

Global Health Matters

News from the John E. Fogarty International Center

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Fogarty's Acting Director Joins Secretary Thompson for Visit to Russia

FIC Acting Director Sharon Hrynkow, Ph.D., participated in Department of Health and Human Services Secretary Tommy Thompson's recent trip to Russia, where he announced a Global Fund award to Russia for \$34.2 million over 2 years to help treat and care for people living with HIV/AIDS and tuberculosis. The Global Fund, to which the United States is the largest contributor, is a charitable foundation intended to increase coordination and mobilize additional resources to fight HIV/AIDS, tuberculosis, and malaria. Through a public-private partnership, the foundation focuses on making sustainable and significant contributions to reduce infections, illness, and death, thereby mitigating the impact caused by HIV/AIDS, tuberculosis, and malaria in countries in need.

Along with Dr. Hrynkow, other individuals who joined Secretary Thompson on his trip to Russia were Andrew C. von Eschenbach, M.D., Director of the National Cancer Institute (NCI); Joe Harford, Ph.D., Office of International Affairs, NCI; Edmond Tramont, M.D., Director, Division of AIDS, National Institute of Allergy and Infectious Diseases; and Anne Peterson, M.D., M.P.H., Assistant Administrator, Bureau

for Global Health, U.S. Agency for International Development (USAID). The Secretary's team visited members of the Duma, the lower house of Parliament, and leading research institutions in Russia, including the Englehardt Institute and St. Petersburg State University. During these visits, the U.S. team listened to reports about people in Russia living with AIDS; discussed the problem of cancer in Russia; and highlighted needs and opportunities for cooperation between the United States and Russia on AIDS and cancer, both of which are growing challenges for the Russian people.



Secretary Thompson meets FIC Trainees during Trip to Russia. Left to right: Roman Dyatlov, FIC Trainee; Secretary Thompson, Department of Health and Human Services; Svetlana Palamodova, FIC Trainee; Dr. Sharon Hrynkow, FIC Acting Director; and Dr. Igor Murin, First Vice Rector, St. Petersburg State University (Russia).

FIC-sponsored efforts and capacity-building programs were front and center during the day-long visit in St. Petersburg, where Secretary Thompson discussed the role of physicians and scientists in the fight against AIDS. Several of the FIC/NIH AIDS trainees

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Sharon Hrynkow, Ph.D.
Acting Director, FIC

Message From the Director

The NIH Roadmap for Medical Research, launched by NIH Director Elias A. Zerhouni, M.D., on September 30, 2003, just celebrated its first anniversary with an enviable record of achievements (<http://nihroadmap.nih.gov>).

The occasion made me pause to reflect on the Fogarty programs and grantees, our relationships with Roadmap awards, and our prospects for the future. I was gratified to see that five principal investigators with active Fogarty grants received NIH Roadmap support in its first year of operation. Several of the awards addressed the Roadmap objective of building the research teams of the future by forging new kinds of collaborations.

These projects include a curriculum-development award to prepare an interdisciplinary, Internet-based international curriculum linking Tufts University to East African public health educators, researchers, and institutions (Jeffrey K. Griffiths, M.D., M.P.H., Tufts University); a Center award to bring engineers, transportation specialists, public health professionals, life scientists, and others together in new ways to tackle malaria and other mosquito-borne illnesses facing cities in poor countries (John C. Beier, Ph.D., University of Miami School of Medicine); and a project to apply a new malaria screening assay usable in resource-poor settings (Jon C. Clardy, Ph.D., Harvard Medical School).

Our congratulations to these grantees for using the Roadmap opportunities to support international and global efforts!

As we look to the Roadmap's second year of operation, we will continue to encourage applications from Fogarty grantees as well as others wishing to join the global health research community via the Roadmap. Stay tuned for further communications from me on this topic through our newly created listserv for Fogarty Grantees, entitled FIC-GRANTEES-L.

In reflecting further on Roadmap opportunities and the Fogarty community, a new image springs to mind, that of Fogarty as a "global positioning system" for the NIH. As we work to apply the Roadmap to international and global challenges through our grantees, we are adding a critical perspective, a third dimension, to the enterprise. While Fogarty is not among the largest of the NIH Institutes and Centers, our unique mission allows us to serve like a global positioning system, placing NIH squarely within the worldwide medical research community.

Thanks to our colleagues at the NIH and throughout the world for working with us to advance the global health agenda, to build international partnerships, and to spark and support research and training programs.

As we look forward to the New Year, let me wish you all a happy, healthy holiday season.

A handwritten signature in blue ink that reads "Sharon Hrynkow". The signature is fluid and cursive.

Sharon Hrynkow, Ph.D.
Acting Director, Fogarty International Center

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and Emerging Infectious Disease Fellows now training at St. Petersburg State greeted the Secretary and Dr. Hrynkow. In collaboration with its NIH partners, the National Institute of Allergy and Infectious Diseases and the Institute of Dental and Craniofacial Research, and the Centers for Disease Control and Prevention (CDC), FIC supports three training programs in Russia through three U.S. institutions: Yale University School of Public Health, Johns Hopkins University's Bloomberg School of Public Health, and the State University of New York Downstate Medical Center.

The Secretary's team also visited an orphanage for children born to HIV-positive women in the Russian Federation, the only facility of its kind, located 40 minutes outside of St. Petersburg. The orphanage is a component of the Russian Center for HIV-positive Expectant Mothers and Children, part of the Ministry of Health and Social Development of the Russian Federation. In Russia all children born to HIV-positive

women are considered to be HIV-positive—such children are 9 times more likely to be abandoned at birth compared to other infants. HIV status is confirmed when a baby is between 18 and 36 months of age. Evgeny Veronin, M.D., a prominent pediatrician and head of the Russian Center for HIV-positive Expectant Mothers and Children, provides the children with the necessary medical care and medicine, when antiretroviral drugs are available. Funds for antiretroviral drugs and access to high-quality treatment are not always available, even for the limited number of children at the orphanage.

“One cannot visit such a center and leave unchanged,” said Dr. Hrynkow. Putting this in the context of the team's earlier visit with the FIC/NIH AIDS trainees, she added, “Our hope and expectation is that the bright young scientists now being supported through the FIC/NIH programs in Russia will contribute to AIDS prevention and treatment programs.” ❖

HIV/AIDS in Russia

(From Country Profile (Russia), U.S. Agency for International Development, Bureau for Global Health)

Did you know...

- The rate of growth of new HIV infections in Russia is among the highest in the world, and estimates suggest that adult prevalence will increase to between 4% and 5% by 2006. The Russian population was 144,664,000 in 2001. The World Bank estimates that by 2020, the cumulative number of HIV cases could reach as high as 14.5 million.
- According to the Russian Federal AIDS Center, in 2002, 15- to 20-year-olds accounted for about 18% (men) and 25% (women) of HIV cases, and 20- to 30-year-olds accounted for 65% (men) and 58% (women) of the cases.
- The HIV/AIDS epidemic is starting to bridge the gap between at-risk populations (i.e., sex workers and their clients, injecting drug users) and the general population. In 2001, women accounted for 24% of all HIV infections, and in 2002, 33%.
- The number of infants born to HIV-positive mothers grew from 1,139 to 2,999 between 2001 and 2003; and during that same period, new HIV/AIDS cases among children under 15 years old grew from 1,291 to 3,181.

FIC Advisory Board News

Secretary Tommy Thompson has named two new members to the FIC Advisory Board. They are **Arthur M. Kleinman**, M.D., Harvard University, and **William A. Vega**, Ph.D., Behavioral Research Training Institute, Robert Wood Johnson Medical School, University of Medicine and Dentistry of New Jersey. The new appointees will serve through January 2008.

The new board members will join the currently serving members: **Sharon Ramey**, Ph.D., Georgetown University School of Nursing and Health Studies; **Robert Redfield**, M.D., University of Maryland, Baltimore; **Burton Singer**, Ph.D., Princeton University; **Elizabeth Barrett-Connor**, M.D., D.C.M.T., University of California, San Diego; **Patricia Danzon**, Ph.D., The Wharton School, University of Pennsylvania; **Wafaie Fawzi**, Dr.P.H., Harvard School of Public Health; **Douglas Heimburger**, M.D., M.S., F.A.C.P., University of Alabama, Birmingham; **Lee W. Riley**, M.D., University of California, Berkeley School of Public Health; **Jean A. Wright**, M.D., Bakus Children's Hospital; **May L. Wykle**, Ph.D., R.N., F.A.A.N.N., Frances Payne Bolton School of Nursing, Case Western Reserve

University; and **Dikembe Mutombo**, M.A., appointment pending.

The agenda for the May 2004 Advisory Board meeting focused on the epidemic of obesity in the United States and in developing countries. Unraveling the complexity of genetic and environmental factors involved

in obesity and the interplay between them is a major research challenge. The Director of the National Institute of Diabetes and Digestive and Kidney Diseases, **Allan M. Spiegel**, M.D., discussed the NIH Strategic Plan for Obesity Research; **Rachel Nugent**, Ph.D., a FIC Program Officer, spoke about obesity issues in developing countries; and Professor **Malegapuru Makogoba**, M.D., Ph.D., of the University of Kwa Zulu Natal, Durban, South Africa, provided a South African perspective on the issues of overweight and underweight. The Board applauded FIC for its timely consideration of the worldwide epidemic of obesity and urged that the international dimension of obesity be integrated into the domestic research agenda outlined in the NIH Strategic Plan for Obesity Research. FIC is now working with partners at NIH to explore program options and opportunities to support research and training on global obesity issues.

Yvonne T. Maddox, Ph.D., Deputy Director, National Institute of Child Health and Human Development, and *ex officio* FIC Board Member, explained the NIH Public Trust Initiative, which seeks to improve the public's health by promoting public trust in biomedical and behavioral research. Dr. Maddox co-chairs this NIH initiative with **Patricia A. Grady**, Ph.D., R.N., Director of the National Institute of Nursing Research. FIC Acting Director **Sharon Hrynkow**, Ph.D., serves on the Public Trust Steering Committee and is working to ensure that international communities and "publics" are considered in appropriate actions.

The open session of the September Advisory Board meeting, held on September 14, 2004, included a presentation by **Mary Woolley**, President and CEO of Research!America, on U.S. attitudes toward global health. During her presentation, she stated that Americans appreciate that health challenges abroad differ from those in the United States and support U.S. efforts to address them. For more data, see Research!America's website at <http://www.researchamerica.org>. **Anthony S. Fauci**, M.D., Director, National Institute of

Obesity and Overweight

Perspectives from the World Health Organization

- Globally, at least 17.6 million children under 5 years of age and 1 billion adults are estimated to be overweight, with a body mass index (BMI) of more than 25kg/m²; of those adults, at least 300 million are clinically obese, with BMIs of 30kg/m² or more.*
- Contrary to conventional wisdom, the obesity epidemic is not restricted to industrialized societies. It is estimated that in developing countries, more than 115 million people suffer from obesity-related problems.
- Obesity and overweight pose a major risk for serious diet-related chronic diseases—type 2 diabetes, cardiovascular disease, hypertension, stroke, and certain forms of cancer—and account for 2%–6% of total health care costs in several developed countries.
- People who are undernourished early in life and then become obese in adulthood tend to develop conditions such as high blood pressure, heart disease, and diabetes at earlier ages and in more severe forms than people who were never undernourished.

*BMI = body weight in kilograms divided by the square of the height in meters.

Allergy and Infectious Diseases (NIAID), provided an update on NIAID priorities in regard to emerging infectious diseases and AIDS. ❖

FIC Welcomes Science Diplomats

FIC is pleased to welcome **Zakir Bengali**, Ph.D., who will lead the Division of International Relations' efforts related to South Asia. A dedicated scientist and science administrator, Dr. Bengali comes to FIC from the Center for Scientific Review (CSR), NIH, where he worked for the past 15 years as Chief of the Biochemical Sciences Review Group. Dr. Bengali is an expert in the areas of cell-cell and cell-matrix interactions, particularly on how they influence disease processes, aging, and development. He has also served as a Scientific Review Administrator for the Pathobiochemistry Study Section of CSR. Dedicated to helping other scientists learn how to secure funding for their work, he conducts grant-writing workshops throughout the United States and the world, and he will continue these efforts as a member of the FIC team. Hitting the ground running, Dr. Bengali conducted a 2-week grant-writing "tour" during August and September 2004 in which he visited five major cities in India, including Delhi, Hyderabad, Bangalore, Pune, and Mumbai. Originally from India, Dr. Bengali earned his Ph.D. at the University of Rochester in New York. From 1974 to 1980, he was a Visiting Fellow and Visiting Associate at the National Cancer Institute, where he studied DNA viruses suspected of causing cancers in humans and other primates. He then worked briefly as a grants associate before serving as Health Scientist Administrator at the Airway Diseases Branch of the National Heart, Lung, and Blood Institute. Welcome to FIC, Zakir!

FIC also welcomes **Ana B. Chepelinsky**, Ph.D., of the National Eye Institute (NEI), to its Division of International Relations, where she will direct activities related to Latin

America and the Caribbean. A dedicated NIH scientist for the past 28 years, Dr. Chepelinsky is originally from Argentina, where she earned her Ph.D. from Buenos Aires University in 1970. As a Senior Scientist who has conducted extensive biomedical research throughout Latin America and the United States, she brings to Fogarty a wealth of scientific and international experience, including a specialized perspective on Latin America and gender and diversity issues in the biomedical sciences. Specializing in molecular and cellular developmental biology, molecular genetics, and genomics, Dr. Chepelinsky has been Chief of the Regulation of Gene Expression Section for 11 of the 21 years that she has worked at NEI. She has played a significant role in the training and mentoring of post-doctoral fellows and other young scientists from all over the world. Additionally, she has served as NEI Women Scientist Advisor and as NIH Diversity Council Representative to the Diversity Committee of the Department of Health and Human Services. In October 2003, Dr. Chepelinsky was a key participant in the "Colloquium on Career Paths for Women in the Health Sciences: A Global Perspective," an event that was hosted by FIC in collaboration with the Office of Research on Women's Health and the National Institute of Environmental Health Sciences. She has served as a chief organizer and speaker at prominent scientific conferences and meetings around the world, including the United States, France, Switzerland, Spain, Japan, India, Italy, Finland, Poland, China, Morocco, and Australia. Most recently, she has been playing an instrumental role in the organization of the XVII International Congress of Eye Research in Buenos Aires, Argentina. Welcome, Ana!

Also joining the Division of International Relations team is **Henry "Skip" Francis**, M.D., who comes to Fogarty from the National Institute on Drug Abuse (NIDA), where, starting in 1998, he was the Director of the Center on AIDS and Other Medical Consequences of Drug Abuse (CAMCODA). At FIC's Division of International Relations,



Zakir Bengali, Ph.D.



Ana B. Chepelinsky, Ph.D.



Skip Francis, M.D.

Dr. Francis will manage Fogarty's extensive portfolio of NIH projects in Sub-Saharan Africa. Dr. Francis, who is an expert on global issues related to HIV/AIDS and infectious disease transmission, brings to Fogarty an impressive background in international clinical research spanning more than 20 years. After earning his M.D. from Howard University in 1978, Dr. Francis completed extensive training in internal medicine and infectious diseases through the University of California's Long Beach Veterans Administration Hospital and the Johns Hopkins School of Medicine's Division of Infectious Diseases. He then worked in Ghana, West Africa, on a research project for the National Institute of Allergy and Infectious Diseases (NIAID) studying onchocerciasis, a common clinical cause of blindness, after which he directed an NIAID HIV/AIDS research laboratory project in Zaire, Central Africa. Upon his return to the United States in 1988, Dr. Francis joined the NIAID Office of the Intramural Research Director, where he worked closely with FIC's Division of International Training and Research on the AIDS International Training and Research Program (AITRP) and other research projects. He subsequently became an Assistant Professor of Medicine at Johns Hopkins University, where he worked in the AIDS Clinical Trials Unit on cutting-edge, NIH-funded research testing retroviral drugs. Concurrently, Dr. Francis became the Medical Director of the Baltimore City Health Department's Early HIV Intervention Program and Sexually Transmitted Disease Clinics and the Principal Medical Officer of the Johns Hopkins Broadway Center, IV Drug User Intervention Program. Dr. Francis joined NIDA as the Clinical Medicine Branch Chief in 1996. Fogarty is happy to welcome Skip Francis to its team! ♦

Program Notes

Building Capacity in Trauma and Injury Research in the Developing World

On World Health Day, April 7, 2004, which focused on road safety, FIC launched a new program to address the growing burden of morbidity and mortality caused by trauma and injury in the developing world. Both trauma and injury are leading causes of death and disability worldwide; however, a disproportionate burden is borne by developing countries, where resources, both financial and medical, are lacking. Six of the 15 leading causes of death in people 15–44 years of age are trauma related, according to the World Health Organization (WHO); and more than five million deaths per year are caused by trauma resulting from both intentional and unintentional injury. Trauma and injury are also major contributors to long-term disability.

The new Fogarty International Collaborative Trauma and Injury Research Training Program (ICTIRT) invited applications in areas such as prevention, on-the-scene treatment, emergency medical facilities and services, post-acute care, development of low-cost prosthetic devices, long-term care including rehabilitation, and evaluation of low-cost techniques in diagnostic procedures. Training was encouraged in low-cost technologies such as x-ray and ultrasound, ventilators, optimal resuscitation fluids, blood substitutes, and materials to cover wounds of burn victims. Approved applications will be funded in February 2005.

“Our goal in this program,” said FIC Acting Director Sharon Hrynkow, Ph.D., “which contributes to raising awareness of the human and economic costs caused by trauma and injury, is to build skills and knowledge on how to most effectively address these daunting problems in resource-constrained settings. Our focus on the people and skills will have payoff, not only abroad but potentially back home as well, to the extent that new techniques are transferable.”

The program has a current combined commitment of approximately \$7 million over 5 years from FIC and its partners, which include seven NIH affiliates, the Centers for Disease Control and Prevention's (CDC's) National Center for Injury Prevention and Control, the Pan American Health Organization, and the WHO. Individual centers will receive awards of up to \$150,000 per year in direct costs for up to 5 years of support. The Trauma and Injury Centers will address training across the range of basic to applied science, the epidemiology of risk factors, acute care and survival, rehabilitation, and long-term mental health consequences.

The new ICTIRT Program honors the memory of John "Jack" Furman Finklea, M.D., M.P.H., Dr.P.H., a world leader in the field of injury control research. Dr. Finklea was instrumental in establishing FIC's International Training and Research Program in Environmental and Occupational Health and in launching CDC's extramural injury control research grants program. In addition, Dr. Finklea was the director of the National Institute for Occupational Safety and Health at CDC from 1975 to 1978.

Fogarty-Ellison Fellows Gear Up at Stone House

Thirty-one Fogarty-Ellison Fellows arrived at NIH in a flurry of excitement about an 18-day orientation program. Twenty U.S. students and 11 foreign students will be supported for 1 year of mentored training in clinical research at sites as diverse as Botswana and Brazil; Haiti, India, and South Africa; Peru and Uganda; Zambia and Thailand; and Kenya and Mali. The U.S. and foreign student "twins" participating in the program are at similar points in their careers and are selected to participate by faculty at the host sites. The U.S. participants are either medical students taking their fourth year off or are public health graduate students. The foreign participants are at similar stages in their education.

The 18-day orientation—a time of excitement, bonding, and learning—began on July 5 and focused on all aspects of clinical

research and the major areas of global health research. A diverse group of NIH leaders and scientists—including Raynard Kington, M.D., Ph.D., NIH Deputy Director; Anthony S. Fauci, M.D., Director, National Institute of Allergy and Infectious Diseases; and U.S. Surgeon General Richard Carmona, M.D., M.P.H.—energized the fellows with their teaching sessions and updates on malaria, tuberculosis, tobacco use, and other major health issues. In addition, the Fellows presented their proposed research plans for the upcoming year, a requirement of the Fogarty-Ellison Fellowship Program.

In commending the new Fellows, FIC Acting Director Sharon Hrynkow, Ph.D., added, "The needs for training in clinical research in the United States and developing countries are significant. We hope that hands-on experience in conducting research in a developing country and a firsthand knowledge of the conditions and challenges facing those who live in parts of the world where disease burdens are highest will encourage these young people to pursue careers in clinical research in areas related to global health."

The Fogarty-Ellison Fellowships in Global Health and Clinical Research, jointly supported by FIC, The Ellison Medical Foundation, and the NIH National Center on Minority Health and Health Disparities, provide early career opportunities for U.S. and developing country graduate students in the health professions to participate in 1 year of mentored clinical research at an NIH-funded research center in a developing country. The program pairs U.S. students with students from the host country, thereby creating partnerships and building a new international community of research scholars.

The selected foreign sites are advanced clinical research centers that have graduate
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Fogarty-Ellison Group

First Class of Fogarty-Ellison Fellows

U.S./Foreign Fogarty-Ellison Fellows	Foreign Site	U.S./Foreign Site Mentors
<p>Bonnie Baker, M.D. candidate, University of Rochester School of Medicine and Dentistry</p> <p>Jeremy Schwartz, M.D. candidate, University of Rochester School of Medicine and Dentistry</p> <p>Dr. David Meya, Makerere University, Uganda</p>	Kampala, Uganda	<p>Dr. Christopher Whalen, Case Western University</p> <p>Dr. Moses Kanya, Makerere University</p> <p>Research: HIV and tuberculosis, focusing on punctuated antiretroviral therapy</p>
<p>Natalie Bowman, M.D. candidate, Columbia University</p> <p>Suzanne DeLea, M.D. candidate, University of New Mexico</p> <p>Phabiola Herrera, Universidad Peruana Cayetano Heredia, Peru</p>	Lima, Peru	<p>Dr. Robert Gilman, Johns Hopkins University</p> <p>Dr. Alberto Ramírez-Ramos, Universidad Peruana Cayetano Heredia</p> <p>Research: emerging infectious diseases in Peru</p>
<p>Jacqueline Firth, M.D./M.P.H. candidate, Tulane University</p> <p>Mark Franciosa, M.D. candidate, Boston University</p> <p>Kalyan Banda and Srila Gopal, Christian Medical College, India</p>	Vellore, India	<p>Dr. Kenneth Mayer, Brown University</p> <p>Dr. Gagandeep Kang, Christian Medical College</p> <p>Research: molecular epidemiology of cryptosporidial infections in HIV-infected individuals in South India</p>
<p>David Edwards, M.D./M.P.H. candidate, Duke University</p> <p>Daniel Johnson, M.D./M.P.H. candidate, Tulane University*</p> <p>Drs. Terrence Moodley and Munira Khan, University of Natal, South Africa</p>	Durban, South Africa	<p>Dr. Salim Abdool Karim, Columbia University</p> <p>*Dr. Lee Riley, University of California, Berkeley</p> <p>Dr. Quarraisha Abdool Karim, the HIV/AIDS Networking Centre, University of Natal</p> <p>Research: HIV/AIDS</p>
<p>Jose Hagan, M.D. candidate, Vanderbilt University</p> <p>Enoch Sepako, Princess Marina Hospital, Botswana</p>	Gabarone, Botswana	<p>Dr. Max Essex, Harvard School of Public Health,</p> <p>Dr. Ibou Thior, Princess Marina Hospital</p> <p>Research: the identification of HLA restricted CTL epitopes of HIV-1C in Botswana</p>
<p>Russell Horwitz, M.D./Ph.D. candidate, University of Illinois, Urbana-Champaign</p> <p>Pierre Joseph, Haitian Group for the Study of Kaposi's Sarcoma and Opportunistic Infections</p>	Port au Prince, Haiti	<p>Dr. Warren Johnson and Dan Fitzgerald, Cornell University</p> <p>Dr. Jean William Pape, Haitian Group for the Study of Kaposi's Sarcoma and Opportunistic Infections (GHESKIO)</p> <p>Research: Kaposi's sarcoma and opportunistic infections</p>
<p>Evelyn Hseih, M.D. candidate, SUNY-Stonybrook, and M.P.H. candidate, Harvard University</p> <p>Magaly Blas, Universidad Peruana Cayetano Heredia</p>	Heredia, Peru	<p>Dr. King Holmes, University of Washington</p> <p>Dr. Alejandro Llanos Cuentas, Universidad Peruana Cayetano Heredia</p> <p>Research: reduction of HIV transmission by control of sexually transmitted diseases</p>

First Class of Fogarty-Ellison Fellows *Continued*

U.S./Foreign Fogarty-Ellison Fellows	Foreign Site	U.S./Foreign Site Mentors
<p>Joe Hyder, M.D./Ph.D. candidate, University of California, San Diego Supachai Sakkhachornphop, Chiang Mai University, Thailand</p>	Chiang Mai, Thailand	<p>Dr. Chris Beyrer, Johns Hopkins University Dr. Thira Sirisanthana, Chiang Mai University Research: effect of antiretroviral therapy in reducing HIV transmission</p>
<p>Michael Kinzer, M.D. candidate, Vanderbilt University William Mapham, University of Pretoria, South Africa</p>	Pretoria, South Africa	<p>Dr. Brian Forsythe, Yale University Dr. Bridget Jeffery, University of Pretoria Kalafong Hospital Research: HIV and pre/postnatal care</p>
<p>Peter “Buzz” Marcovici, M.D. candidate, Columbia University Seth O’Neal, M.D. candidate, Oregon Health and Science University Edilane Gouveia Voss Boaventura, Federal University of Bahia, Brazil</p>	Bahia, Brazil	<p>Dr. Warren Johnson, Cornell Medical School Dr. Mitermayer Galvão dos Reis, Federal University of Bahia Research: tropical diseases</p>
<p>Karen Megazzini, Dr.P.H. candidate, University of Alabama at Birmingham (UAB) Dalilia Zachary, M.D. candidate, Johns Hopkins University Dr. Aggrey Mweemba, Center for Infectious Disease Research, Zambia</p>	Lusaka, Zambia	<p>Dr. Sten Vermund, UAB Dr. Moses Sinkala, Center for Infectious Disease Research Research: HIV seroincidence among women targeted for inclusion in HPTN 035</p>
<p>Jason Nixon, M.D. candidate, Chicago Medical School Drissa Coulibaly, M.D., University of Bamako, Mali</p>	Bamako, Mali	<p>Dr. Chris Plowe, University of Maryland Prof. Ogobara Doumbo, University of Bamako Research: malaria research</p>
<p>Sara Selig, M.D. candidate, University of Colorado Norman Njogu Kiiru, University of Nairobi</p>	Nairobi, Kenya	<p>Dr. King Holmes, University of Washington Dr. James Kiarie, University of Nairobi AIDS Research and Training Program Research: interactions of HIV infection with sexually transmitted diseases</p>
<p>Snigdha Vallabhaneni, M.D. candidate, Brown University Medical School Sandeep Pulimi, YR Gaitonde Centre for AIDS Research, India</p>	Chennai, India	<p>Dr. Kenneth Mayer, Brown University Dr. Uniti Solomon, Director of the YR Gaitonde Centre for AIDS Research Research: molecular epidemiology of cryptosporidial infections in HIV-infected individuals</p>

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training programs in the health professions, a track record of strong mentoring, and long-standing collaborative relationships with strong U.S. institutions. Critical support in the areas of student recruitment, review, and matching are provided by FIC partners, the Association of American Medical Colleges, and the Association of Schools of Public Health.

In 2005, FIC plans to expand the program in terms of student enrollment and geographic sites. ❖

Science for Global Health

The following are illustrative examples of recent FIC grantee advances. We applaud our grantees!

Wafae Fawzi, M.D., Dr.P.H., a FIC Board Member, and his colleagues at the Harvard University School of Public Health and in Tanzania showed that multivitamin supplements containing high doses of the vitamin B complex and vitamins C and E, when given to HIV-infected women during pregnancy and for more than 5 years after giving birth, reduced the symptoms of AIDS. The study suggests that a more effective use of vitamins could ameliorate AIDS symptoms, thereby reducing the need for drugs and the subsequent development of resistance to those drugs over the long term. The supplements also bolstered the counts of disease-fighting immune cells and modestly lowered HIV levels in the blood. This study, conducted in Tanzania, was supported by the National Institute of Child Health and Human Development (NICHD), with training supported by FIC through the AIDS International Training and Research Program. (*NEJM* 2004; 351:23-32)

Lia Fernald, Ph.D., M.B.A., University of California, Berkeley, and colleagues from the Instituto Nacional de Salud Publica in

Mexico showed that the rural poor living in Mexico experience overweight and obesity at the same levels as (or slightly higher than) the general population: For example, among the rural poor, 67% of women and 61% of men are overweight or obese, compared with 60% of women and 50% of men in the general population. The high rate of overweight and obesity in impoverished rural Mexico underscores the need to expand health services to address diseases that are correlated to overweight and obesity, such as hypertension, diabetes, and insulin resistance. The findings also emphasize the importance of recognizing that obesity exists concurrently with diseases of undernourishment, such as anemia and micronutrient deficiencies. Dr. Fernald, a FIC grantee in the International Research Scientist Career Development (KO1) program, led the study. The government of Mexico provided additional support for the KO1 Award, and NICHD provided additional support for research costs. (*JAMA* 2004; 291:2544-2545)

Eduardo Ortega, M.D., Instituto de Investigaciones Cientificas in Panama, and colleagues have developed a new, more effective means to measure malaria parasite levels in resource-poor settings. Whereas typical assays depend on the use of radioactivity, which is difficult to obtain in many countries, the new assay employs a fluorescent dye in a rapid, inexpensive, and accurate test system. Researchers in Bolivia, Italy, and Madagascar have already adopted the new technique. Scientists from the Madagascar International Cooperative Biodiversity Group visited the Panama International Cooperative Biodiversity Group (ICBG) to learn the technique, making this an excellent example of South-South technology transfer growing out of NIH support. The ICBG program is led and administered by the FIC on behalf of its NIH partners, the National Science Foundation, and the U.S. Department of Agriculture. (*Am J Trop Med Hyg* 2004; 70:119-124) ❖

FIC IN ACTION

Probing the Human and Economic Impact of a Disease of Poverty

“One of the best predictors of how well a favela or shantytown child will fare by the third grade is the extent to which they experience persistent and repeated diarrhea during their first two years of life.” According to Richard Guerrant, M.D., of the University of Virginia, this statement summarizes his work of the past 15 years with Aldo Lima, M.D., Ph.D., and his research team in Northeastern Brazil. The research was supported through the National Institute of Allergy and Infectious Diseases’ (NIAID’s) International Collaborations in Infectious Disease Research (ICIDR) Program, and research training was supported by FIC’s International Training and Research Program in Emerging and Infectious Diseases (ITREID).

Visiting health workers, who lived and participated in the community being studied, worked with Brazil’s Universidade Federal do Ceara (UFC) and with University of Virginia faculty and students to almost eliminate child mortality in an urban Brazilian shantytown while probing the causes of



Team of Visiting Health Workers in Brazil.

repeated and persistent diarrhea in the process. Not only did the effect of diarrhea last long after the diarrheic episodes ceased, but researchers also found that a heavy burden of diarrhea in children younger than 2 years of age was associated with a stunting of growth and impaired physical development over the next 4 to 7 years and diminished long-term cognitive development, as

reflected by assessments using two intelligence-testing instruments: the Wechsler Intelligence Scale for Children, an instrument used to identify learning disabilities, and the Test of Nonverbal Intelligence, an instrument used to assess the intellectual capacity in difficult-to-assess subjects, such as people who are bilingual or non-English speaking, learning disabled, learning impaired, or deaf.

Overall, the studies show that the best surrogate predictor of cognitive development and school performance is the child’s height-for-age z-score at 2 years of age—that is, the number of standard deviations that the height of that child falls from the mean height-for-age for other 2-year-olds in the study population. The height-for-age z-score at 2 years of age also correlates well with the burden of diarrhea between zero and 2 years of age. In other words, the larger z-scores reflect a greater burden of diarrhea in children prior to their second birthday.

When these findings are taken into consideration, the global disability from diarrhea (i.e., disability-adjusted life years, or DALYs) more than doubles. Given these circumstances, anything that improves the height-for-age score of children in a resource-poor setting, such as improved water supplies and sanitation or effective interventions such as micronutrients or vaccines, will likely reduce the devastating long-term consequences that appear to follow. (Dillingham and Guerrant, *The Lancet*, Volume 363, January 10, 2004, pp. 94-95)

To understand the mechanisms of and establish causality for the effects of diarrhea and enteric infections on physical and cognitive development, researchers must prove that specific interventions can alter the outcomes of diarrhea. This is precisely what research fellows, supported by Fogarty’s ITREID Program and by FIC/NIAID’s Actions for Building Capacity (ABC) effort, are doing. ABC Fellows Gerly Brito, M.D., Ph.D., and Bene Carneiro-Filho, M.D., launched an *in vitro* study to investigate how the amino acid glutamine and its stable derivative, alanyl-glutamine, enhanced the

Fogarty Fellows’ work suggests that the gene associated with Alzheimer’s disease may be protective against the negative impact of childhood diarrhea and enteric infection burden on cognitive development.

Fogarty Fellows from Ghana and the Philippines team up with Brazilian researchers to probe how diarrhea stunts mental ability.

repair of intestinal cell injury related to enteric infections.¹ Building on their work, ITREID Fellows Raul Destura, M.D., and James Amoah-Dankwa, M.D., showed that arginine and zinc further augmented glutamine-enhanced injury repair. ITREID Fellow Ping Chen, M.S., analyzed findings with his mentor Aldo Lima, M.D., Ph.D., showing that vitamin A and zinc improved intestinal barrier and absorptive functions as well as growth.² Integrating these concepts, ABC Fellow Ana Assreuy, Ph.D., collaborating with Michael Timko, Ph.D., in the biology department of the University of Virginia, is working toward the development of a potentially low-cost therapeutic—the use of biologically “engineered” plants for producing the peptide alanyl-glutamy-arginine as an adjunctive therapy for enteric infection and diarrhea-related injury of the intestinal mucosa.

Another team of ABC and ITREID Fellows is using a genetic approach to understand and elucidate the mechanisms and directional causality of the long-term effects of early childhood diarrhea burden on cognitive development. After working with ITREID Fellow Hong Zhang, M.D., to learn the technique of genotyping cheek cells, ABC Fellow Reinaldo Oria Barreto, D.V.M., of Brazil’s UFC used the technique to discover evidence that the presence of the Alzheimer’s disease–associated gene, apolipoprotein E4 (apoE4), tended to mitigate the negative impact of early childhood diarrhea and enteric infection on cognitive development. For example, when children who lacked the apoE4 allele experienced a heavy diarrhea burden, they responded similarly to adults with Alzheimer’s dementia. Alzheimer’s dementia, like early childhood diarrhea, affects only semantic fluency. Children with apoE4, the Alzheimer’s disease–associated allele, appeared to be “cognitively protected.” In other words, favela or shantytown children who experienced heavy diarrhea

burden but who expressed the apoE4 allele actually did better in testing and had more preserved semantic fluency scores than children without apoE4.

Overall, the work of the Fogarty Fellows and their mentors have shown that the devastating long-term impact of heavy diarrhea and enteric infection burdens in the critically formative first 2 years of life is of far greater



Children in Concalves Dias Favela in Fortaleza, Ceara, Brazil

importance than previously appreciated. A rare glimpse into the profound personal importance of this to favela children can be seen in the drawing (unavailable here) of Janaina (not her real name), age 9, who produced an im-

pressively detailed portrait of the beautifully dressed child she aspired to be, but without arms, signifying her subliminal sense of a total lack of empowerment to cope with the devastating reality of her life. “Our job is to speak out for Janaina and work diligently to see that her aspirations and hopes are restored,” stated Dr. Guerrant.

Whether novel treatments, such as micronutrients or oral rehydration and nutrition therapy, are pursued or simply improved water and sanitation are provided, the potential for these approaches to improve cognitive as well as physical development may have profound economic and human consequences. From another perspective, Dr. Guerrant argues, “While the impact may be measured in DALYs or economic productivity and development, it is the threat to our humanity that is even more alarming than the threats to our societal development and physical survival on this shrinking planet if we fail to recognize and ameliorate the diseases of poverty.” ♦

¹ Carneiro-Filho, et al., *Curr Infect Dis Rep*, 5:114-9, 2003; Carneiro-Filho B, Oria RB, et al., *Nutrition*, in press, 2004.

² Chen P et al. *J Pop Nutr Research*, 2004.

HOBY Sparks Hope at the 2004 World Leadership Congress

On July 26, FIC Acting Director Sharon Hrynkow, Ph.D., spoke on global health to an audience of 500 high school sophomores from around the world, including several from Iraq, at the Hugh O'Brien Youth Fellowship (HOBY) 2004 World Leader Congress. Joining Dr. Hrynkow were colleagues from National Public Radio, the National Academy of Sciences, and the University of Virginia. Dr. Hrynkow focused on AIDS, trends in obesity worldwide, and tobacco; however, students also raised questions about mental illness and depression and suicide. "What I tried to do," Dr. Hrynkow remarked, "was to raise their awareness about the connectedness of global and local health, then to persuade all 500 of them to go into careers that would contribute to improving world health, via business, journalism, or medicine and science."

The 2004 World Leadership Congress, held in Washington, D.C., was supported by the Hugh O'Brien Foundation. Hugh O'Brien, better known for his acting role as Wyatt Earp, began the HOBY program in 1958 after spending time in Africa with Albert Schweitzer, M.D., a Nobel laureate, physician, and great humanitarian. While in Africa, Schweitzer impressed upon Mr. O'Brien that the most important element of education is to teach young people to think for themselves. That thought became the cornerstone for HOBY, which carries out a mission of seeking out, recognizing, and developing youth leaders. The HOBY program reaches out on a national level to every public and private high school as well as conducts HOBY-style programs internationally, including efforts in Bolivia, Canada, Mexico, China, Korea, Taiwan, and Israel. Volunteers, schools, students, and alumni across the country have caught the HOBY spirit, making it a much acclaimed youth leadership development program. Visit the website at <http://www.hoby.org>. ❖

Calendar

September 14—FIC Advisory Board meeting.

September 15—Centers on Global Health: An Exploratory Mission. FIC convened a consultation to explore a program concept related to the development of centers for global health. At the meeting, FIC grantees from the United States and abroad joined NIH colleagues and other professionals from science-funding agencies to consider if and how FIC could enhance its research training programs through an effort to pair U.S. and foreign institutions and provide assistance for ancillary activities in support of the research enterprise.

October 12–14—FIC convened principal investigators and major foreign collaborators in two programs focusing on the neurosciences—the International, Clinical, Operational and Health Services Research and Training Award (ICHORTA) and Brain Disorders in the Developing World Program—in a meeting at The Hyatt in Bethesda, Maryland.

October 25–26—FIC convened principal investigators and major foreign collaborators in its International Bioethics Education and Career Development Program Meeting, which also included bioethics training faculty of human genetics research training programs.

October 26—Workshop: Inviting Public Participation in Clinical Research—Building Trust Through Partnerships, sponsored by the NIH Council of Public Representatives in collaboration with the NIH Director's Public Trust Initiative.

November 11–16—Mexico Summit of Health Ministers/Global Forum for Health Research. The Summit will bring together Ministers of Health from around the world to consider the Millennium Development Goals related to health and the research agenda that, if implemented, would allow nations to meet these goals. At the concurrent meeting of the Global Forum for Health Research, a range of issues of importance to FIC and NIH will be addressed. Several FIC representatives will join the Forum discussions.

December 6—World Health Organization Director-General Dr. Jong-Wook Lee will present on "Health Research Challenges in the 21st Century" at the annual David Barmes Lecture on Global Health at Masur Auditorium. FIC and the National Institute on Dental and Craniofacial Research cosponsor the Barmes Lecture. ❖



Dr. Ala'adin Al-Alwan (r), Iraqi Minister of Health, with NIH director Dr. Elias Zerhouni looking on, expresses appreciation for a productive set of meetings and a warm welcome.



Ms. Rend Rahim Francke, Iraqi Ambassador-Designate to the United States, gave impassioned remarks of gratitude to the American people for their great sacrifice in saving the Iraqi people. Ms. Francke holds degrees from Cambridge University and the Sorbonne.



Ms. Rend Rahim Francke, Iraqi Ambassador-Designate to the United States; Dr. Ala'adin Al-Alwan, Minister of Health of Iraq; Dr. Elias Zerhouni, Director, National Institutes of Health; Dr. Anthony Fauci, Director, National Institute of Allergy and Infectious Diseases; Dr. Sharon Hrynkow, Acting Director, Fogarty International Center

Iraqi Minister of Health Visits NIH

On his 3-day visit to Washington, D.C., newly appointed Minister of Health Dr. Ala'adin Al-Alwan visited with Secretary Tommy Thompson and with each of the affiliated agencies of the U.S. Department of Health and Human Services (DHHS), capping off his visit with an afternoon at NIH. During his visit with NIH Director Elias Zerhouni, M.D., the Minister of Health expressed the urgent needs of the Iraqi people for basic health care services and, looking toward the future, identified areas of potential research cooperation. The areas identified for exploration included taking advantage of existing NIH training modules and making better use of the Internet to train physicians, physician scientists, and nursing personnel. Enhanced training in epidemiology was cited as another priority. FIC Acting Director Sharon Hrynkow, Ph.D., outlined some of the long-term FIC/NIH programs as well as the shorter-term programs supported by other organizations. At an evening reception held at the Lawton Chiles International House ("Stone House") in honor of the Minister and the Ambassador-Designate, Dr. Zerhouni praised Dr. Al-Alwan and Ms. Rend Rahim Francke, the Iraqi Ambassador-Designate to the United States, for their bravery in taking on the many challenges facing them as Iraqi leaders. Dr. Zerhouni also pledged support on behalf of Secretary Thompson in working with the Iraqi people to assist in improving the health care and research enterprise for the benefit of all. ❖

Partnerships for Progress in Global Health

Tackling Brain Drain

FIC and the National Institute of Environmental Health Sciences (NIEHS) are launching a pilot to establish the Alumni Association of Visiting Fellows in five countries: Brazil, China, India, Mexico,

and South Africa. The Association will assist former NIH-trained foreign scientists—former Visiting Fellows and FIC-supported trainees—from the participating countries to overcome one of the major challenges facing them on their return home: isolation. "We have heard loud and clear from junior scientists about to return home," said FIC Acting Director Sharon Hrynkow, Ph.D., "that efforts are much needed to support them as they work to meet with each other on return home. Sharing experiences as well as practical and technical information will form an important component of each of the Alumni Association nodes." The Visiting Fellows Alumni Association is also intended to provide an avenue for FIC and NIH to maintain contact with former trainees and to facilitate continued interactions between the U.S. laboratory and the newly independent scientist upon return home. In one country, India, the Association will also provide support to link CDC-trained scientists into the network. The criteria for country selection include: (1) a critical mass of NIH Alumni and FIC-supported trainees in a country/region; (2) interest by an international agency/institution in serving as the focal point of the pilot Alumni Association to ensure its long-term success; and (3) interest by a FIC grantee with programmatic involvement at a potential host site in serving as the U.S. partner in the effort. Five FIC-supported AIDS International Training and Research Programs will serve as the U.S. partners in this activity.

Scaling Up Treatment for the Global AIDS Pandemic

FIC teamed up the NIH Office of AIDS Research with the Bill and Melinda Gates Foundation to support a study by the Institute of Medicine on antiretroviral therapy use in resource-poor settings. The final report, released in July 2004, made the following recommendations: (1) antiretroviral therapy (ART) scale-up efforts should proceed immediately through coordinated actions by national governments, donors, international organizations, and nongovernment organizations; (2) donors should commit to funding of ART strategies on the decade time-scale; (3) tuberculosis programs should continue to be supported in

conjunction with HIV/AIDS programs, given the number of dual-infected individuals; (4) expertise from AIDS training programs that are already in place should be used to inform and support the development of strategies to train clinicians; (5) monitoring and evaluation efforts must be incorporated in programs at their inception; and (6) operational research must be part of a comprehensive approach. FIC is considering the most appropriate next steps on this critical topic.

Strengthening Links Between Research Training and Schools of Public Health

FIC and its grantees, the Schools of Public Health at the University of Illinois at Chicago, the University of North Carolina at Chapel Hill, and John Hopkins University are leading an effort to enhance public health training in key countries. Recognizing that professionals trained in research methodologies—including epidemiology, statistics, and other disciplines—are often the same individuals who play a key role back home in shaping the public health training enterprise, FIC has linked its training programs in key countries with embryonic efforts to build schools of public health. On a pilot basis, FIC grantees have been supported to establish such schools, or master's of public health programs that will lead to schools, in Malawi and most recently in Russia. Another new entity, supported by FIC and its grantees in the Environmental and Occupational Health Training Program, played a critical role in establishing a new virtual school of public health in Ukraine (see next article). New efforts involving CDC and several Deans of schools of public health around the United States are underway to consider establishing a school of public health in India. FIC's Zakir Bengali, Ph.D., Program Officer for South Asia, participated at the key meeting on this topic on September 16 in New Delhi (see article on page 5). As details about individual programs are collected, FIC will share information on these new efforts that link our long-standing training programs more closely with public health needs and with training programs in low- and middle-income nations.

New School of Public Health Opens in the Ukraine: A Model for International Cooperation Building on FIC Research Training Programs

A new School of Public Health at the National University of Kyiv-Mohyla Academy (NaUKMA) opened its doors on August 31 in Kyiv, Ukraine, with a total of 13 students in its master's of public health management program, "Management of Public Health Organizations." The new public health management program is the joint effort of NaUKMA; the Kyiv Institute of Postgraduate Medicine; the University of Maastricht's School of Public Health, The Netherlands; and long-term partner, the University of Illinois at Chicago School of Public Health (UIC SPH). UIC SPH is also a long-term Fogarty grantee.

During the past decade, UIC SPH's collaborative programs in the Ukraine have been supported by grants from FIC's International Research and Training in Environmental and Occupational Health Program. NIH's National Institute of Environmental Health Sciences is FIC's long-standing partner in this effort. UIC SPH's major collaborative research program has been "Family and Children of Ukraine," a study that is the Ukrainian component of the European Longitudinal Study of Pregnancy and Childhood. UIC SPH's research program on the environmental health of children in Mariupol, Ukraine, was selected as the joint U.S.-Ukrainian environmental health study under the Kuchma-Gore Commission. UIC SPH is also providing data management support to the U.S.-Ukraine binational study "Thyroid Cancer in Children Following the Chernobyl Reactor Accident."

Susan Scrimshaw, Ph.D., Dean of UIC SPH, joined Viatcheslav Brioukhovetsky, Ph.D., President of NaUKMA, and the Honorable Volodymyr Lytvyn, Speaker of the Ukrainian Parliament on the dais at the commencement ceremony for NaUKMA SPH and delivered a welcome address from UIC SPH. Dr. Scrimshaw and Daniel O. Hryhorczuk, M.D., M.P.H., Professor and Director of the Great



Left to Right: Dr. Daniel O. Hryhorczuk, Professor and Director, Great Lakes Centers at UIC SPH; Dr. Irena Griga, Dean, NaUKMA-SPH; and Dr. Susan Scrimshaw, Dean, UIC SPH.

Lakes Centers at UIC SPH, were also given the honor of delivering the first lectures in the first class at NaUKMA SPH—Behavior and Health and Overview of Epidemiologic

Study Designs. Mr. Alexander Zvinchuk, a Fogarty trainee and a doctoral candidate at NaUKMA, will be teaching the biostatistics module in the new curriculum. ❖

Mental Health

(Taken from Prevention of Mental Disorders: Effective Interventions and Policy Options, A Report of the World Health Organization, 2004, Department of Mental Health and Substance Abuse and http://www.who.int/mental_health/en/.)

- Approximately 450 million people worldwide suffer from mental and behavioral disorders, and one in four persons will develop one or more mental and behavioral disorders during their lifetime.
- Worldwide, 5 of the 10 leading causes of disability and premature death are from psychiatric conditions; of the total years lost to disability from all diseases and injuries, expressed in disability-adjusted life years (DALYs), 13% are due to neuropsychiatric conditions. This number is expected to increase from 13% to 15% by the year 2020.
- Most middle- and low-income countries devote less than 1% of their health expenditure to mental health. Consequently mental health policies, legislation, community care facilities, and treatments for people with mental illness are not given the priority they deserve.
- Many risk factors for mental disorders—child abuse, discrimination, violence, poverty, lack of access to education, and some biological factors—are malleable and therefore are potential targets for prevention and promotion measures. Accordingly, prevention efforts need to be sensitive to different cultures, make optimal use of limited resources, and give priority to preventive programs and policies that show scientific evidence of their effectiveness.
- Barriers to effective treatment of mental illness include lack of recognition of the seriousness of mental illness and lack of understanding about the benefits of services. Policy makers, insurance companies, health and labor policies, and the public at large all discriminate between physical and mental problems.

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