

Worldly Pursuits

ONE COUNTRY'S PROBLEMS ARE THE WORLD'S. INTERNATIONAL INITIATIVES, A CENTRAL PART OF THE UCLA SPH STRATEGIC PLAN, RECOGNIZE THE INTERCONNECTEDNESS OF NATIONS AND THE NEED FOR COOPERATIVE ACTIONS TO ADDRESS HEALTH CONCERNS.



School's Global Health Program Transcends Borders

As the world braces for the possibility of a pandemic

Above: Dr. Anne Rimoin, assistant professor of epidemiology at the school, spends approximately half of her time in the Democratic Republic of Congo, where she heads the first study to examine the dramatic changes in the epidemiology of monkeypox in the last 20 years.

influenza outbreak, the UCLA School of Public Health is developing the basis for a global laboratory network that will provide rapid, accurate and up-to-date information critical for dealing with avian flu and other deadly infectious diseases.

While the high-throughput laboratory is being spearheaded by Dr. Scott Layne, associate professor of epidemiology, Layne's colleague in the school's Department of Epidemiology, Dr. Anne Rimoin, is spending approximately half of her time in remote sections of the Democratic Republic of Congo, attempting to elucidate the epidemiology of monkeypox and viral hemorrhagic fevers through active disease surveillance with subsistence hunters and other individuals who are at high risk for cross-species disease transmission.

Dr. Jørn Olsen, professor and chair of the department, continues to head the closely watched Danish National Birth Cohort Study, which is following 100,000 children from fetal life into adulthood in an effort to find early determinants for the most common childhood health problems, from obesity and asthma to behavioral conditions. Dr. Alex Ortega, associate professor of health services, has been leading a team of community leaders and health professionals on a series of excursions to Cuba in an effort to apply successful aspects of that country's health care system to improving health in South-Central Los Angeles.

These are but a few illustrations of the school's vibrant program in global health – a central part of the school's Strategic Plan, which states: "Each day it becomes more and more evident that the world is actually one global community. With the farthest reaches of the world no more than a plane ride away, it is not enough to simply ensure the health of individual countries. In fact, working to ensure the health and well being of all people throughout the world is an important step toward stability and peace."

The school's international reach is considerable. Dozens of UCLA School of Public Health faculty are active in approximately 70 countries outside of the United States. Each year, approximately 150 students are enrolled in the school from other nations, the majority of whom return following graduation to apply their education in their native countries. For many of the school's students, funding opportunities are available for overseas field internships through programs established by generous donors including Robert Drabkin, Monica Salinas and the Bixby Foundation (see page 17). Grants from the Fogarty International Center of the National Institutes of Health bring students from other countries to the school for training in controlling the HIV/AIDS epidemic and addressing environmental and occupational issues in Mexico and Latin America.

There are many important reasons for the school to emphasize global health. "Infectious diseases have the potential of spreading throughout the world, and some of the health problems we have had in the industrialized countries are now being exported to developing countries," says Olsen. "For these and other reasons, we must spread our expertise to help solve health problems in all parts of the world."

Recently, the school was awarded a three-year global health training grant from the Fogarty International Center, led by Dr. Gail Harrison, professor of community health sciences, and Olsen. Among other things, the grant provides funding for seminars, guest speakers, and the establishment of a curriculum for students and postdoctoral fellows who want to specialize in global health. "UCLA has a unique opportunity to provide expertise in this field," says Olsen. "We have so many students coming from abroad, spreading their experience and providing research opportunities in their home countries as well as working with the students and faculty here."

Recent worldwide attention focusing on the threat of highly pathogenic avian influenza – a rapidly mutating virus related to other influenza viruses that infect wild migratory birds and farm animals and, officials fear, could spread to humans, sparking a pandemic – has underscored the need for a high-throughput automated laboratory long advocated by

Layne. "In an outbreak situation, rapid, accurate and up-to-date information on the geographic location of avian influenza and on the genetic mutations taking place will be essential for infection control and public health interventions," Layne notes.

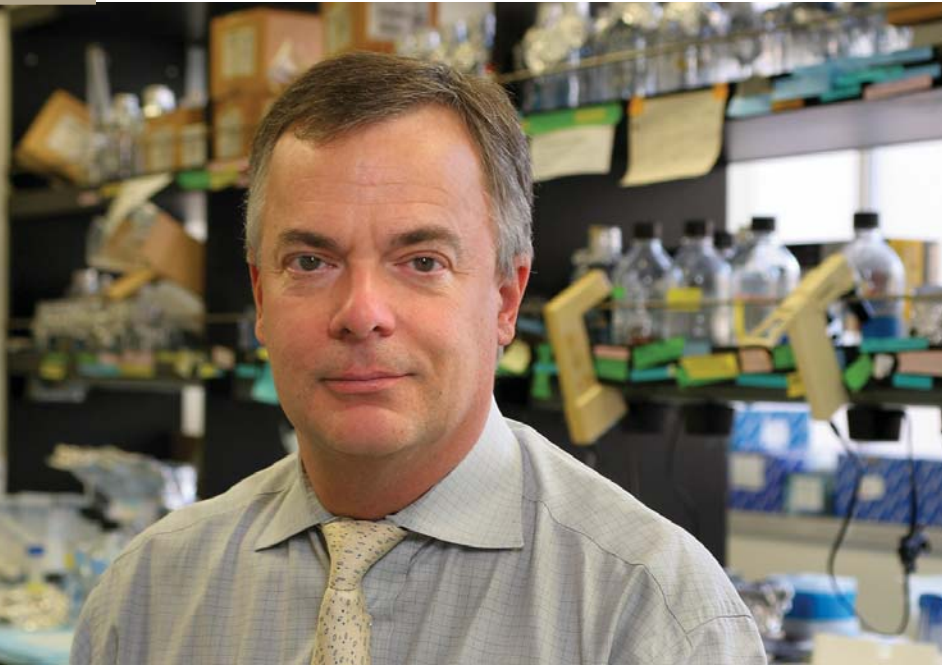
The global laboratory network, capable of high-speed, high-volume epidemiologic and genetic analyses of deadly human and animal pathogens, is based on pilot work Layne completed with colleagues at Los Alamos National Laboratory a decade ago and applies to infectious disease control efforts the same type of high-throughput technology that pharmaceutical companies use for drug discovery. It would increase the annual worldwide capacity for detailed analysis of influenza gene samples by 10-fold, and would enable much more rapid assessment of the strains and their effects on populations. "This will give us near real-time surveillance for avian flu and, potentially, other emerging infectious diseases," Layne says. "The question is, Do we count on human hands to do what needs to be done, or do we take advantage of technology?" Dean Linda Rosenstock and Dean's Advisory Board member Cindy Horn have spearheaded efforts to secure private and federal funds to launch the global laboratory network. The U.S. Congress included \$6 million in the Defense Appropriations bill to establish such a network, and funding to start the initiative is anticipated in 2006.

Sometimes, as in the case of the school's involvement with the Medical Education Cooperation with Cuba (MEDICC), global health initiatives can serve to improve the health of populations at home. MEDICC was founded in 1997 as a bridge between U.S. and Cuban clinicians, faculty, students and researchers; the non-governmental organization promotes sharing of medical practice education, policies and research that contribute to improving health



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A new high-throughput global laboratory network, based at the school and led by Dr. Scott Layne (above), promises to increase the annual worldwide capacity for detailed analysis of influenza gene samples, including avian flu, by 10-fold.

care quality and accessibility in both countries. Ortega has headed a team of UCLA School of Public Health faculty and doctoral students, along with faculty from Charles Drew University, that has been accompanying a group of community health leaders from South-Central Los Angeles on a series of visits to Cuba; the MEDICC project aims to understand how successful aspects of Cuba's health care system could be applied to tackling the health problems of South-Central Los Angeles.

"The Cubans are recognized in the international health community for having highly positive health indicators despite considerable social disadvantage and limited resources," Ortega notes. "These indicators are often attributed to the strengths of their primary care system, which is very integrated and community-based."

We are one global community, but when looking at the state of that community's health, there is a sharp divide between the developed and developing world. In the developing world, infant mortality is 10 times greater than in the developed world, and maternal mortality 100 times greater. Life expectancy, more than 70 years in the developed world, is fewer than 50 in parts of the developing world. Poor countries that continue to face the scourge of infectious diseases are also beginning to bear the burden of emerging chronic diseases. The more effective treatments for HIV/AIDS that have been brought to populations of wealthier countries have yet to make a dent in the poorest ones: In 2004, the disease took an estimated 2.3 million lives in sub-Saharan Africa.

Globalization has had little impact in rural Africa, where Dr. Charlotte Neumann, professor of community health sciences, has concentrated her efforts; while the epidemic of obesity plagues the developed world, the problems in much of Africa are related to malnutrition and micronutrient deficiencies. In September, Neumann convened a workshop in conjunction with the 18th International Congress of Nutrition in Durban, South Africa. The meeting was an outgrowth of research by Neumann's group that has shown substantial benefits on health, growth, cognitive function and school performance from intervention feeding with animal-source foods to improve the diet quality of micronutrient-deficient young children in developing countries. "The challenge is to develop feasible, affordable and sustainable programs to provide more meat and milk in the diets of children globally," Neumann says

In the Democratic Republic of Congo (DRC), Rimoin's study is the first to examine the dramatic changes in the epidemiology of monkeypox in the last 20 years, during which a civil war that claimed millions of lives drove segments of the population into the rainforest and led them to become exclusively reliant on bushmeat, causing a substantial increase in the number of cases of the deadly disease.

Since 2002, Rimoin has developed a research infrastructure that now features a large team of disease surveillance officers who help to reinforce the DRC's existing Ministry of Health system. With her colleague Dr. Nathan Wolfe at Johns Hopkins University, she has expanded the work to include a cohort of hunters who will be followed every six months and given filter paper to obtain dried blood spots of any animals they kill, as a way of enabling the researchers to track the cross-species transmission of disease. "Because there has been no money and no motivation in the system to report these cases, it's been impossible to understand the extent and epidemiological nature of monkeypox," Rimoin explains. "No one had been out there for years. Establishing this research infrastructure has been helpful not only for studying the epidemiology of human monkeypox, but also for its potential to be expanded to the study of other emerging diseases."

The Democratic Republic of Congo is a long way from UCLA, but Rimoin insists a strong global health program is essential for a leading school of public health. "Health problems transcend national boundaries and are influenced by circumstances and experiences in other countries," she says. "The problems of one country are problems for the world. An international health program looks at health problems from a global perspective and determines how to address them with cooperative actions and solutions."