

nih record



ABOVE • New research in women's health is discussed at a recent ORWH-sponsored symposium. See story, p. 9.

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'More Biosocial Research'

PIH's Farmer Speaks on Antibiotic Resistance

By Belle Waring

The world is hungry for heroes—they put us in touch with our dreams, our own heroic potential. The greatest among them are also great teachers. They have the magic.

Dr. Paul Farmer is one of them.

"There is so much promise now for medicine and for global health," he recently told a packed house in Masur Auditorium. His lecture, "Community-Based Care for Infectious Disease and the Future of Antibiotic Resistance," was part of the Grand Rounds Great Teachers series.

A distinguished physician, medical anthropologist and author, Farmer's groundbreaking model of community-based care in areas of great poverty has proven medically effective and cost-effective—"a concept once thought impossible," said NIAID director Dr. Anthony Fauci in opening remarks.

He called Farmer "a global hero and a legend."

Addressing inequalities in health-care access is the mission of Partners In Health (PIH), the nonprofit organization that Farmer co-founded in 1987. In Haiti, Peru, Siberia, Rwanda, Lesotho and Malawi, as well as inner-city Boston, PIH provides



Dr. Paul Farmer

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Moonlighting Author

NIDCR's Kuska Writes Second Hoops Book, A Third Planned

By Rich McManus

Just before Christmas, Bob Kuska, a science writer at the National Institute of Dental and Craniofacial Research, published his second book in 4 years on the topic of basketball in America.

The new volume, *Cinderella Ball: A Look Inside Small College Basketball in West Virginia*, was



Author Bob Kuska

published by the University of Nebraska Press and follows a plot line similar to the movie *Hoosiers*. In that film, explains Kuska, a small high school team that no one expects to accomplish anything winds up in the state championship game.

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A Year of Events

'Evolution Revolution 2009' Celebrates Darwin's Birth, Book

By Karin Jegalian

This year marks the 200th anniversary of Charles Darwin's birth and the 150th anniversary of the publication of his masterwork, *On the Origin of Species*. The book famously introduced the concept of evolution by natural selection, the principle that has organized the study of biology ever since.

A series of events at NIH, collectively called Evolution Revolution, will commemorate these anniversaries and highlight the importance of evolution in current studies of biology and medicine.

The celebration is designed to engage everyone from intramural scientists to the public and young students. Events will include lectures, exhibits, performances and publications.

For Thursday, Feb. 12, Darwin's birthday, NHGRI is arranging a morning symposium on evolution to be held at Masur Auditorium and

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medical care and social and economic support for patients and their families. Those who cannot pay—the majority—receive care for free.

The keystones of the program are community health workers, the *accompagnateurs* (“accompanists”) who provide health services and support for their neighbors. The French/Creole term comes from Haiti, the poorest country in the western hemisphere and the first locus of PIH.

Because *accompagnateurs* are trained to provide comprehensive support, assessment and monitoring, they increase treatment compliance and improve health outcomes.

Importantly, they are not volunteers, but employees, part of the community’s economic fabric. In addition to delivering primary care and treatment for infectious diseases such as HIV/AIDS and tuberculosis, PIH is an organization that generates local jobs.

“It was Paul’s groundbreaking model in Haiti upon which we actually based the President’s Emergency Plan for AIDS Relief (PEPFAR),” Fauci said.

PEPFAR is a U.S.-backed international health initiative for HIV/AIDS prevention, treatment and care. It is the largest such funder in the world.

Thanks to PEPFAR and the Global Health Fund, Farmer said, “in the last 5 years there’s been a real sea change...having a strategy to slow acquisition and transmission of drug-resistant pathogens is a ranking priority, and we [at PIH] are very proud to be working on this with the NIH.”

Farmer’s teaching style is celebrated for its wit, boldness and depth. Some lecture highlights:

Bug vs. Drug: What Is Resistance?

If you’ve ever gone to bed feeling chipper and awakened with a sore throat, you know how rapidly germs can hit.

Compared to humans, germs reproduce rapidly and adapt swiftly to their environment. They are quick to make “mutations”—changes that help them survive drug treatment.

Such survivor germs are “drug-resistant.” As they pass on their hardiness to their offspring, they produce generations of bad bugs—a potential source of epidemics and a global problem.

For example, the notorious methicillin-resistant *Staphylococcus aureus* (MRSA) can no longer be treated with methicillin. It takes vancomycin, an even stronger drug, to knock it out.

If MRSA mutates to resist vancomycin, we can foresee an escalating game of catch-up.

Some human behaviors aren’t helping. Physicians wrongly prescribe antibiotics for common colds (viruses don’t respond to antibiotics). Patients can be non-compliant with treatment.

Why is it so important to take your meds according to plan? You need to kill off all the bugs. If you don’t, the ones that survive are the most resistant. They reproduce so that the next time they strike, you have a more resistant batch, then you have to take another, or stronger, drug.

For millions of people with HIV, TB, malaria and other chronic infectious diseases, drug-resistant germs can be life-threatening.

That’s the bad news. Here’s the good: The Partners In Health model of community-based care has proven effective in increasing patient compliance and improving outcomes.

• How did Farmer, now on the faculty of Harvard Medical School and Brigham and Women’s Hospital, combine academic medicine with work in Haiti and other areas? He urged students and trainees to “think outside the box” and to question “not with rhetoric, but rather with programs, the conventional wisdom of the time.”

• Dual training in medicine and anthropology helped him “in contemplating antibiotic resistance in all its complexity,” Farmer said. “There has to be engagement beyond the physician... What structures might be put in place so that the drugs that we have last longer?” That’s where community-based care comes in.

• Hospital doctors in poor areas may admit up to 80 patients per night, yet lack the tools to save them. “That would drive anyone away from clinical medicine,” Farmer noted. Give staff the tools they need and you’ll see “a huge effect” on recruitment and retention.

• Some Haitian patients who thrived and became *accompagnateurs* themselves traveled with Farmer to speak at Harvard. “I want to thank all you bourgeois people for your help,” said one, getting a big laugh.

• With HIV now a shrinking epidemic in Haiti, Farmer said, it’s crucial to convey to trainees how “disease-specific vertical interventions”—such as a PEPFAR-funded AIDS program—may also strengthen primary care.

• Can Farmer’s model be replicated? Two years after Haitians trained by PIH went to Rwanda to build infrastructure, offer services and train local people, fully 98 percent of 223 patients who had been on community-based anti-retroviral therapy during that time had a suppressed HIV viral load, at an effective cost.

• In the U.S., “among some patient subsets, a Haiti-style model can save their lives.”

In conclusion, Farmer said, “You can’t understand the phenomenon of drug resistance without having a social-science perspective. These mutations [in microorganisms] are created by human actions. Biosocial research that is quantitative, rigorous and goes from genotype to social policy is the only thing that can reveal how this all works.”

A rule of great teaching is to love your material. That love is contagious and students catch it. After the talk, Farmer was mobbed by young people. Half an hour later, his colleagues were still trying to draw him away.

“Otherwise,” one said, “Paul would be here until dark. Look at these kids. He’d answer every one of them.” 🎤