

# GLOBAL HEALTH MATTERS

FOGARTY INTERNATIONAL CENTER

NATIONAL INSTITUTES OF HEALTH

DEPARTMENT OF HEALTH AND HUMAN SERVICES

## Fogarty releases new strategic plan

The Fogarty International Center’s new strategic plan intensifies focus on chronic non-communicable diseases while continuing to address the unfinished infectious diseases agenda.

The plan, which will direct the Center’s activities until 2012, also encourages implementation science to address the “know-do” gap and would expand research training opportunities for U.S. and foreign scientists, foster a sustainable research environment in low- and middle-income countries and build strategic partnerships to further global health.

“Fogarty’s new strategic plan provides the pathway toward developing sustainable global health research and training programs where they are needed most,” according to Center Director **Dr. Roger I. Glass**.

“It is vital that we create in-country research capacity in the  
*(continued on p. 2)*



Photo: Curt Carnemarke/World Bank

*High blood pressure is one of many chronic conditions that has become more prevalent around the world and is a focus of the new strategic plan.*

## Chronic diseases research training program launched

Chronic non-communicable diseases may kill as many as 388 million people over the next decade, the majority occurring in the developing world. To address this emerging epidemic, Fogarty is launching a program to fund domestic and overseas training of researchers to fight chronic diseases in resource-poor nations.

The \$1.5 million-a-year grant program is designed to build research

capacity in areas such as stroke, lung disease, cancer, environmental factors, obesity, lifestyle and genetics.

Under the Millennium Promise Awards: Non-communicable Chronic Diseases Research Training Program, Fogarty plans to issue about seven full awards and two planning grants annually. Full awards would receive funding of up to \$220,000 a year for up to five years, with planning grants being allocated up to \$27,000 a year for up to two years.

Letters of intent are due Aug. 31 and full applications must be submitted by Sept. 29. Projects may begin July 9, 2009.

The initiative is a key part of Fogarty’s new strategic plan, which calls for more emphasis on chronic diseases in low- and middle-income countries (LMICs) and a commitment to promote implementation science—how to best deliver the fruits of research to those in need as quickly as possible.

“Since the origin of and solutions to most chronic diseases are complex,

we are encouraging projects that will develop and provide training across disciplines, bridging gaps among the biological, social and behavioral sciences,” says Fogarty Director **Dr. Roger I. Glass**.

The program is seeking proposals  
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### Fogarty fellows aid in China earthquake recovery

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Photo: Ma Hong

# Strategic plan would reduce ‘know-do gap’

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developing world so that decisions regarding research and policy rest in local hands. We have valuable assistance to offer but, ultimately, countries must be able to solve their own health problems.”

Fogarty developed its strategic plan with significant input from stakeholders around the world, provided in person during meetings held in Maryland and Cairo, and via e-mail through the Center’s Web site.



Throughout the process, Glass also consulted with the other NIH Institute and Center directors, leaders of non-governmental organizations, and others prominent in global health research. A final draft of the plan was circulated and posted on the Web for comments, which were considered before the plan was published.

To execute the new agenda, Fogarty staff have formed working groups to address each of the goals and to develop action plans for achieving them. In addition, the Center’s senior leadership has recently held meetings to consult with private and public global health leaders on next steps.

“These five goals give Fogarty renewed momentum in our mission to support global health research, build partnerships between U.S. and foreign research institutions and train the next generation of scientists to address the world’s compelling research needs,” said Glass. “We are energized and have already begun to make strides toward achieving these goals with the hope of reducing disease, improving health and extending the lives of all people, regardless of where they live.”

## Address the growing epidemic of chronic non-communicable diseases

The plan’s first goal is to mobilize the scientific community to address the growing epidemic of chronic non-communicable diseases related to increased longevity and changing lifestyles in the developing world.

To accomplish this, Fogarty plans to expand investment in this area, while continuing to address the critical infectious diseases agenda. The Center recently announced a new \$1.5 million a year program to support non-communicable diseases research training, with seven awards expected annually. (Related story on p. 1.)

In addition, the Center is working with other NIH components and private partners to develop further chronic disease initiatives. Glass and **Dr. Betsy Nabel**, director of National Heart Lung and Blood Institute, both joined the

Grand Challenges Global Partnership, an international effort to curb deaths from chronic non-communicable diseases organized by the Oxford Health Alliance and supported by a number of global research funding organizations.

## Bridge the implementation research training gap

Secondly, Fogarty plans to foster implementation research training in order to help reduce the “know-do” gap, which prevents discoveries from being put into practice, particularly in resource-poor countries. The Center plans to expand its International Clinical, Operational and Health Services Research Training Award program for AIDS and TB and has reinforced the initiative’s support for implementation research.

Fogarty will encourage implementation science be applied to recommendations from the Disease Control Priorities Project, which proposed cost-effective interventions to significantly reduce the burden of disease in developing countries. DCP2 is a joint effort of Fogarty, W.H.O., World Bank, Population Reference Bureau, National Library of Medicine and the Bill & Melinda Gates Foundation. (More information at [www.dcp2.org](http://www.dcp2.org))

*The strategic plan calls for expanding the training program for AIDS as part of a new effort to reduce the “know-do” gap that might help this Honduran man living with AIDS and others like him.*



Photo: World Bank

## Develop human capital in developing world

Because Fogarty’s impact has historically been most significant in developing the pipeline of U.S. and foreign research talent, its third goal reinforces that ongoing need.

The Center intends to expand the number of overseas research experiences available for young U.S. scientists in order to encourage them to adopt careers in global health.

Fogarty also will continue its research training partnerships between U.S. and foreign institutions and strive to enhance research opportunities for foreign scientists when they return home. (continued on p. 3)

# Alliances and funding partnerships envisioned

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## Foster a sustainable research environment in low- and middle-income countries

The plan's fourth goal stresses the need to continue to build and sustain the local research enterprise in low- and middle-income countries so that scientists will have the support necessary to conduct their research. Key strategic priorities include establishing linkages or hubs for sharing resources and knowledge across sites and encouraging the adoption of information technology to advance research progress. Fogarty is holding a series of consultations with IT experts to guide these efforts.

## Build strategic alliances and funding partnerships

Under the final goal, the Center seeks to capitalize on the rising tide of private and public funding devoted to global health by building new strategic alliances and partnerships. Fogarty will work to maintain and strengthen existing partnerships with other NIH components, U.S. government agencies and private collaborators while forging ties with the many new private sector organizations in the global health arena.

The full strategic plan is available at:

[http://www.fic.nih.gov/about/plan/strategicplan\\_08-12.htm](http://www.fic.nih.gov/about/plan/strategicplan_08-12.htm)



Photo: Curt Camemark/World Bank

*Air pollution is just one of the environmental components of global chronic illness.*

# New program to address chronic disease factors

(continued from p. 1)

from those who have a broad understanding or experience in working across disciplines, such as nutrition, business, behavioral health, health law, economics, environmental health and urban planning.

Specifically, objectives of the research training program are to:

- Train a cadre of experts who can assess the magnitude of diseases such as cancer, cerebrovascular disease including stroke; lung disease including chronic obstructive pulmonary disease; and obesity, as well as genetics; environmental factors, including indoor air pollution, and lifestyle factors related to the onset of chronic conditions in LMICs.
- Support training-related research projects (degree-related or mentored research) that address issues of importance to chronic disease directly relevant to the needs of the people in the foreign country and that are culturally sensitive.
- Strengthen the research training capacity and institutional infrastructure required for success by building on existing research programs on chronic diseases at the foreign sites.

- Develop methods to monitor and understand the etiology of chronic non-communicable disease.
- Train researchers who perform research in chronic non-communicable diseases across a broad range of research areas from genetics to epidemiology to clinical research to implementation science.
- Train researchers who can identify economic factors that influence chronic disease risks and who can develop evidence regarding the impact of chronic non-communicable diseases on families and communities.
- Train individuals who can translate research into public health policy and into programs of care.

Other NIH components supporting the initiative include: the Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Cancer Institute, National Institute of Nursing Research, National Institute of Neurological Disorders and Stroke, National Institute of Environmental Health Sciences and the Office of Dietary Supplements.

More information is available at [www.fic.nih.gov](http://www.fic.nih.gov).





HHS Secretary **Mike Leavitt**, right, signs a memorandum of understanding with Chinese Vice Minister of Health Wang Guoqiang. The agreement is another step toward both countries exchanging expertise on Western medicine practices and Traditional Chinese Medicine.

## U.S., China agree to collaborate

Fogarty, along with the National Cancer Institute and the National Center for Complementary and Alternative Medicine, facilitated a two-day roundtable on Traditional Chinese Medicine (TCM) marked by the signing of a memorandum of understanding with China to foster collaboration between Eastern and Western scientists.

The document was endorsed by **HHS Secretary Mike Leavitt** and Chinese Vice Minister of Health Wang Guoqiang.

“Many Americans incorporate alternative medical practices into their personal health care and are interested in the potential of a variety of traditional Chinese medicine approaches,” Leavitt said. “This project will advance our understanding of when and how to appropriately integrate traditional Chinese medicine with Western medical approaches to improve the health of the American and Chinese people.”

## ADHD lowers global productivity

Attention Deficit Hyperactivity Disorder lowers productivity globally and, because of its cost to business, is a good candidate for workplace screening and treatment, according to a recent study supported in part by Fogarty.

The article in the journal *Occupation and Environmental Medicine*, which got a lot of attention from the world’s news media, found that, on average, 3.5 percent of workers interviewed reported having ADHD, which can translate into lost days of work and productivity, says co-author and grantee **Dr. Ron Kessler** of Harvard University Medical School.

The study found that ADHD is more common among men, less common among professionals and that on average those with the disorder miss nine more days of work a year than those who do not have it. Even while on the job, inattention was estimated to equal 22 days worth of work not done each year.

A Fogarty International Research and Collaboration Award supported the training of **Elie G. Karam**, a Lebanese national, in statistical analysis of the data culled from the W.H.O World Mental Health Survey.

Previously, ADHD had been studied mostly as a childhood condition, with adult prevalence extrapolated from the childhood figures. This study looked at adults in the workplace and found it more prevalent among those who had jobs than those who did not.

The U.S. prevalence was estimated at 4.5 percent among those who had a job. The highest rate was for France, at 6.3 percent and the lowest was Lebanon at 0.9 percent.

*The prevalence and effects of Adult Attention-Deficit/hyperactivity Disorder (ADHD) on the performance of workers: Results from the W.H.O. World Mental Health Survey Initiative.* Ron de Graaf, Ronald C Kessler, John Fayyad, Margaret ten Have, Jordi Alonso, Matthias Angermeyer, Guilherme Borges, Koen Demuyttenaere, Isabelle Gasquet, Giovanni de Girolamo, Josep Maria Haro, Robert Jin, Elie G Karam, Johan Ormel, and Jose Posada-Villa. *Occup. Environ. Med.*, May 2008; doi:10.1136/oem.2007.038448 <http://oem.bmj.com/cgi/rapidpdf/oem.2007.038448v1?>



Photo: Eddy Ball, NIEHS

**Fogarty Director Dr. Roger I. Glass** explains to NIEHS employees that chronic diseases in developing countries present “a completely different pattern of disease in the 21st century than we had before.” Glass was invited to the institute, where he began his career, to take part in the “Frontiers of Environmental Sciences Seminar” series.

# Climate change and global health go hand in hand

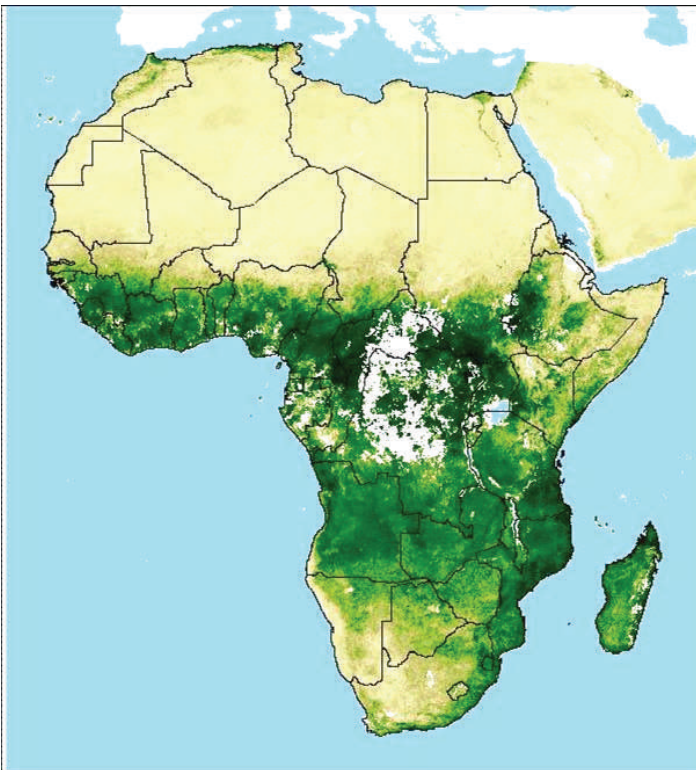
Marriage between climatology and biology has the potential to improve global health by predicting disease outbreaks and lessening the effects of pollution-driven chronic illness, say researchers advocating a systems approach to global warming preparedness.

Characterizing the model for collaboration as a microscope linked to a satellite, National Oceanic and Atmospheric Administrator Conrad C. Lautenbacher said, "Everything is connected in our earth system ... It's science without borders" and requires integration of data from basic researchers, health providers, weather forecasters and environmentalists looking at the very long term effects of human-caused climate change.

"The health community — NIH and CDC — already are engaged in a substantial amount of research and training that aids preparedness for climate change," **Dr. Joshua Rosenthal**, deputy director of Fogarty's international training and research division and director of its environment programs, told the forum on "Changing Climate: Changing Health Patterns."

"The overarching goal is to think about strengthening basic health research, surveillance and reporting, with an eye on the most vulnerable populations," Rosenthal said.

That eye is often a space satellite measuring ocean temperature, vegetation and weather patterns like El Niño/La



NOAA

Satellite images show where vegetation density and the risk of malaria may be higher. Brown areas indicate a lower risk.

Niña—collecting data that in the hands of public health experts could be tailored to preventing disease, or at least treating it

Lautenbacher said, for example, when satellites measure the temperature of water in the Bay of Bengal, the data track with later outbreaks of cholera in the region.

Predicting the arrival of flooding should be more than just protecting property, Rosenthal said. It should also warn people in developing nations about the potential spread of diseases such as schistosomiasis (snail fever) and other hazards such as toxic pollutants.

One example of a current Fogarty-sponsored study is how parasitic diseases in Kenya change during during the transition from drought conditions to flooding.

Another area of analysis for the NIH, he said, is natural disaster and the community reaction to it, such as studying post-traumatic stress syndrome and drug abuse in survivors of Hurricane Katrina or the ability to contain the spread and health effects of a major fire.

When there is a natural disaster or outbreak of disease, "What we do know is it's probably going to hit the most vulnerable populations the hardest: the poor, children, the elderly, those in low-and-middle-income countries with weak infrastructure, degraded ecological environments, poor health-delivery systems," he said.

"Sound science needs to drive sound policy," Lautenbacher said, calling for the study of climate change "in a more rational and less emotional fashion for decision makers and for the people."

The forum was sponsored by the World Federation of Public Health Associations, the American Public Health Association and the U.S. Group on Earth Observations and held at the National Press Club in Washington. The Associated Press carried an account of the forum quoting Rosenthal extensively:

[http://ap.google.com/article/ALeqM5h8n95TQYU\\_xUAOr7FRkNz1zdkL9wD91CNQK80](http://ap.google.com/article/ALeqM5h8n95TQYU_xUAOr7FRkNz1zdkL9wD91CNQK80)



Fogarty's Joshua Rosenthal explains the link between climate change and public health at a National Press Club forum.



## Visiting world health leader promotes broad agenda for poor

Bangladesh, once emblematic of poverty and pity, has made great strides in public health due to international collaboration on disease-prevention, family planning and child nutrition, says **Dr. Alejandro Cravioto**, the new executive director of the world-famous International Centre for Diarrheal Disease Research (ICDDR, B) in Dhaka.

Due to early assistance from NIH researchers, continuing today with collaboration with Fogarty, the Centre pioneered development of oral rehydration treatment to combat the deadly effects of diarrhea in infants and young children.

Although digestive and other infectious diseases remain prevalent, Cravioto said in a Fogarty-sponsored lecture that new and important goals for improving health in countries like Bangladesh include population control education, providing zinc supplements to young children and working on new vaccines.

Fogarty Director **Dr. Roger I. Glass**, a longtime colleague of Cravioto and himself an expert in the rotavirus that causes diarrhea, noted that NIH infectious disease experts were among the first scientists to work at the Centre after its creation in 1960 to combat endemic cholera. Today, Fogarty supports more than two dozen collaborative efforts with the ICDDR, B.



*Dr. Alejandro Cravioto has been head of the International Centre for Diarrheal Disease Research (ICDDR, B) in Dhaka since last year.*



*Photo: ICDDR,B*

*Oral rehydration therapy, makes it possible for mothers to administer a simple sugar and salt solution, as shown here in Bangladesh in 2006.*

The country that went through political upheaval, violence and floods has a population of 150 million in about the size of Iowa. The number of people is about the 30 million fewer than might have been were it not for ICDDR, B population control efforts, said Cravioto, who was trained in his native Mexico.

Cravioto said the Centre has moved beyond treating infectious diseases to conduct research on public health, maternal and child health, domestic violence and empowerment of women, adolescent health, problems of the poor and, now, chronic diseases.

One puzzle, he said, is the unusual level of heart disease in men under 50 in Bangladesh, even though they have a "lean" phenotype and eat a diet of rice, lentils, fish and vegetables. He said the broadened reach and success of ICDDR, B was due to reliance on multiple donors instead of one single large benefactor, collaboration among scientists from many countries and its independence from government control.

Currently, 40 percent of its funding comes from international development agencies, with the rest coming from competitive service grants, Cravioto said.



*CIA*

# AIDS expert challenges Western apathy

Stephen Lewis, a former diplomat and co-founder of AIDS-Free World, delivered a passionate lecture on global efforts to end the pandemic at the NIH recently as part of Fogarty International Center's 40th anniversary celebration.

Lewis described the plight of sub-Saharan countries struggling for survival, mired in a cycle of disease and despair both caused by and resulting from AIDS.

He cited violence against women, educational discrimination against girls, Western apathy, political barriers to the delivery of existing AIDS services along with limited and, in some instances, ideological rather than accurate prevention information as contributing to the death of 2.1 million Africans and the infection of 2.5 million in 2007 alone.

The result is millions of orphans being raised by grandmothers or no one at all. "I don't have the words sufficient to convey the sense of carnage and the toll that has been taken in sub-Saharan Africa," he told the audience of several hundred, including NIH Director **Dr. Elias A. Zerhouni**, Deputy Director **Dr. Raynard S. Kington** and Fogarty Director **Dr. Roger I. Glass**.

"It is beyond the capacity of the mind to absorb ... It's a panorama of such heartbreaking and vexing inexplicability that the world stood by and watched the extraordinary deterioration of a continent, with millions of people dying unnecessarily," said Lewis, who has been Canadian ambassador to the United Nations, deputy executive director of UNICEF and the U.N. secretary-general's special envoy for HIV/AIDS in Africa.

Despite the gloom, Lewis said, "The beauty ... of speaking here at NIH and under the auspices of Fogarty is that, necessarily, it's the research ... which underpins the legitimacy of the advocacy." He suggested, for example, that learning how to communicate effectively about sexually transmitted diseases to young Africans is a "subject worthy of exploration."

The U.S. contribution to the AIDS emergency in Africa, through the President's Emergency Plan for AIDS Relief

*"Why is the life of an African child worth so much less than the life of a Western child?"*

— Stephen Lewis, on the African AIDS epidemic.

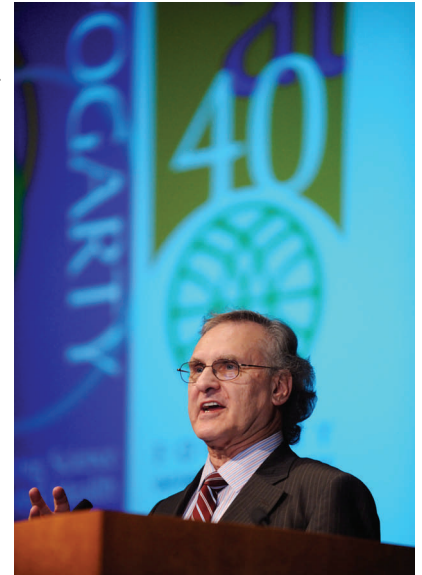
(PEPFAR), which includes the U.S. contribution to the Global Fund Against AIDS, Tuberculosis and Malaria, is expected to increase to \$50 billion over five years and is the largest amount from any single country.

Yet Lewis said that the world's wealthiest country still isn't carrying its fair share, and in a just world, American governmental funding would be even higher.

Lewis warned that AIDS, beyond threatening the survival of sub-Saharan countries, could undermine the health and social fabric of other nations as well, unless industrialized nations provide more assistance.

Uganda, the touchstone of progress when AIDS prevalence fell from 20 percent to five percent, is seeing the rate inching up again, he said. Fifty percent of African children born with HIV die before age 2, and 80 percent by age 5, he said.

In the United States and other rich countries, access to drugs that can be administered during childbirth have all but eliminated transmission of the virus to newborns.



*"It's the research ... which underpins the legitimacy of the advocacy," says AIDS activist Stephen Lewis.*

Not one to mince words, Lewis said that preventing mother-to-child transmission, which should be 99-percent-effective, is not happening on a large scale, which he says raises the question, "Why is the life of an African child worth so much less than the life of a Western child?"

"I am an apologist for the United Nations but I'm also deeply, deeply disappointed in the inability of the international community to come to grips with what has happened," he said.

Lewis concluded on a positive note: "Those of you who care about these issues, particularly in an environment like NIH, with research scientists, with people who understand and bring voices to it ... can make a tremendous difference."

A recent report by the W.H.O., UNAIDS and UNICEF said that in the past four years, the number of people in low- and middle-income countries receiving antiretroviral treatment has increased more than seven-fold.

Since leaving the world of diplomacy, Lewis helped establish AIDS-Free World, a new international advocacy organization. He also is a professor in global health at McMaster University and a senior advisor to the Columbia University Mailman School of Public Health.

For more information, visit [www.aids-free-world.org](http://www.aids-free-world.org).



# When disaster strikes

Even in stable conditions, research, training and health care delivery are difficult in some of the remote places Fogarty-sponsored scientists work. But what happens to their ability to conduct research and improve the health of some of the world's most vulnerable people when either natural or political earthquakes topple cities and threaten individual or public health?

The question has taken on grim meaning in recent years with the Asian tsunami of 2004, strife in Zimbabwe and South Asia and, most particularly, in the aftermath of the 7.9 magnitude earthquake beneath Sichuan Province in China May 12 that killed at least 70,000 people. Here and on page 10, personal accounts are reported that may help future researchers in times of crisis.

As many as 19 current and former Fogarty trainees were in the field or positions of leadership in the Ministry of Health when the disaster mobilization began. They operated under three programs with Fogarty partners — Harvard University, the University of Rochester and UCLA.

“The earthquake response demonstrates that the value Fogarty has added to global health in our 40 years is not just in aiding victims of a catastrophe or preventing the outbreak of disease, but also in building the capacity of other countries — big or small — to tackle public health crises on their own,” says Fogarty Director **Dr. Roger I. Glass**.

The Chinese mental health team that responded to the disaster was led by **Dr. Yu Xin**, director of the Beijing Institute for Mental Health and co-director of the Fogarty program with Harvard Medical School; **Dr. Ma Hong**, the chief of mental health for China's Center for Disease Control; and **Dr. Liu Jin**, who will be a fellow at Harvard next year.



Photo: Ma Hong

The earthquake in the Sichuan Province of China killed almost 70,000 people and injured about 375,000. This is the scene viewed from a car on the way to Leigu.



Photo: Ma Hong

A flag is all that remains of this building in the Chinese city of Leigu after the 7.9 magnitude earthquake beneath the mountains in the background.

You organized experts from both psychiatry and psychology to draft guidelines for post-disaster mental health services, targeting the injured, the children, the first-aid teams and the displaced.

He and **Dr. Wu Zunyou**, a former Fogarty trainee and now head of the Chinese Center for Disease Control's AIDS and STD control, reported the monumental efforts of young doctors who had been trained under Fogarty programs.

**Prof. Byron Good**, the principal investigator from Harvard University Medical School's Training Program in International Mental Health, says, “With Fogarty's support we are developing a network of new leaders of China's mental health system, and they have all stepped up on this occasion.”

Perhaps the key figure in the field was Ma, who had just returned from two months of advanced training at Harvard.

As team leader of the Ministry of Health psychosocial intervention first-aid team, Ma organized two groups of 13 psychiatrists to provide first-aid in Chengdu, the province's capital, and Mianyang, its largest city.

Immediately, she went to Mianyang with four of them and, working with UNICEF, set up first-aid centers for the psychologically traumatized. She also trained local psychiatrists, advised local government and used the mass media to disseminate mental health information and ask for more help.



# . . . researchers react

She set up a program called Hope China, organizing more than 200 volunteers to provide mental health first-aid and established aid stations in three refugee camps still housing up to 20,000 earthquake victims.

Fogarty grantee **Dr. Eric Caine** of the University of Rochester suicide-prevention program reported that trainee **Qui Peiyuan** had been doing a dissertation on the mental health of migrant workers in the earthquake region only to find that her cohort had disappeared — because either the subjects returned to their homes or they found no work. In addition, a cousin of her husband had been killed in the earthquake.

**Dr. Xiao Zeping**, another Fogarty collaborator, played a key role as director of the Shanghai Mental Health Center, working with former Fogarty fellows **Dr. Qiu Jianyin**, **Dr. Xie Bin** and **Dr. Cheng Wenhong**.

Although no one's academic work was lost and none of the fellows was injured, their routine was "vigorously impacted" by the earthquake, said Yu, "either because the fellows went to the earthquake sites or they switched to disaster-related work."

Dispatched to Sichuan from Beijing and Shanghai, they wrote a manual on crisis intervention for use by local public health authorities, translated a first-aid guide for on-site responders, prepared a handbook answering 100 questions for survivors and provided child and adult psychiatric services.

There were several important lessons learned, Yu said.

"First, fellows perceived their work as not limited to medical services and took into account the psychological needs of the earthquake victims from the particular geographic, cultural and social context."

Second, while realizing the necessity of multidisciplinary teams, careful management is needed of teams consisting of both psychologists and psychiatrists, he says.



Photo: Ma Hong

**Cheng Wenhong**, right, one of the few child psychiatrists in China trained in post-disaster intervention, was a fellow at Harvard three years ago. Fogarty fellows were careful not to collect data in a way that caused survivors a "second trauma."



Photo: Li Weihui

**Dr. Ma Hong**, a former Fogarty fellow, (right), attends to a girl whose sister was lost in the earthquake. Ma, who had just returned from two months of intensive training, at Harvard, was a key figure in the mental health response.

Third, says Yu, "We were aware of the importance of the scientific evidence. After the earthquake, hundreds of articles, booklets, manuals, journals, books and e-mails were received with information covering all previous disaster interventions, all with different approaches. The classification, analysis and judgment of those incoming materials are essential to provide scientifically sound information."

Finally, he says, the Fogarty fellows, unlike some of the first responders, knew not to collect so much data that the survivors suffered a "second trauma." According to Yu, "The fellows are always putting the benefits and interests of the earthquake victims first, and all data collection was based on the informed consent and well-established relationship."

The earthquake response demonstrates the value of investing in local research capacity, says Fogarty Director of International Training and Research **Dr. Ken Bridbord**. "It's a network of people who support one another in a variety of ways. As in the rest of the scientific enterprise, emergencies are about people — not dollars."

## “It was an airport that wasn’t bustling!”

Although Indiana Jones is one of a kind, globe-trotting science carries some risk for the non-archaeologist as well.

**Dr. Jim Herrington**, Fogarty’s director of international relations, was a CDC envoy to the Ivory Coast in 1990 when he drove to the airport to pick up a colleague and noted “an airport that wasn’t bustling!” The sudden appearance of camouflaged soldiers jumping from behind bushes and firing machine guns into the air signified he would not be picking up his friend; the airport had been closed by the army’s foot soldiers demanding better living conditions from the government.

The ensuing turmoil and natural death of President Houphouët-Boigny led to economic collapse — and the end of the most successful immunization campaign in sub-Saharan Africa, with a vaccination rate that fell precipitously shortly thereafter due to civil war.

**Dr. Joconiah Chirenda**, a Fogarty Frameworks grantee at the University of Zimbabwe, says the worst part of the continuing political strife in his country has not been physical danger but inadequate resources that result in high faculty-student ratios.

**Dr. Nalini Sathiakumar**, a pediatric epidemiologist at the University of Alabama who is a Fogarty grantee doing work in South Asia, says, “I have certainly had a sense of fear” in her research travels.

“Like many parts of the developing world, South Asia’s political climate seems to be in constant motion, and the situation can change from tranquil to precarious without much notice,” she says.

### TIPS FOR TRAVELERS

*Dr. Nalini Sathiakumar, a Fogarty grantee from the University of Alabama, Birmingham, offers these tips for traveling to international hotspots:*

- *Base decisions to travel on the current events in each area, relying heavily on feedback from our in-country collaborators.*
- *Monitor State Department advisory warnings prior to travel.*
- *Seek local advice on safe areas.*
- *Travel in groups and with locals.*
- *Monitor local press for impending strikes, demonstrations and curfews. Obey curfews on travel during strikes or road blockades. “We have found (our) university administration to be very helpful prior to travel, and the US embassies to be extremely accessible and pro-active.”*

A U.S. citizen, Dr. Sathiakumar is a native of India who was working in Pakistan when the USS Cole was bombed, and “the atmosphere was very apprehensive in Karachi.”

A year later, she was scheduled to be in Pakistan to run a training program, but the events of Sept. 11 made it necessary to move the program to Nepal, Sri Lanka and India.

While conducting a workshop in Pokhara, Nepal, fighting broke out between Maoists rebels and government forces within a five-mile radius of her team’s hotel and training site. Curfews and roadblocks were instituted and the airport was closed, but by the time the workshop ended, so did the unrest.

In Sri Lanka, says Sathiakumar, most of the violence is aimed at civilians in public places. “However, our Sri Lankan partners have been extremely cautious by arranging private transport for trainers and workshop participants, choosing hotels and restaurants based on the current political situation,” she says.



*A makeshift roadblock in Pokhara, Nepal, site of Maoist rebel activity in 2004, is one example of non-scientific barriers facing international researchers.*



# Fogarty fellows in the field

It isn't often that research faculty, visiting fellows or trainees are called upon to use their knowledge and get their hands dirty in immediate life-or-death medical services.

Before the May 12 earthquake in Sichuan Province, all but one of the Harvard-affiliated, Fogarty-sponsored fellows in China "were focused on their own projects, which had nothing to do with disasters," says **Dr. Yu Xin**, Fogarty's primary foreign collaborator and director of the Beijing Institute for Mental Health.



A "working stand" offering mental health services at one of several refugee camps Fogarty fellows helped establish.

Only **Dr. Ma Hong**, who was part of the Harvard program and is chief of mental health for China's Center for Disease Control, was an expert in training child psychiatrists to deal with young disaster victims.

Other current and former fellows in mental health at the Harvard Department of Social Medicine, a Fogarty partner, were mobilized in Shanghai and Beijing.

Ma, along with **Drs. Bin Xie, Liu Jin, Ming Li, He Yangling** and **Cheng Wenhong** participated in writing "The Training Book for Post-disaster Crisis Intervention," sent to local public health authorities of every province and to mental health institutions.

**Qui Jianying** helped translate a psychological first aid field manual into Chinese to help on-site experts and volunteers. Xie, Qiu and **Chen Jue** collaborated with the Shanghai Institute of Health Promotion to produce a handbook, "100 Frequently Asked Questions after an Earthquake Disaster" for use in Sichuan.

In a country with a desperate shortage of child psychiatrists, Cheng went immediately from Shanghai to Sichuan and began working with children, as did Fogarty fellows **Xue Haibo** and **Xu Yong**.



Whether "rabbit ears" or "victory," these local volunteers working under Fogarty fellows give a child a smile.



Photos: Ma Hong

Accommodations were spare. Dr. Ma Hong slept in a tent and Dr. Cheng Wenhong stayed in a shed.



patients transferred from Sichuan to Beijing.

As head of the Ministry of Health's psychosocial intervention first-aid team, Ma, who had just returned from two months of advanced training at Harvard, designed and organized an urgent educational program in the neighboring province of Wuhan.

**He Yangling** and **Xu Yifeng** were among the trainers. **Dr. Yuan Yanbo**, a former Fogarty fellow, went to Chengdu with 40 psychiatrists and nurses from Beijing to work with hospitalized patients.

**Dr. Jiang Ronghuan**, who was just back from Harvard this year, helped translate papers and consulted with children from Sichuan who were brought to Beijing. She also was involved in the treatment of 91 injured

**Dr. Li Jin**, who studied in the United States last year under the Rochester program, was in Chengdu and already involved in recruiting those at risk of suicide. Now she hopes to research the relationship between suicidal behavior and post-traumatic stress syndrome.

## Difference in parasite genes key to chloroquine resistance

A study led by a Fogarty grantee provides new insights into the evolutionary dynamics of malaria parasite genes, findings that could lead to more effective treatment.

Chloroquine (CQ) is still the main drug used in malaria hotbeds of Asia and South America, even where the disease-carrying parasite *Plasmodium falciparum* has developed resistance. Because of resistance and the wide prevalence of malaria, CQ is being replaced in Africa by artemisinin.

The discovery, published in the June issue of *Antimicrobial Agents and Chemotherapy*, reports the genetic diversity patterns of two genes of *P. falciparum* (known as *Pfcr1* and *Pfmdr1*), which are thought to be susceptible to the drug.


“The main implication is: because chloroquine has been discontinued in Africa and replaced by other drugs, how is *Pfmdr1* going to behave now at the genetic level?” said lead author **Dr. Rajeev K. Mehlotra** of the Center for Global Health and Diseases at the Case Western Reserve University School of Medicine.

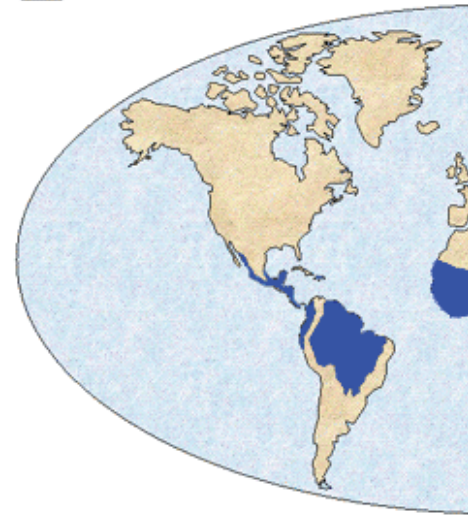
“These results suggest that variation at *Pfcr1* and *Pfmdr1* loci in both Asian and African parasite populations is generated and/or maintained via substantially different mechanisms. Since *Pfmdr1* mutations may be associated with resistance to artemisinin combination therapies that are replacing CQ, particularly in Africa, it is important to determine if, and how, the genetic characteristics of this locus change over time,” the authors concluded.

The study analyzed 460 blood samples from malaria patients from diverse regions of Asia and the South Pacific (Papua New Guinea; Indonesia; Laos and India); Africa (Kenya, Uganda and Ghana) and South America (Brazil, Colombia and Guyana).

“This is a great example of molecular epidemiology helping to define the malaria parasite’s resistance to drugs. We need to track resistance exceedingly carefully as ACTs are being introduced and other antimalarials phased out.” said **Dr. Joel G. Breman**, a senior scientific advisor at Fogarty.

*Discordant Patterns of Genetic Variation at Two Chloroquine Resistance Loci in Worldwide Populations of the Malaria Parasite Plasmodium falciparum.* Rajeev K. Mehlotra, Gabriel Mattera, Moses J. Bockarie, Jason D. Maguire, J. Kevin Baird, Yagya D. Sharma, Michael Ali-frangis, Grant Dorsey, Philip J. Rosenthal, David J. Fryauff, James W. Kazura, Mark Stoneking and Peter A. Zimmerman. *Antimicrobial Agents and Chemotherapy*, June 2008, p. 2212-2222, Vol. 52, No. 6

 Distribution of Malaria



### According to the W.H.O. Global Malaria Program:

- Malaria is both preventable and curable, yet a child dies of it every 30 seconds, mostly in Africa.
- Every year, more than 500 million people become ill and more than 1 million die.
- Pregnant women are at high risk of malaria.
- About 40 percent of the world’s population is at risk, mostly in the poorest countries.
- Indoor spraying and use of long-lasting insecticidal nets are highly effective in reducing transmission.
- Transmission patterns differ, from endemic to a region to outbreaks caused by weather conditions or natural disasters where people have little or no immunity.
- Malaria causes an average loss of 1.3 percent annual growth in countries with intense transmission.
- Malaria has lifelong effects through increased poverty, impaired learning and decreased attendance in school and at work.
- The main objective of malaria control is reducing parasite infection by controlling the malaria-carrying mosquito.



## Cognitive deficits linked to cerebral malaria in children

New research conducted in part with Fogarty support indicates that cerebral malaria (CM) increases by almost four times the risk that sub-Saharan children will have cognitive deficits, compared to children without any form of malaria.

Lead author **Dr. Chandy C. John** of the University of Minnesota Medical School, writes in *Pediatrics* that this study provides the first evidence from a prospective study that “CM may be a major cause of cognitive impairment” in children in the region. Previous research had found similar results based on retrospective studies.

More than 750,000 African children every year contract cerebral malaria, and more than 200,000 may suffer from residual neurological harm.

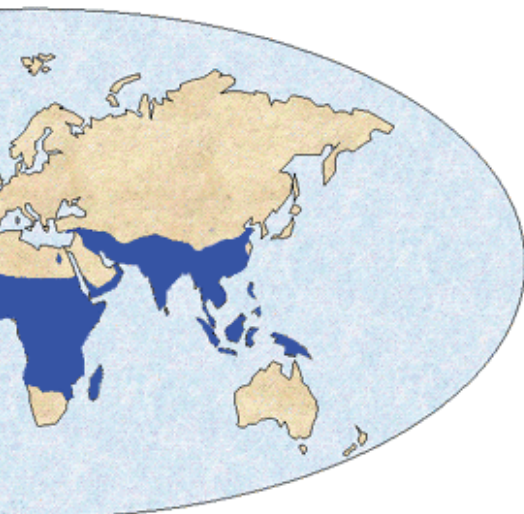
The study followed children age 5-12 at Mulago Hospital in Kampala, Uganda. Some had cerebral malaria, some had uncomplicated malaria (UM) and the largest cohort were not infected by malaria at all.

After two years of follow-up testing, 26.3 percent of the CM children compared to 12.5 percent of the UM children had cognitive deficits. Malaria-free children, by contrast, had deficits in 7.6 percent of cases.

“Deficits in children with cerebral malaria were primarily in the area of attention,” the study says. “After adjustment for age, gender, nutrition, home environment and school level, children with cerebral malaria had a 3.67-fold increased risk for a cognitive deficit compared with community children.”

The previous studies had followed subjects for six months after admission. This one followed the cohort for two years.

*Cerebral Malaria in Children Is Associated With Long-term Cognitive Impairment.* Chandy C. John, MD, Paul Bangirana, MS, Justus Byarugab, MMec, Robert O. Opoka, MMed, Richard Idro, MMed, Anne M. Jurek, PhD, Baolin Wu, PhD and Michael J. Boivin, PhD, MPH. *Pediatrics*. Published online June 9, 2008 (doi:10.1542/peds.2007-3709)



CDC

## NIH pledges support for Africa

Director **Dr. Elias A. Zerhouni** told a meeting of African health ministers recently that the NIH will support efforts to intensify health research and improve national health systems on the continent.

“This is a great moment. For the first time, we are all in unison that health research has to be developed at the local level and in an interdependent way,” Zerhouni said at the meeting in Algiers.

“NIH is ready to work with all the countries here and we look forward to the conference in Bamako,” he said, referring to the Second Global Forum on Health Research, scheduled in November in Mali.

The meeting’s main purpose was “renewing the commitment of countries to strengthen the generation of knowledge and narrow the knowledge gap to improve Africa’s health development and equity.”

It brought together 500 participants, including representatives of research institutes and universities within and outside Africa, NGOs and foundations, multilateral and bilateral aid organizations and the international media.



CDC

*P. falciparum causes the most deadly type of malaria and is spread by mosquitoes like this aedes aegypti.*

## Fogarty director wins prestigious infectious disease award

Fogarty Director **Dr. Roger I. Glass** was recently honored by the National Foundation for Infectious Diseases with its prestigious Dr. Charles Mérieux Award for his work on rotavirus vaccines in the developing world.

He is the first award winner to have known personally the late Dr. Mérieux, a French virologist whose father worked under Louis Pasteur and who built a small lab into one of the world's leading vaccine manufacturers, sanofi pasteur.

The award was presented at the foundation's annual conference, the world's largest scientific meeting on vaccine research and technology for disease prevention and treatment.

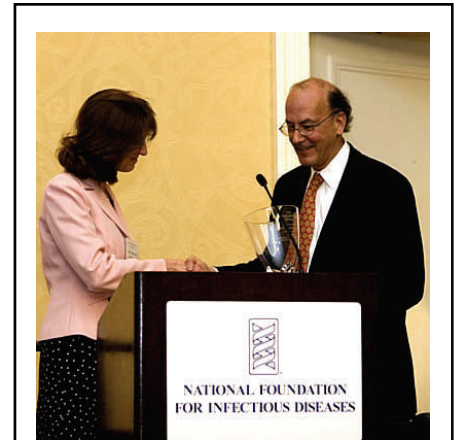
The prize goes each year to "an individual who demonstrates a commitment to science-based medicine and research in infectious diseases, shows excellence in clinical and research activities and has an unsurpassed dedication to improving pub-

lic health."

Dr. Glass was cited for his efforts to prevent rotavirus disease among infants and toddlers, more than half a million of whom die each year in the developing world from the effects of the diarrhea and the dehydration it causes. More than 55,000 American children are hospitalized with it each year.

"To receive an award named for one of the giants of medicine is humbling, and I accept it on behalf of all those selfless researchers working around the world to put the knowledge they have derived into practice," says Dr. Glass.

"As Dr. Mérieux believed, it is not enough to discover treatments — they have to be delivered and administered to the right people in the right place at the right time. It's what we support at Fogarty, and I hope honors like this inspire a new generation of scientists."



*Fogarty Director Dr. Roger Glass, receiving the Dr. Charles Mérieux Award, was cited for his work on rotavirus vaccines in developing nations and is the first winner to have known Mérieux personally.*

### NIH seeks "high-risk" research

NIH Director Dr. **Elias Zerhouni** has announced a two-track plan to improve the quality of research. One component is a \$41 billion fund to encourage "high-risk," high-impact" research. The other is reform of the peer-review system, including better compensation for reviewers.

"There had been a pervasive sense that peer review service has become more of a chore than a stimulating and privileged experience," he said.

"Reclaiming that excitement and pride, as well as removing needless burden, will stimulate new innovation and transformative research."

"As we contemplated possible changes, we were guided by two fundamental principles," Zerhouni said. "First, while improving the system, do no harm. That is, ensure that any changes to the peer review system bring significant value and reflect a favorable balance between costs and benefits. Second, continue to maximize the freedom of scientists to explore."

For more information, go to: <http://enhancing-peer-review.nih.gov/>

### Diversity of expertise necessary, says Fogarty deputy director

A more diverse array of specialists, including anthropologists, lawyers, engineers and economists, will be needed to implement breakthroughs in global health, according to Fogarty's Deputy Director, **Dr. Michael P. Johnson**.

Speaking at a recent congressional briefing on how best to deliver effective health products and services in remote and resource-poor locations, Johnson said, "The question is how to bring these important discoveries to scale."

Johnson cited Fogarty's Framework program as an example of bringing different disciplines together to improve research training.

"There are proven biomedical and behavioral interventions that years after discovery and despite substantial funding are not reaching large numbers of people who could benefit," he said.

Other speakers included Dr. Robert Ridley, director of the W.H.O.s Special Program for Research and Training in Tropical Diseases, Dr. Oladele Akogun from the Federal University of Yola, Nigeria and **Dr. Peter Hotez**, professor and chair of the department of microbiology and tropical medicine at the George Washington University Medical Center and a member of Fogarty's advisory board.



## PEOPLE

### Board Member Wins Oncology Award

Fogarty Board of Advisors member **Dr. Karen H. Antman**, has won the American Society of Clinical Oncology's Distinguished Service Award for Scientific Leadership, the organization's highest award.

Dr. Antman, who is provost of Boston University Medical Campus and dean of Boston University School of Medicine, previously was the National Cancer Institute's Deputy director for translational and clinical sciences. She was cited for her work in developing a standard treatment regimen for sarcoma.



Photo: BU Photo Services

### Eiss Writes on Product Development

Fogarty Senior Public Health Advisor **Robert Eiss** has published a paper on the intellectual property ramifications of public-private partnership product development for global health outcomes.

The paper appears in *Health Partnerships Review* published by the Global Forum for Health Research. In it, Eiss says "an effective and efficient drug development pipeline will require the continued development of an international clinical trials system that engages local investigators, communities and ethical review committees."

He also calls for more involvement by science and its funders in operational and health services research.

*"Managing intellectual property for global health outcomes: the example of product development partnerships."* *Health Partnerships Review* 87. [http://www.globalforumhealth.org/filesupld/hpr/articles/HPR\\_Eiss\\_Managing\\_intellectualproperty.pdf](http://www.globalforumhealth.org/filesupld/hpr/articles/HPR_Eiss_Managing_intellectualproperty.pdf)

### Grantee Named Pentagon Fellow

A Fogarty grantee collaborating on a project with colleagues in Slovakia has been named one of six Defense Department all-stars — scientists whose novel research may one day strengthen national security.

**Dr. Barbara G. Shinn-Cunningham** of Boston University, recipient of a Fogarty International Research Collaboration Award, has been researching auditory pathways to better understand the mechanism by which people process what they hear. Her project for the Pentagon is "managing acoustic communications in high-stress settings."

As a National Security Science and Engineering Faculty Fellow, she will be eligible for up to \$3 million

over five years from the Pentagon, which is encouraging the nation's top scientists to undertake high-risk research that would enhance the military's ability to maintain superiority.

### Fogarty's Psychological Appeal

Fogarty program directors **Dr. Kathleen Michels** and **Dr. Xingzhu Liu** were quoted in *Psychology International*, about funding opportunities for psychology researchers abroad.

They provided information about the Scholars Program and programs on Brain Disorders in the Developing World; International Tobacco and Health Research Capacity Building; and Stigma and Global Health Research, all of which are relevant to psychologists. <http://www.apa.org/international/pi/508funding.html>

### Malaria Partnership Successes Cited

Program officer **Dr. Barbara Sina** presented successes of Fogarty's long-time partnership with other global health organizations of the Multilateral Initiative on Malaria (MIM) before a symposium of leading scientists arranged by the National Academies in June.

Along with current MIM coordinator Francine Ntoumi, Sina offered a case study of the 11-year-old program as an

example of multisectoral partnerships aimed at a particular objective, in this case, eliminating malaria.



Fogarty and other institutes and center were instrumental in the birth of the program, which includes foreign governments, UN agencies, international research organizations and pharmaceutical firms.

### Loss of rainforests affects cancer drugs

Fogarty's Deputy Director of international training and research, **Dr. Joshua Rosenthal**, was quoted in a *Journal of the National Cancer Institute* article on the threat to potential cancer-fighting drugs native to rapidly vanishing rainforests.

"Today, plants remain an important and continuing source of novel chemotypes," he said. "While researchers have not yet described (chemically) or analyzed most plant species and genera, they are rapidly disappearing at a time when research tools are much more powerful."

*"Back to Nature: Extinction of Medicinal Plants Threatens Drug Discovery."* Brower, Vicki. *Journal of the National Cancer Institute Advance Access published online on June 10, 2008 JNCI Journal of the National Cancer Institute*, doi:10.1093/jnci/djn199

# FUNDING OPPORTUNITIES

Program	Contact	Receipt Date	Eligibility
AIDS International Training and Research Program (AITRP)	Jeanne McDermott, Ph.D. mcdermo@mail.nih.gov	August 14, 2008	U.S. (or pre-approved non-U.S.) nonprofit, public or private institutions with HIV/AIDS and HIV-related research collaborations with low- and middle-income institutions.
International Clinical, Operational and Health Services Research Training Award for AIDS and TB (ICOHRTA AIDS/TB)	Jeanne McDermott, Ph.D. mcdermo@mail.nih.gov	August 18, 2008	This program supports research training to strengthen the capacity of institutions in low- and middle-income countries to conduct HIV/AIDS and TB research.
NCMHD Minority Health and Health Disparities International Research Training	Barbara Sina, Ph.D. barbara_sina@nih.gov	August 19, 2008	This program provides international research training opportunities to qualified undergraduate, graduate and health professions students who are from health disparities populations and/or are underrepresented in basic science, biomedical, clinical or behavioral health research career fields.
Brain Disorders in the Developing World	Kathleen Michels, Ph.D. brainfic@nih.gov	AIDS-related: Aug. 22, 2008	The program supports collaborative research and capacity building projects on brain disorders throughout life, relevant to low- and middle-income nations.
Collaborative HIV/AIDS Studies in the Middle East and North Africa	Jeanne McDermott, Ph.D. mcdermo@mail.nih.gov	AIDS-related: Sept. 7, 2008 Non-AIDS: Oct. 16, 2008	AIDS-related funding opportunity in Middle East and North Africa.
Global Infectious Disease Research Training Program (GID)	Barbara Sina, Ph.D. barbara_sina@nih.gov	September 16, 2008	U.S. and low- or middle-income institutions with demonstrated history of research collaboration.
Global Research Initiative Program for New Foreign Investigators Basic Biomedical, Global Research Initiative Program for New Foreign Investigators Behavioral and Social Science (GRIP)	Aron Primack, M.D. primacka@mail.nih.gov	September 21, 2008	Scientists in low- and middle-income countries currently or recently supported through Fogarty D43 international training programs, through NIH Visiting Program for Foreign Scientists, or as NIDA INVEST or Humphrey Fellowships.
Millennium Promise Award: Non-communicable Chronic Diseases Research Training Program (NCoD)	Aron Primack, M.D. primacka@mail.nih.gov	September 29, 2008	The institutions applying can be domestic or foreign, but have to exhibit the ability to do such training, and must exhibit that they have existing research programs in these fields.

## Global Health Matters

### Fogarty International Center

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Program research grants or research training grants are listed at: [www.fic.nih.gov/funding](http://www.fic.nih.gov/funding)



## FOGARTY at 40

In the next edition, *Global Health Matters* will review the first 40 years of this unique part of the NIH, with photos from the family collection of John E. Fogarty, the Rhode Island congressman, whose championing of international medical research helped create this center, which is proud to bear his name.