field of tobacco control and could ultimately reduce millions of preventable deaths worldwide.

Seven other NIH components have funded the Fogarty program: the National Cancer Institute; National Center on Minority Health and Health Disparities; National Heart, Lung, and Blood Institute; National Institute of Child Health and Human Development; National Institute on Drug Abuse; National Institute of Nursing Research and the Office of Behavioral and Social Sciences Research. The CDC has also contributed.

RESOURCE

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

OPINION

By Dr. Roger I. Glass, Director, Fogarty International Center

We must do more to discourage global tobacco use



We face formidable challenges in global health—from pathogens and parasites that have been around for millennia to diseases brought on by diet and other lifestyle changes. But one totally avoidable, major health danger persists today even though we've known for half a century how to prevent it. I'm talking about tobacco use.

While smoking has decreased in the U.S. and much of Europe, it is rising in many low- and middle-income countries (LMICs). The most recent Global Burden of Disease Study 2010 by the Institute for Health Metrics and Evaluation noted that disease attributed to tobacco is second only to that from high blood pressure. The study blamed tobacco for about 6.3 million deaths per year. Tobacco use is increasing most rapidly among young people, who may cement their addiction before adulthood, and among women, who risk harming their fetuses as well as themselves. At the same time, the industry is producing new products—flavored cigarettes and chewing tobacco, broader social use of hookahs and e-cigarettes that provide nicotine without smoke—that might pose other as yet unknown long-term health risks.

Cigarettes were long believed to be harmless until a landmark study published in 1964 definitively linked smoking with premature death from lung cancer and heart disease. Early in my career, I worked at Oxford University with Sir Richard Doll. He surveyed all male physicians in England about their smoking habits and then collected their death certificates to determine the cause of death and link this to their smoking histories. The lethal effects of smoking were evident: one-third of those who smoked died of related causes. We asked Sir Richard why he didn't try to ban or reduce tobacco use in the U.K. immediately. He responded like a true scientist—that he was responsible for gathering the evidence but tobacco control was an issue for the politicians, a decision he regretted later in life.

Since then, scientists have come up with many interventions that health authorities use to persuade people to quit or, preferably, avoid starting a tobacco habit in the first place. Some of these policies are money

saving propositions, such as placing high taxes on cigarettes, a venture that raises funds while discouraging smoking. Some countries have required new laws to remove smoking from public places, stop advertising at sports events, reduce smoking in movies, and place severe health warnings on packaging. In fact, the WHO Framework Convention for Tobacco Control—agreed to by 168 signatories and adopted in 2005—laid out some global activities to which all could agree. But new interventions must be based upon sound evidence they are effective and what works in one region or country may not work in another.

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For the last decade, Fogarty has run a small program designed to address this problem. Our tobacco grants have successfully developed research capacity in 30-plus developing countries and trained more than 3,500 scientists in skills such as epidemiology and biostatistics.

Health policymakers have used the project findings to advocate for tobacco control measures, such as restricting public smoking in Hungary and limiting cigarette vending machines in China. Our support has helped researchers study how peer outreach can discourage youth in India from taking up tobacco. Another Fogarty project provided the first-ever studies of the prevalence and dangers of hookah use in Syria and Jordan—useful information throughout the Middle East and also for us here in the U.S., where it's become a worrisome trend.

After a decade of investment in research and research training in the field of global tobacco control, we at Fogarty are weighing how best to move the field forward. Still far too many of those who use tobacco are unaware of the dangers or believe they can quit before it harms them. We need to help low-resource countries build sufficient expertise to figure out what strategies will work best to save their citizens from this deadly addiction.



Former PAHO chief to be neglected disease envoy
Former Pan American Health Organization Director Dr. Mirta Roses Periago has been selected as a special envoy by the Global Network for Neglected Diseases, a Sabin Vaccine Institute initiative. Roses received her medical and epidemiological training in Argentina.



UN appoints Daar to scientific advisory board
The UN has named Dr. Abdallah Daar as a member of the Secretary-General's new Scientific Advisory Board, which aims to strengthen connections between science and policy. Daar, a professor of public health at the University of Toronto, will represent Oman.



Global Health Council chooses Sow as its leader
The Global Health Council has selected Dr. Christine Sow as its executive director. She previously held positions at UNICEF and USAID and is an internationally-recognized advocate for global health, with expertise in HIV/AIDS and maternal and child health programs.



Kenyon becomes CDC global health director
Dr. Thomas Kenyon has been named director of the CDC's Center for Global Health. He was previously Ethiopia country director for the CDC and HHS and earlier worked for the President's Emergency Plan for AIDS Relief.



NIH chooses Koob to lead NIAAA
NIH has announced Dr. George F. Koob will be the next director of the National Institute on Alcohol Abuse and Alcoholism. Koob previously held several positions at the Scripps Research Institute where his research focus was on neuroadaptations of reward circuits.



Fogarty grantee Saravia receives award
Dr. Nancy Gore Saravia has won the 2013 Moselio Schaechter Distinguished Service Award from the American Society for Microbiology. Currently at Columbia's International Center for Medical Research and Training, she has Fogarty funding to study leishmaniasis and other emerging infectious diseases.



Fogarty grantee is new AJTMH editor
Fogarty grantee Dr. Philip Rosenthal, of the University of California, San Francisco, has been named editor-in-chief of the *American Journal of Tropical Medicine and Hygiene*. Supported by Fogarty for 13 years, he manages research training programs in Uganda, focusing on malaria.

WHO reports drug-resistant TB rising

Tuberculosis deaths dropped last year, but marring this progress are the 3 million undiagnosed cases and the growing crisis in drug-resistant TB, according to the WHO's "Global tuberculosis report 2013." Full report: <http://bit.ly/HX2mez>

Neglected diseases still lack attention

Although 336 new chemical entities were approved globally in 2000-2011, only four were for neglected tropical diseases, including three for malaria, according to a recent *Lancet* paper. Paper: <http://bit.ly/NTDupdate>

Disease mapping tool released

A mapping website for schistosomiasis, soil-transmitted helminths and trachoma shows their geographic distribution and treatment status, helping scientists track progress to control them. The tool was developed by the Global Atlas of Helminth Infections. Website: <http://bit.ly/NTDmap>

Academics form new global health forum

The World Federation of Academic Institutions for Global Health was formed recently to coordinate its members' influence on policies and research, and to share best practices in capacity building and educational innovations. Website: www.wfaigh.org

African physician emigration continues

Emigration of physicians from sub-Saharan Africa continues to rise, according to a study in *PLOS Medicine*. The report, based on WHO and American Medical Association data, calls for improved recruitment, training and retention of health care professionals. Paper: <http://bit.ly/MDexit>

USAID releases child in adversity update

A USAID report describes international action the U.S. government plans to take to help children threatened by HIV/AIDS, trafficking or recruitment for war. Several NIH components, including Fogarty, are participating in the global project. Full report: <http://bit.ly/USAIDkids>

Researchers can use global data archive

Researchers interested in studying low- and middle-income countries can access longitudinal data and statistics from INDEPTH, a free online resource. Website: www.indepth-network.org

Funding Opportunities

Funding Opportunity Announcement	Details	Deadline
International Cooperative Biodiversity Groups (U19)	http://bit.ly/55bio55	Dec 11, 2013
International Research Scientist Development Award (K01)	http://1.usa.gov/V9wRRF	Mar 4, 2014
Global Health Research and Research Training eCapacity Initiative (R25)	http://1.usa.gov/190BF4c	May 15, 2014
International Research Ethics Education and Curriculum Development Award (R25)	http://1.usa.gov/15jRbAB	May 22, 2014
For more information, visit www.fic.nih.gov/funding		
Info on resumption of NIH activities following appropriations lapse: http://bit.ly/NIHGuidance		

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Managing editor: Ann Puderbaugh
Ann.Puderbaugh@nih.gov

Editor/writer: Cathy Kristiansen
Catherine.Kristiansen@nih.gov

Photo editor/writer: Jeff Gray
Jeffrey.Gray@nih.gov

Writer: Arthur Allen

Web manager: Anna Pruett Ellis
Anna.Ellis@nih.gov

Designer: Carla Conway

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National Institute on Drug Abuse director discusses addiction with the Dalai Lama



Craving, desire and addiction were the topics considered by leading scientists and philosophers during a recent meeting with the Dalai Lama, the exiled Tibetan spiritual leader. The NIH was represented at the conference by National Institute on Drug Abuse Director Dr. Nora D. Volkow. About 200 participants gathered at the Dalai Lama's private residence in India to share their perspectives on ways to improve treatment of the root causes of craving, desire and addiction.

Volkow gave an overview presentation titled "The Role of Dopamine in the Addicted Human Brain," which described addiction as a disease and detailed the latest findings in neuroscience.

Since 1987, the "Mind & Life" Institute, a Massachusetts-based non-governmental organization, has organized annual dialogues between the Dalai Lama and leading scientists and philosophers to better integrate modern science and Buddhist philosophy.

RESOURCE Webcast: <http://bit.ly/NidaCravings>