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GLOBAL HEALTH MATTERS

FOGARTY

JULY/AUG 2010

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

Fogarty awards $7M to combat chronic diseases

Fogarty is continuing efforts to tackle the growing epidemic of chronic diseases in the developing world, awarding seven new grants totaling about $6.8 million over five years to support research training in cardiovascular disease, diabetes, cancer and other non-communicable conditions.

Now accounting for 60 percent of all deaths worldwide, chronic diseases are becoming increasingly prevalent in the developing world, according to the WHO. Populations in low- and middle-income countries are increasingly undergoing lifestyle changes as a result of economic and cultural transitions.

Four of the new Fogarty grants are being awarded to U.S. institutions for research training in China, Guatemala, Mongolia and Romania. Two are being issued directly to sites in South Africa and Pakistan, and the remaining award will fund a research training network in Asia.

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Photo by David Rochkind

Fogarty's new chronic disease research training awards will aid developing countries, which are seeing a growing epidemic of diabetes, heart disease and other conditions due to lifestyle changes and other causes.

NIH participates in international diabetes summit

NIH leaders participated in the recent Diabetes Summit for Latin America, emphasizing the importance of the science of behavior change and the necessity to build the human capacity required to carry out such research.

More than 250 stakeholders from around the region gathered in Brazil to share ideas about how best to confront the epidemic of diabetes and other chronic diseases.

Heart disease, cancer, diabetes and other chronic diseases are the leading causes of premature death and illness throughout the Americas, according to the WHO. They account for some 4.5 million deaths each year in Latin America and the Caribbean, or 77 percent of all deaths in the region.

Many of these deaths are preventable, the NIH's Dr. Griffin Rodgers told the group during his keynote address. Rogers—director of the National Institute of Diabetes and Digestive and Kidney Diseases—highlighted several NIH-supported trials that have shown lifestyle changes involving diet and exercise are more successful in preventing and controlling diabetes than drug treatment. Rodgers stressed the need for research regarding behavior change to address chronic diseases.

But the challenges posed by the epidemic must be solved with local expertise, said Fogarty director Dr. Roger Glass. "Through its training programs for developing country scientists, Fogarty is creating a body of researchers whose

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FOCUS

Fogarty International Clinical Research Scholars and Fellows

- Improving HIV/AIDS treatment in South Africa
- Preventing sexually transmitted diseases in Peru
- Investigating syphilis in China
- Studying malaria and bioethics in Mali

Read more on pages 8-14

NIH, Wellcome to fund genetic studies in Africa

NIH and the Wellcome Trust, a global charity based in London, have announced a partnership that will provide more than $37 million for genetic studies in Africa. The research focus of the Human Heredity and Health in Africa project, or H3Africa, will be on common, non-communicable disorders such as heart disease and cancer, as well as communicable diseases including malaria. African scientists will conduct the research.

"H3Africa will be fundamentally different than previous investments in medical research in Africa," says Dr. Charles Rotimi, director of the NIH Center for Research on Genomics and Global Health. "In the past, many research projects took samples from Africa and conducted the studies back in Western labs. H3Africa will build the capacity for African researchers to study African populations to solve African problems."

NIH will provide $5 million each year for five years starting in FY 2011, which begins Oct. 1. In addition to committing at least $12 million over the next five years, the Wellcome Trust will provide administrative assistance, advanced training and scientific consultation. In-kind support will come from the African Society for Human Genetics. The National Human Genome Research Institute will manage H3Africa on behalf of the NIH Common Fund.

The project may identify rare genetic variations that could lead to advances in diagnosis and treatment.

Photo by Curt Carnemark/World Bank

NIH and the Wellcome Trust are providing $37 million for genetic studies in Africa, by African scientists, to learn more about common, non-communicable disorders.

For additional information, visit www.genome.gov/27539880.

NIH funds 10 malaria research centers

To accelerate control and help eliminate malaria, the National Institute of Allergy and Infectious Diseases (NIAID) will provide $14 million in first-year funding to establish 10 malaria research centers in Africa, Asia, the Pacific Islands and Latin America.

Each year, malaria-causing parasites infect almost 240 million people and cause more than 850,000 deaths. Forty percent of the world's population lives in areas where malaria is still prevalent.

"One of our primary goals with these centers is to fund cutting-edge research in malaria-endemic areas that will keep up with the rapidly changing epidemiology of the disease," says NIAID director Dr. Anthony Fauci.

Most of the principal investigators receiving the seven-year awards also have Fogarty Global Infectious Disease Research Training Program grants.

For a list of recipients, visit: http://bit.ly/bKlafn

Online resources advance training

Medical students, health care workers and faculty at cash-strapped educational institutions in Africa can access online educational materials, videos and other tools through a new web-based resource called OER Africa. Open education resources, known as OER, are increasingly providing students with up-to-date information and expertise at little or no cost.

OER Africa—established by the South African Institute for Distance Education—has assembled a collection of electronic versions of medical texts and other instructional materials on topics such as reproductive health and laboratory methodology.

The materials are being produced and compiled by a consortium that includes the University of Michigan and several major African research universities.

The collection is online at: http://bit.ly/c1TpC2

Research offers new hope to combat HIV/AIDS

Research presented at this year's International AIDS conference in Vienna offered new hope to those working on HIV/AIDS treatment and prevention. Fogarty grantees and trainees presented promising developments on four topics that generated keen interest: a vaginal gel that reduces the risk of HIV transmission, proof breastfeeding is safe when either the mother or baby is on antiretrovirals, and new recommendations on when treatment should begin.

Microbicide gel reduces HIV transmission

Some scientists are predicting a new vaginal microbicide will be a "game changer," giving women a new effective tool to help stop transmission. Studies show a gel containing tenofovir has been found to reduce the chance of contracting HIV by 39 percent and has no notable side effects.

Women and girls make up the majority of the newly HIV-infected in sub-Saharan Africa. The gel would provide discreet protection they can control, even if they can't guarantee their partner's sexual fidelity or condom use.

The results showed women who used the gel most regularly reduced their chances of infection by 54 percent, according to a study by the Center for the AIDS Program of Research in South Africa (CAPRISA). The trial was led by Dr. Quarraisha Abdool Karim, with participation of eight scientists who've been trained through Fogarty's AIDS International Training and Research Program. A Fogarty bioethics grant also providied expertise.

More testing is needed before the gel is made widely available, the researchers say. Its cost is estimated to be less than 25 cents per application. USAID funded the trial.

Guidelines change for antiretroviral therapy

There are advantages to starting HIV treatment earlier than previously thought, new studies show. Researchers are recommending drug therapy begin once a patient's CD4 level has fallen to 350, when they are still relatively healthy.

The current standard has been that treatment should start when the CD4 level is below 200. At that stage most patients have some symptoms of the disease.

Accordingly, the U.N. is lowering its threshold for treating HIV-positive individuals in developing countries in the hope that earlier treatment will prevent hospitalizations and reduce secondary medical costs. Patients whose infections are under control are much less likely to transmit the virus.

Photo by Richard Lord

At the recent international AIDS conference, Fogarty supported scientists presented research advances, that will improve treatment for patients like these in Malawi.

Guidelines are also changing for patients co-infected with HIV and TB. This population benefits significantly by having HIV therapy start two weeks after beginning TB treatment, rather than waiting the standard eight weeks. Beginning HIV therapy before the TB infection is under control may cause an immune system reaction that can worsen the patient's condition and even cause death.

The findings are a result of a clinical trial in Cambodia, co-funded by the National Institute of Allergy and Infectious Diseases and supported by Fogarty trainees.

Breastfeeding proven safe with ARTs

It is safe for HIV-positive mothers to breastfeed their babies as long as one or the other is on antiretrovirals during the nursing period, as shown by two recent studies supported by Fogarty trainees.

In a trial conducted in Botswana, pregnant women in the third trimester were started on antiretroviral therapy that extended six months into the nursing period. The infants received a single dose of one type of drug and four weeks of another antriretroviral, resulting in a 1.1 percent rate of mother-to-child transmission, the lowest ever reported in Africa.

Researchers in Malawi tested whether treating mothers or infants during breastfeeding led to better outcomes. Their infant-treatment trial reduced the transmission rate to 1.7 percent, while the transmission rate when mothers were treated was 2.9 percent.

Rotavirus vaccine could save lives in poor countries

Rotavirus vaccines are effective in the developing world and introducing vaccines in these settings could substantially decrease childhood mortality from diarrheal diseases, according to a *Lancet* commentary co-authored by Fogarty's director. About 500,000 children die from rotavirus every year, with 85 percent of those occurring in low-income countries.

Vaccines could reduce deaths by as much as 25 percent, according to Dr. Roger I. Glass and his co-author, Dr. E. Anthony S. Nelson of the Chinese University of Hong Kong. Introducing these vaccines in some low-income settings now would allow researchers to assess their full impact to reduce diarrheal deaths and hospitalizations and improve child survival, they suggest.

The commentary, titled "Rotavirus: realizing the potential of a promising vaccine," accompanies two studies in the *Lancet*, which provide new data on the efficacy of rotavirus vaccines.

"Reassuring governments in low-income countries they will be able to purchase vaccines at a reasonable price when support from the GAVI Alliance ends will be the quickest way to encourage their introduction and to establish whether these vaccines will stand alongside smallpox, measles and poliomyelitis vaccines in their public health benefits," according to Glass and Nelson. Further study could identify ways of improving vaccine effectiveness, they conclude.

Commemorating smallpox eradication

Photo by Jean Roy, CDC

Following a WHO-led immunization campaign that spanned the globe, smallpox was declared eradicated 30 years ago, in 1980. A symposium in Rio de Janeiro was organized to focus on the lessons learned from smallpox eradication, considered one of the greatest achievements in modern medicine.

The acute, contagious disease killed up to 30 percent of those who were infected. The virus was transmitted through droplets projected during sneezing and coughing by symptomatic people. Its symptoms include a dense rash that turned into lifelong scars.

Smallpox had plagued humanity for at least 3,000 years. Although it no longer occurs naturally, a stockpile of the vaccine is still kept in two very secure laboratories.

World Bank publishes HIV data from Middle East

After more than 25 years since the discovery of HIV, the Middle East and North Africa region (MENA) is the only area on the globe where epidemiological data and general understanding about the disease continue to be very limited.

A new report published by the World Bank, in a joint effort with the U.N. and WHO, provides the first comprehensive scientific assessment and data-driven epidemiological analysis of HIV in MENA today.

The report is titled "Characterizing the HIV/AIDS Epidemic in the Middle East and North Africa: Time for Strategic Action."

Recommendations include the need for data, expanded research, evidence-based policy, prevention efforts and general awareness to combat stigma and discrimination. The authors also advocate a shift in focus away from law enforcement and toward medical risk and vulnerability.

People who use drugs intravenously are the highest risk group for HIV. The entire MENA region is flooded with inexpensive drugs due to record levels of heroin production in Afghanistan, the source of more than 90 percent of the world's supply. Intravenous drug use is a growing problem, especially in Pakistan and Iran.

For the full World Bank report, visit: http://bit.ly/cRxDIk

Research has resumed in Haiti, following quake

Despite January's devastating earthquake, research is again underway in Haiti, thanks to the efforts of longtime Fogarty grantee, Dr. Jean "Bill" Pape. He addressed the NIH community recently while in town to accept the 2010 Gates Award for Global Health on behalf of GHESKIO— the world's first HIV/AIDS organization—which he founded nearly 30 years ago and still directs.

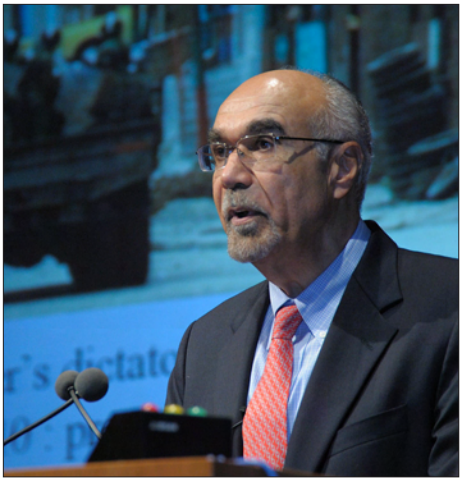
Though still facing numerous challenges, he reports GHESKIO has been able to resume nearly all of its studies. Immediately after the disaster, Pape and his team had stopped research efforts to provide care for about 7,000 homeless people camped on and near its campus in downtown Port-au-Prince. They provided emergency surgery and rehabilitation care to scores more, scaled-up tuberculosis screening and treatment, and continued HIV services for 22,000 patients.

GHESKIO, known by the French acronym for the Haitian Group for the Study of Kaposi's Sarcoma and Opportunistic Infections, has provided continuous, free medical care in Haiti since 1982.

Most notably, the GHESKIO team helped lower the prevalence of HIV in the population by more than half, from 6.2 to 2.2 percent. With support from NIH and other funders, GHESKIO has pursued a three-pronged approach, leveraging the synergy of training, research and service delivery.

"Capacity building has been essential and research has been the cornerstone of that," Pape said. "Clearly, without this, there is no way we could have coped with the earthquake."

Photo by Bill Branson



Longtime Fogarty grantee Dr. Jean 'Bill' Pape visited NIH to report his center's HIV/AIDS research has resumed in full, just months after Haiti's devastating earthquake.

A Haitian physician, Pape graduated from Weill Cornell Medical College in 1975 and returned to Haiti in 1979. His research collaborations with colleagues at Cornell have been ongoing.

Pape has dreams for Haiti's future. "Our new focus is to transform the tent cities into model global health villages," he said, "with an emphasis on health and nutrition, microcredits and job creation, vocational school, maternal and primary school and overall, better habitats for the community."

This event was sponsored by Fogarty, the National Institute of Allergy and Infectious Diseases and the NIH Office of AIDS Research.

To watch the complete lecture, visit http://bit.ly/9DPTVM

Stroke experts make recommendations for future

Advances in stroke research provide guidance not only on what care should be provided but also which practices should be discontinued. That's the consensus of more than 100 international experts who gathered recently to review the last four decades of stroke research and to mark the 40th anniversary of *Stroke*, the journal published by the American Heart Association.

Participants reviewed research findings on stroke to devise and prioritize ways of accelerating progress in reducing the risks, effects and consequences of this preventable cerebrovascular event. The results of their effort were published in a comprehensive, 15-page summary including a wide range of recommendations for future research directions. They concluded that to speed progress "advances can be made not only by doing, but ceasing to do. Significant savings in time, money and effort could result from discontinuing practices driven by unsubstantiated opinion, unproven approaches and financial gain."

No longer a disease of affluence, stroke is on the rise globally. Most developing countries do not have national stroke strategies and people in low- to middle-income countries often can't afford or don't have access to effective drugs. Developing nations could benefit from global collaborations focused on chronic diseases, the researchers suggest. Most stroke research so far has been conducted in North America, western Europe and Japan.

Stroke: Working toward a prioritized world agenda. Hachinski V, Donnan GA, Gorelick PB and others. Stroke: the Journal of the American Heart Association, June 1, 2010; 41(6), 1084-1099.

Fogarty awards $7M

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Fogarty's new Non-communicable Chronic Diseases Research Training Program awards include:

- Aga Khan University in Pakistan will launch a clinical training program focused on stroke research. No such formal training or research programs currently exist in Pakistan, where the projected increase in death and illness from stroke is expected to be high.

- Duke University will establish a stroke prevention and treatment training project in China, where stroke is a major cause of death and adult disability.

- Johns Hopkins University will implement a training program centered on environmental risk factors associated with cardiovascular disease in Mongolia, which is experiencing rapid development of mineral and fossil fuel resources.

- Monash University, based in Melbourne, Australia, will create a regional research training network to address cardiovascular disease and diabetes in India, Sri Lanka and Malaysia.

- The University of Pennsylvania will develop a chronic disease epidemiology training program for clinicians and researchers in Guatemala.

- The University of Iowa award will support the training of Romanian researchers in the prevention and management of obesity, cancer, lung disease and other non-communicable conditions.

- The Wits Health Consortium, part of the University of the Witwatersrand in South Africa, will develop an interdisciplinary educational program with an emphasis on cardiovascular disease, obesity and type 2 diabetes.

NIH funding partners for the awards include the National Institute of Environmental Health Sciences and the National Institute of Neurological Disorders and Stroke.

For more information on Fogarty's Non-communicable Chronic Diseases Research Training Program, please visit: www.fic.nih.gov/programs/training_grants/ncod/index.htm

NIH participates in international diabetes summit

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intimate knowledge of the local context makes them uniquely poised to make advances in this critical research."

In addition, Glass and Rodgers led a panel discussion on harnessing science and using public outreach to combat non-communicable diseases.

Among other key issues discussed during the summit were the need to adjust health systems to address chronic illnesses, the importance of strengthening implementation of the tobacco framework, and the need to bolster surveillance systems to track and monitor chronic diseases.

The summit was hosted by the World Diabetes Foundation, with co-sponsorship by the Pan American Health Organization and the Ministry of Health of Brazil.

Photo courtesy of the World Diabetes Foundation

The science of behavior change is critical to addressing chronic diseases, Dr. Griffin Rogers stressed during his keynote address to a recent gathering of Latin American researchers. Rogers is director of the National Institute of Diabetes and Digestive and Kidney Disorders at the NIH.

Fogarty informatics projects mature, form networks

Several of Fogarty's informatics projects are reaching new levels of maturity, expanding to form regional networks, and leveraging tools and hard-earned lessons to benefit additional developing country researchers. A program in Brazil is sharing its materials with Mozambique, where Portuguese is also the national language. Researchers in Peru are building a Latin American training network and a university in South Africa is forming a consortium to strengthen biomedical informatics throughout Africa.

"These projects are adding depth and sophistication, growing beyond their original purposes and geography," says Fogarty informatics program officer Dr. Flora Katz, who credits the grantees with "educating university and government officials about the power of informatics, showing its value against many competing priorities."

Begun in 1998, Fogarty's Informatics Training for Global Health program is designed to build informatics capacity in developing countries through training that is integrated into ongoing research projects.

Brazil reaches Mozambique with shared language

In Brazil, the Fogarty grant helped develop the country's first doctoral program in bioinformatics. That curriculum is now being offered to researchers in low-resource areas of the country and will soon be made available to scientists in Mozambique.

"Once we had abundant materials in Portuguese, we wanted to share with another Portuguese-speaking country. Mozambique was chosen because it has a medical school with the capacity for rigorous research," says Dr. Lucila Ohno-Machado, principal investigator.

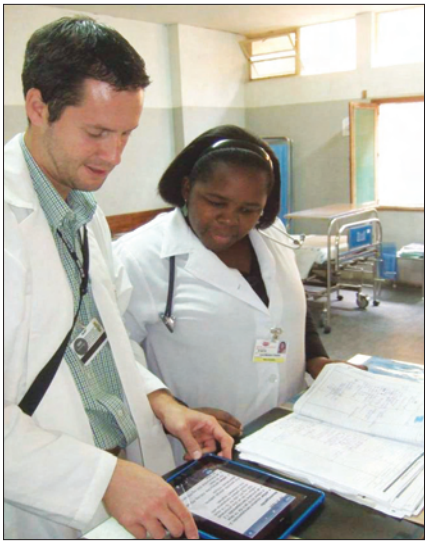
Today, using the iTouch, iPad and 99 cent applications, medical students in Mozambique are diagnosing more patients more accurately than ever before. Previously, it was not uncommon for patients to be treated and released from the hospital without a diagnosis. But the expertise to leverage the data flow is often lacking, something Ohno-Machado is hoping to address.

Peru shares expertise regionally, globally

Having developed a critical mass of researchers with informatics expertise in Peru, the Fogarty project at the University of Peru Cayetano Heredia is creating a hub to share that knowledge across the Andean region, with a focus on Colombia, Ecuador and Peru.

Called QUIPU, for the ancient Incan record keeping system, the collaboration will provide certificate, master's and doctoral level informatics programs. It will also support competitive awards for mentored research, a regional conference and internet-based courses to expand its reach.

Photo courtesy of Dr. Aronoff-Spencer



Several of Fogarty's informatics research training projects are reaching new levels of maturity, expanding to form regional networks, leveraging tools and hard-earned lessons to benefit growing numbers of developing country researchers. Shown left, medical residents at Maputo Central Hospital in Mozambique use an iPad.

"Before 1999, training or research activities involving medical or health informatics were almost non-existent in Peru," says Dr. Patricia Garcia, who helms the effort, which has recently provided informatics training to scientists as far away as Thailand and Africa.

Scaling up through a Pan-African collaboration

Rather than continuing to bring scientists from across Africa to Durban to gain informatics expertise—which is expensive and has the negative effect of removing skilled personnel from their work place—the University of KwaZulu-Natal is using its Fogarty grant to form a Pan-African consortium that will make training available at multiple sites.

Led by Dr. Maurice Mars, this distributed learning partnership will use video conferences and podcasts to share curricula and provide advanced informatics training to about 100 scientists over five years. The need is great, he says. "There are not enough doctors in Africa with strong computer backgrounds."

With scarce human resources, each university cannot offer every course. Instead, they will share core curricula but also develop additional modules tailored to local relevance. Mars says he hopes to convince the continent's health ministers to add informatics expertise to their departments. "My long-term goal is have informatics incorporated into the general education in sub-Saharan Africa."

FOCUS

Building global health leaders

Fogarty Scholars and Fellows can be found in rural villages and urban capitals throughout the developing world, engaged in research to prevent HIV transmission, diagnose and treat heart disease and study the causes of mental illness and other conditions. These motivated individuals are students, health scientists, medical doctors, nurses, dentists and veterinarians.

Since 2004, the Fogarty International Clinical Research Scholars Program has been offering one-year, mentored clinical research training overseas to pre-doctoral U.S. students in the health professions. In 2007, the program was expanded to include Fellows who are post-doctoral scientists already on a global health career path. The Fulbright Program recently added its support to the initiative, joining Fogarty and its 12 NIH funding partners.

The U.S. Scholars are twinned with foreign scientists, native to the site country, who receive a stipend that enables them to take a full year to delve into this clinical research experience.

In all, nearly 500 young scientists have participated at 28 top-ranked research sites in 15 countries, tackling health challenges in both infectious and chronic diseases. To qualify, each location must have a proven track record of clinical research productivity and current funding from NIH and Fogarty.

The Scholars work on clinical research projects already established at the site. There are patient-oriented activities as well as epidemiologic and behavioral studies, operations research and health outcomes evaluations.

Exposure at this point in their careers is critical, says Fogarty director Dr. Roger I. Glass. "When a young person goes overseas to work in a low-resource setting, they get hooked on global health research. Their enthusiasm is contagious and it's exciting to see leaders emerging from this program."

Since the program's inception, participants have published 328 articles in peer-reviewed journals and have presented research findings at numerous scientific meetings.

Another measure of its success is the growing number of alumni whose NIH applications have been funded. But perhaps the most meaningful outcome is the formation of international scientific collaborations that may deepen over time and gain significance as today's Scholars and Fellows become tomorrow's global health leaders.

Raabya Rossenkhan

Fogarty Scholar 2005-2006, Botswana

"My success as a researcher can be directly attributed to my Fogarty experience at the Botswana Harvard AIDS Institute Partnership and my mentors Professor Max Essex and Dr. Vlad Novitsky," says Raabya Rossenkhan, who is in the final year of her Ph.D. work. "I benefited from their support and leadership. I'll admit it's probably a lot more challenging doing research in a developing country but the experience has been immensely rewarding both personally and towards my career goals."

Rossenkhan's Ph.D. project is a sub-study of Dr. Novitsky's acute and early infection research that is generating new information about the early phase of HIV infection as well as possible new insights to vaccine design.

After she earns her doctorate, she plans to apply for grants to conduct independent research in her native Botswana, to contribute to scientific knowledge towards vaccine design. "I would love to be able to influence HIV/AIDS policy in the developing world."

Photo by Belinda O'Donnell

As a Fogarty Scholar, Raabya Rossenkhan studied early phase HIV infection and vaccine design in her native Botswana.

"I'll admit it's probably a lot more challenging doing research in a developing country but the experience has been immensely rewarding both personally and towards my career goals."

Photo courtesy of Dr. Bloomfield

To combat the rising tide of chronic diseases in Kenya, Dr. Gerald Bloomfield focused on training local health care workers in cardiology as part of his Fogarty fellowship.

Dr. Gerald Bloomfield

Fogarty Scholar 2009-2010, Kenya

During his fellowship in Kenya, Dr. Gerald Bloomfield discovered an epidemic of diabetes, heart failure and high blood pressure among the population. Noticing a lack of expertise available to address it, he put together a series of lectures targeting medical students, residents and technicians.

> "The ultimate goal of global health efforts, is to build centers and train people to the point where we do not become independent but inter-dependent on each other."

"Knowing that I would never personally see everyone who needed a cardiologist, I decided to spend time teaching others so as to multiply my effectiveness. It was labor intensive and definitely a labor of love," he says. Care improvements were his reward.

The ultimate goal of global health efforts, says Bloomfield, is to "build centers and train people to the point where we do not become independent but inter-dependent on each other."

While in Kenya, he also made progress on his investigation of the genetic markers of atherosclerosis and the prevalence of hypertension and diabetes in certain populations.

After he completes his cardiology training next year, Bloomfield hopes to join the faculty of an academic institution where he can focus on global health issues.

By demonstrating the true burden of chronic, non-communicable disease—through epidemiology—he hopes to influence policy changes in developing countries to stem the burgeoning tide.

Dr. Manisha Nair

Fogarty Scholar 2009-2010, India

"This experience completely changed the direction of my career," says Dr. Manisha Nair, who was focused on maternal and child health issues in her home country of India, until her Fogarty fellowship provided the opportunity to explore the high rates of coronary artery disease in the population.

The social determinants of non-communicable diseases intrigued her, as did the challenges related to addressing them: policies, promotion and awareness. Trained at Oxford, Nair benefitted from firsthand experience designing research projects during her placement in New Delhi. She was involved in designing protocols, creating questionnaires and training materials and managing the process for bioethics approvals.

"From my mentors, there was no spoon feeding," says Nair. "It was like being thrown into a fire—but with protection so I wouldn't burn myself. Without going through such a learning experience I would not have had the confidence and knowledge in research that I have now, to design any research project or epidemiological study."

Nair aspires to be a policy analyst with a focus on integrating health across all public policy areas, to address the social determinants of non-communicable diseases.

Photo courtesy of Dr. Nair

As a Fogarty Scholar in her native India, Dr. Manisha Nair explored the high rates of coronary artery disease in South Asians.

> "It was like being thrown into a fire—but with protection so I wouldn't burn myself. Without going through such a learning experience I would not have had the confidence and knowledge in research that I have now, to design any research project or epidemiological study."

Improving HIV/AIDS treatment in South Africa

Dr. Kogieleum Naidoo

Fogarty International Clinical Research Scholar

Dr. Kogieleum "Kogie" Naidoo honed her critical thinking skills during her year as a Fogarty International Clinical Research Scholar in her native South Africa. Working with mentor and Fogarty grantee Dr. Salim Abdool Karim, she contributed to a major discovery that improved outcomes for people co-infected with HIV and TB. The research team studied the optimal time to begin antiretroviral drug therapy, finding the drugs are safe and effective when given during TB treatment, contrary to widespread concerns about interactions.

"Dr. Naidoo's research findings led to changes in the WHO and South African government's AIDS treatment guidelines for the initiation of antiretroviral therapy in TB/HIV patients," says Dr. Quarraisha Abdool Karim, director of a Fogarty AIDS International Training and Research Program grant.

According to Naidoo, her engagement with NIH researchers during her Scholars' orientation in Bethesda and the mentorship onsite helped her develop the critical thinking skills that she needed to be able to participate in this level of research. Naidoo was a staff physician at the Center for the AIDS Program of Research in South Africa (CAPRISA) when she applied to the program in 2005.

Since the beginning of her medical career she has practiced in her home town of Durban—a community hit hard by the intertwined epidemics of HIV and TB. "Even as recently as five years ago, we doctors did not know what to do for co-infected people for fear of worsening one condition or the other. There was high mortality and gaps in the guidelines," says Naidoo.

Drawn to public health research, Naidoo applied to the Scholars program to explore the possibility of becoming a researcher. Her fellowship, supported in part by the National Institute of Allergy and Infectious Diseases, did what she hoped it would, filling gaps in her undergraduate studies and deepening her understanding of epidemiology, biostatistics and health economics. There were practical components, too, such as learning how to estimate project costs.

"Working with my mentors, Dr. Salim Abdool Karim and Dr. Quarraisha Abdool Karim, and experiencing firsthand their dedication, visionary thinking, and logical and rational approach to public health research was by far the most important aspect of my experience," says Naidoo.

Photo courtesy of Dr. Naidoo

Dr. Kogieleum Naidoo honed her critical thinking skills during her year as a Fogarty International Clinical Research Scholar in her native South Africa, contributing to a pivotal study that led to more effective treatment of people co-infected with HIV and TB.

One year after her fellowship, Naidoo became director of the Durban and Vulindlela CAPRISA AIDS treatment programs, which are supported by the U.S. President's Emergency Plan for AIDS Relief—known as PEPFAR—and other organizations. She helped establish additional centers, including the only rural source of antiretroviral therapy. She manages a staff of 100 that treats thousands. Under her leadership, nurses, pharmacists' assistants and lay counselors received additional training and responsibility. She says these practical changes were influenced by her Fogarty experience.

Naidoo is the lead scientist on many projects researching treatment for co-infected patients. She also teaches: a course in infectious diseases to undergraduates, TB/HIV management to post-grads and research methods to physicians.

Naidoo says she has always been driven to work toward a solution to the overwhelming burden of AIDS and TB in her country. "In addition to reducing suffering from the disease itself, I wanted to do something to alleviate the helplessness and frustration that pervades medical services in South Africa."

Preventing sexually transmitted diseases in Peru

Dr. Magaly Blas

Fogarty International Clinical Research Scholar and Fellow

"I want my work to change the health of a population, not one individual person after another," says Fogarty Scholar, Fellow and grantee Dr. Magaly Blas, who considers Fogarty a partner in her career.

A native of Peru, she was first a Scholar in the Fogarty International Clinical Research Scholars and Fellows Program in 2004. Then Fogarty funded her advanced studies in epidemiology at the University of Washington, where she received her master's and Ph.D. In 2009, she returned to the clinical research program as a Fellow.

Now, a re-entry grant from Fogarty's Global Research Initiative Program is providing financial support for her work back in Peru. Designed to prevent brain drain, the program provides incentives to ensure that trainees' expertise is put to use in their home country.

As a Scholar, Blas had hands-on experience in diverse research projects and began exploring several areas of interest. As a Fellow, she continued studies to help two vulnerable populations: poor, indigenous women of the Amazon and, in the city, men who have sex with men (MSM).

Her interest in these topics was sparked while working on a vitamin deficiency project in the Amazon during medical school and by participating in a national intervention to decrease sexually transmitted infections early in her career. Her interest in the sexual health of underserved populations was intensified by the inequalities she witnessed within her own country and between Peru and the U.S.

Working in the jungle, Blas deals with tribal issues, the native dialect and women who hold very traditional roles. Talking about sexual matters is uncomfortable for women, even married women, whose husbands often speak for them.

The urban MSM community has a culture of its own, too. "Most of these men do not identify themselves as gay," says Blas, "but heterosexual, which makes it hard to reach them with HIV prevention messages."

Today, Blas is an associate professor and researcher at the Cayetano Heredia University in Lima. In addition to teaching, she is investigating the best ways to use technology to raise awareness of sexually transmitted diseases and promote HIV testing in the MSM population.

In the Amazon she is studying the human papillomavirus and human T-cell lymphotropic virus, both implicated in cancer and other diseases. She's also managing an HPV vaccine trial.

Photo by David Snyder

Peruvian researcher Dr. Magaly Blas—a former Fogarty Scholar and Fellow—is working to reduce sexually transmitted infections among underserved populations in her native country.

Blas credits her growth and enthusiasm as a researcher to quality mentoring: she had the same advisors as both a Scholar and Fellow. In addition to sharing scientific expertise, Peruvians Dr. Cesar Carcamo and Dr. Patricia Garcia, together with American Dr. Joe Zunt, provided useful guidance.

Carcamo helped Blas develop her skills in methodology and data analysis. He also shared his observations about balancing family and work and coping with personal and professional problems. Zunt taught her how to write grants and draft articles that appeal to scientific journals.

"Patricia Garcia taught me how to negotiate the terms of studies with partners from different countries," says Blas. "She also guided my career development, prepping me for interviews and talking to me about establishing a professional network."

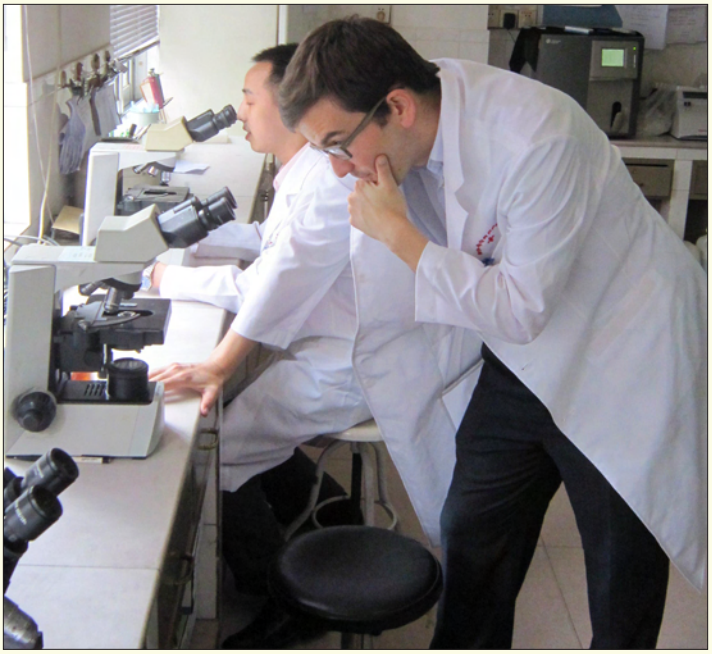
Fogarty isn't the only organization that's impressed with Blas. She's also funded by the National Cancer Institute at NIH and recently received the Global Health Council's new investigator award.

Investigating syphilis in China

Dr. Joe Tucker

Fogarty International Clinical Research Fellow

Photo courtesy of Dr. Tucker



Being granted entrée into the exclusive network of researchers studying infectious diseases in China allowed Fogarty Fellow Dr. Joe Tucker to make quick progress in his syphilis project.

Being granted entree into the small, exclusive network of researchers studying sexually transmitted infections in China was one of the most important benefits of Dr. Joe Tucker's Fogarty Fellowship and allowed him to make quick progress in his syphilis project.

"In China, syphilis research is done by a fairly small group," says Tucker, whose experienced mentors made sure he was included. "It was so rewarding to meet colleagues from around the world," Tucker says. "The 'syphilis in China' international community enriched my experience and my work."

Tucker's American mentor is Dr. Myron Cohen, infectious diseases chief at the University of North Carolina at Chapel Hill and a world-renowned scientist who has worked in China intermittently for more than 30 years. In addition to benefiting from Cohen's connections, Chinese mentor Dr. Xiang-Sheng Chen introduced Tucker to experts from around the world and encouraged him to become involved in syphilis screening policy research.

The goal of Tucker's project, which has also been funded by the NIH Office of AIDS Research and the American Recovery and Reinvestment Act, is to increase syphilis and HIV screening. He evaluates patient and physician determinants of testing as the director of the Plum Blossom Project, so named because "plum blossom" is the English translation of the Mandarin term for syphilis. The program provides free rapid testing for syphilis and HIV in seven clinics in South China. The process is easy, comfortable and inexpensive: no lab equipment is necessary.

"Syphilis was virtually eliminated in China 50 years ago," says Tucker, "Now, it is growing at a rate faster than in any other country since the introduction of penicillin. Today, one baby is born every hour with congenital syphilis, which can cause irreversible birth defects." Having syphilis also increases the risk of acquiring and transmitting HIV.

A mark of Tucker's success is his recent NIH grant, a Fogarty International Research Scientist Development Award that provides three to five years of financial support for intensive, mentored career development in preparation for research independence.

Tucker's lab in Nanjing is a long way from Appalachia where he grew up. His mother taught *tai chi*, Tucker's first exposure to anything Chinese. At Swarthmore College, he signed up for Mandarin and earned a master's in East Asian Studies. Through coursework and international news, Tucker became interested in China's evolution.

"The long-established social structure had become completely unhinged by China's new status as a global economic powerhouse," he says. "One side effect of the changes was a thriving sex industry, born of an imbalance of Chinese businessmen with money and young women without. This led to a rise in sexually transmitted infectious diseases in one population after another."

During his fellowship, Tucker attended many conferences and occasionally presented. "Whenever I speak Mandarin there are surprised faces in the audience. My colleague Dr. Yang Li-Gang pushed me into translating at a national conference. The speaker's slides of stick figures' nitty gritty practices were uncomfortable to describe. I finally stopped and admitted I was having trouble but told the audience I had to get past my uneasiness—just as we all have to when we interview patients, and they have to overcome anxiety to tell us the truth about their sexual health."

Studying malaria and bioethics in Mali

Dr. Jessica Manning

Fogarty International Clinical Research Scholar

Dogo toro! Dogo toro! Pleading chants for a doctor crowd the hallway almost as much as the overheated bodies sprawled on woven mats. Pungent odors of onions and spiced tea fill the dry air as the red Malian sun slowly rises. I am three months into malaria season at a rural 22-bed hospital in the Sahel, an oft-forgotten inhospitable strip of arid land sandwiched between the Sahara and sub-tropical regions to the south. I am exhausted. My white coat hangs heavy with soaking perspiration and pockets full of highly coveted latex gloves. Another child arrives by donkey cart, limp in the arms of a mother who is unresponsive to her wailing.

So began a day in the life of Dr. Jessica Manning, who recorded her experiences as a Fogarty International Clinical Research Scholar in 2008. She arrived in Mali with an interest in malaria vaccine development and left with a better understanding of the realities of global health.

"We are often reminded in medicine that we can only do so much," says Manning, "But shortcomings are what drive our desire to do clinical research—to improve, to advance, to care—so that one day when someone is looking for a miracle, we can deliver."

Previously, Manning spent a summer with the evaluation team of the President's Emergency Plan for AIDS Relief, known as PEPFAR. The experience motivated her to look for ways to speed up the effort and increase its effectiveness.

"My bird's-eye view of the problem provoked a desire to be in Africa carrying out research essential to effective policy," she says. "To achieve that goal, the Fogarty fellowship offered priceless preparation."

Manning's mentor, director of the University of Bamako's Malaria Research and Training Center, quickly helped her acclimatize. Shortly after Manning arrived, Dr. Ogobara Doumbo invited her to a far-flung field site. "Unbeknownst to me," she says, "we embarked on a week-long road trip, visiting friends and families as we made our way north. We had long conversations about the burden of malaria and what science could do to alleviate it." By the trip's end, she had collected abundant information for her research projects and enhanced her cultural awareness.

In addition to conducting malaria vaccine research, Manning also studied local bioethics standards, which at times seemed unrealistic given the context.

Photo courtesy of Dr. Manning

Dr. Jessica Manning conducted malaria vaccine research as a Fogarty International Clinical Research Scholar in Mali.

"In our small rural clinic, for example, children often arrived in critical condition," says Manning. "Our research required that we draw blood before administering medication, creating a time-sensitive situation in which a stressed parent had to understand and then decide whether to consent."

She also learned the value of patience and diplomacy. Americans tend to want to develop a plan and execute it immediately, with maximum efficiency, she notes. But the rest of the world does not necessarily operate that way. "I realized that as the new kid in town, I needed to just be present sometimes and earn trust."

Currently a resident at Brigham and Women's Hospital and a clinical fellow at Harvard Medical School, Manning remains committed to global health. "I am open to wherever research opportunities take me. I hope—like in Mali—to be able to bridge places and cultures, explore the expanse between bench and bedside and always respect the narrow space between illness and health."

GUEST OPINION

Playing on a Global Field

By Catherine Pastorius

"Vale, vale!" my teammate shouts as I dribble past. Another teammate, a cardiology resident I work with at the National Heart Institute in Lima, Peru, tips his invisible hat to me—a universal congratulations for scoring a hat trick in soccer.

The next day, while I am observing an open-heart procedure, the director of surgery tells me he hears I am a very good *futbolista.* If there is one thing that unites people from different cultures, it's soccer. And my year-long NIH Fogarty International Clinical Research Scholars fellowship taught me there's another—medicine.

Photo courtesy of Catherine Pastorius

During her year in Peru as a Fogarty Scholar, Catherine Pastorius discovered research collaborations—like soccer—are a uniting force.

As a Fogarty fellow, I am one of 30 U.S. medical students training in clinical research at sites in the developing world. Besides providing funding and mentoring, the fellowship pairs each student with a young local doctor who is pursuing a career in clinical research. I am matched with Dr. Romina Tejada, a leader in her field who is intelligent, gracious and hard-working.

Peru struggles with malnutrition and infectious diseases such as HIV, Chagas disease and tuberculosis. It is also seeing an increase in cardiovascular disease. Although HIV is the most common field of study, my interest is in cardiovascular disease. On my first day at the National Heart Institute, I heard more murmurs than I will probably hear in my entire career in the U.S.

After a long day observing open-heart surgeries and trying to get a patient with an abdominal aortic aneurism into the only functioning CT scanner in the 1,000-bed hospital, many of us trade scrubs for pinnies. We head to the soccer field. Running around under the lights, we forget our roles in the hospital.

Many mornings, I travel by bus through the heart of Lima to the public hospital. I pass neighborhoods where roads aren't always paved, houses are made of mud bricks, and trash burns in the street. Here I learn the difference between poverty and extreme poverty. To determine household income for surveys, the assets we ask about are animals and appliances. At a local school, a teenager stepped on our bioimpedence machine and produced an "ERROR" reading because he had less than 1 percent body fat. I counseled him about eating more, especially meat. He replied that his family couldn't afford to feed everyone every day.

> "I learned that clinical research is very much a global field requiring the hard work and talent of an international team."
>
> – CATHERINE PASTORIUS, medical student, University of Minnesota

On the last day of my fellowship, there was a soccer tournament. A data-entry worker invited me to play on his team. I quickly changed into shorts and joined the game that had already started. Within five minutes, I scored. A few dozen fans erupted in a roar; it was exhilarating. After the game, we had a feast and I got a lot of congratulatory kisses on the cheek.

After seven months in Peru, my Spanish had improved, I was spending a significant amount of time in the hospital seeing things that I never would see as a fourth-year medical student in the United States, I built relationships and I was playing soccer regularly.

And I learned that clinical research is very much a global field requiring the hard work and talent of an international team.

Catherine Pastorius is a fourth-year medical student at the University of Minnesota who spent much of the past year in Peru as a Fogarty International Clinical Research Scholar.

This article appeared previously in *Minnesota Medicine.*

PEOPLE

Whitescarver receives AIDS award

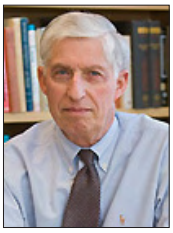
The International AIDS Society has honored Dr. Jack Whitescarver for his outstanding commitment to the global fight against HIV and his pioneering work in the field. As director of the NIH Office of AIDS Research, he has launched domestic and international research and training initiatives to meet the challenges of the epidemic.

Guttmacher appointed new NICHD director

Dr. Alan E. Guttmacher has been chosen to head the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD). As the immediate past acting director, Guttmacher began developing a scientific vision for the institute. Under his leadership, staff will work with external communities that have an interest in the institute's mission, to identify promising research opportunities.

Campbell appointed new FNIH executive director

Dr. Scott Campbell has been appointed new executive director of the Foundation for NIH. He most recently served as vice president of research programs at the American Diabetes Association, where he helped acquire major donations for their research foundation. Prior to that, he spent 16 years in academia where his research interests were hypertension, heart failure and the hormone system that regulates blood pressure and fluid balance.



Zucker honored for alcohol use research

Dr. Robert Zucker, director of the University of Michigan Addiction Research Center, has received the Distinguished Researcher Award from the Research Society on Alcoholism. Zucker started and still directs a Fogarty training program to develop substance abuse research capability in Central and Eastern Europe.

Tanowitz elected to Brazilian Academy of Sciences

Fogarty grantee Dr. Herbert Tanowitz has been elected to the Brazilian Academy of Sciences for his work on Chagas disease, successful collaborations with Brazilian scientists and efforts to bring pre- and post-docs to work with mentors at Albert Einstein College of Medicine, where he is on the faculty and has been named distinguished alumni of the year.

Ochoa receives Gates research grant

Dr. Theresa Ochoa has received $100,000 from the Bill & Melinda Gates Foundation's Grand Challenges Explorations program, created to generate new ways to tackle global health problems. Ochoa, a Fogarty grantee in Peru, is a pediatric infectious diseases specialist testing a daily oral milk protein supplement to protect newborns against sepsis in the critical early days of life.

Global HEALTH Briefs

UN reports global life expectancy up

People are living longer, reports the U.N., due to nutrition and hygiene improvements and advances in vaccines and medical treatments. Global life expectancy increased sharply, from 47 years in the 1950s to 68 years at present, despite the devastation of HIV/AIDS.
Full report: http://bit.ly/9USZ5S

UN announces MDG progress

In its annual assessment of global progress toward the Millenium Development Goals, the U.N. warns that progress is uneven and lists areas where accelerated efforts are needed to meet the final targets in 2015.
Full report: http://bit.ly/dtGX4i

World Bank creating public health labs

The World Bank is committing $63 million to create a regional network of 25 public health labs in East Africa. The goal is improved public health across borders for vulnerable populations of Kenya, Tanzania, Uganda and Rwanda by increasing access to diagnostic services and utilizing the Internet and mobile communications.
Web site: http://bit.ly/b6YpBS

Accordia issues capacity building report

Accordia Global Health Foundation has released a report titled "Return on Investment: the Long-Term Impact of Building Healthcare Capacity in Africa." Fogarty's Dr. Michael Johnson, Dr. Linda Kupfer and Dr. Rachel Sturke authored a chapter about the long-term impact of research capacity building.
Full report: http://bit.ly/apgRZt

MSH reviews capacity building literature

A position paper, "Challenges Encountered in Capacity Building: Review of Literature and Selected Tools," has been released by Management Sciences for Health. It highlights capacity building for HIV/AIDS as responses shift from emergency services to long-term care.
Full report: http://bit.ly/bh1Ueu

New metrics to assess R&D investments

A new multi-agency effort called STAR METRICS will monitor the impact of federal science investments on jobs, knowledge generation and health outcomes. NIH, the National Science Foundation and the White House Office of Science and Technology Policy are leading this initiative.
Full report: http://bit.ly/aZ2RkD

Funding Opportunities

Program	Contact	Receipt Date	Eligibility
Fogarty International Research Collaboration - Basic Biomedical Research Award (FIRCA-BB) (R03) PAR-08-222	Kathleen Michels, Ph.D. FIRCA@nih.gov	Sept. 28, 2010	Scientists with an active NIH-funded research grant and who want to initiate or extend international research collaborations in biomedical research in a low- or middle-income country (as defined by the World Bank) should apply. **NOTE:** Applications for research collaboration with investigators in sub-Saharan African countries are especially encouraged.
Fogarty International Research Collaboration - Behavioral and Social Sciences Research Award (FIRCA-BSS) (R03) PAR-08-223	Xingzhu Liu, M.D., Ph.D. liuxing@mail.nih.gov	Sept. 29, 2010	Scientists with an active NIH funded research grant who want to initiate/extend international research collaborations in behavioral and social seciences research in a low- or middle-income country (as defined by the World Bank) should apply. Former FIRCA LMIC collaborators with grants awarded. **NOTE:** Applications for research collaboration with investigators in sub-Saharan African countries are especially encouraged.
Chronic, Non-Communicable Diseases and Disorders Across the Lifespan: Fogarty International Research Training Award (NCD-LEFESPAN) (D43) PAR-10-257	Kathleen Michels, Ph.D. FIC-NCD-D43@mail.nih.gov	Oct. 2, 2010	U.S. institutions that can demonstrate research collaborations in a low- or middle-income country (as defined by the World Bank) and foreign institutions in LMICs should apply.

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

Global Health Matters

July/August 2010

Volume 9, No. 4 ISSN: 1938-5935

Fogarty International Center
National Institutes of Health
Department of Health Human Services
Publication No. 07-5369

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Retired Fogarty deputy director dies

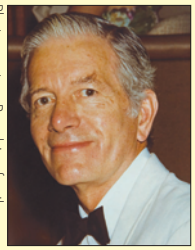

Photo courtesy Beaubien family

Dr. Mark Beaubien, 88, former deputy director of Fogarty, died recently at a Silver Spring retirement community. Beaubien joined the NIH when Fogarty was in its infancy and was instrumental in laying the groundwork for its extramural research programs. He also helped establish the Fogarty Scholars in Residence initiative, which attracted luminaries such as anthropologist Margaret Mead and Albert Sabin, developer of the polio vaccine.

"We are grateful for the incredible vision and foresight he provided and the solid foundation he helped to build in the early years of our center's development," said Fogarty director Dr. Roger I. Glass. "Fogarty has now trained more than 5,000 scientists around the globe and supports more than 400 research and training projects in 100 countries." Beaubien also served as acting director of Fogarty from July 1982 until January 1984 and soon after retired from the NIH.

Earlier in his career, he was staff physician in Asia for the Peace Corps, worked for USAID in Vietnam and directed malaria eradication efforts in Thailand. In the 1960s, he led medical operations in Indonesia and Vietnam for Project Hope, a humanitarian organization. Born in Chicago, he received both his undergraduate and medical degrees from the University of Chicago.

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