More than 20 years after the first AIDS case was described, the worldwide HIV epidemic seems unlikely to go away any time soon. Highly active anti-retroviral therapy (HAART), while potentially life-saving, requires a complicated medication-taking regimen and financial wherewithal, posing significant barriers, particularly in the developing world. Meanwhile, scientists continue to be frustrated in their efforts to develop a vaccine. Last year alone, HIV claimed 3 million people worldwide. Forty-two million are living with the virus.

While much attention over the last two decades has focused on finding a "cure" for AIDS, the battle to control the spread of HIV has been waged by public health researchers and practitioners. Their ledger includes both victories and setbacks. In the United States, public health strategies initially contributed to a sharp reduction in the incidence of HIV transmission among gay males, but more recently the nation has seen an ominous resurgence of new HIV cases, with increases among gay men as well as other population groups. Abroad, public health initiatives in several countries have dramatically curbed the epidemic, but elsewhere rates are soaring.
In 1984, before HIV had even been identified as the culprit, the Multicenter AIDS Cohort Study (MACS) was launched as the first and largest study to examine the natural history of AIDS. MACS has been ongoing at four institutions including UCLA, which runs the largest site under the leadership of Dr. Roger Detels, professor of epidemiology at the School of Public Health. More than 5,000 gay men have participated in the study, which has contributed landmark findings on the virologic, immunologic, psychosocial and neurologic aspects of the disease.

In 1989, Detels published a controversial paper demonstrating that HIV could be isolated in MACS participants who tested antibody-negative. Subsequently, he discovered that the ability to isolate the virus ceased among men in this group who did not continue to have multiple sexual partners. “If this had been a latent infection, their sexual activity should have had no bearing on the ability to isolate the virus,” he notes. “I realized that these men were probably clearing the virus due to a combination of factors, including some sort of natural protective mechanism. At the same time, we continued to isolate the virus in the antibody-negative men who remained sexually active with multiple partners. That said to me that these men were somehow clearing the virus and then being re-infected.”

Detels’ observation that some men are resistant to HIV infection, borne out by other research groups, identified a particularly interesting population that Detels has continued to study. “The idea is that if we can identify what the factors are that allow these men to clear the virus, perhaps we can confer those factors on individuals who do not naturally have this resistance,” he explains.

Four years after MACS began, another program was established under Detels’ leadership that continues to be an invaluable asset in the international fight against HIV/AIDS. The UCLA/Fogarty AIDS International Training and Research Program has provided master’s- and doctoral-level training to more than 130 health professionals from China, India, Brazil, Thailand, Vietnam, Cambodia, Myanmar, Indonesia, the Philippines and Laos, with these students then returning to their home countries to serve in leadership roles. Detels continues to consult and collaborate with many of his former students on HIV/AIDS-related research and policy development in their respective countries. The Fogarty program has also proved to be an invaluable resource for many of Detels’ UCLA colleagues in the field of HIV prevention. Dr. Mary Jane Rotheram-Borus, director of the Center for HIV Identification, Prevention, and Treatment Services and a professor in the school, has led about a dozen large intervention studies in the last decade for high-risk U.S. adolescents, four of which have
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**Zunyou Wu**
M.D., Ph.D. ’95

Wu, one of China’s leading HIV/AIDS researchers, is director of the Division of Health Education and Intervention of the country’s National Center for AIDS/STD Control and Prevention. He received his Ph.D. in epidemiology from the school as part of the UCLA/Fogarty AIDS International Training and Research Program, and has been involved in HIV prevention intervention research focusing on high-risk groups in China since 1994. Along with his former advisor, Dr. Roger Detels, Wu was the first to report HIV infections among former plasma donors in China in 1995. Wu and Detels then conducted a survey of former plasma donors and their family members, followed by a program to promote condom use in that population. Studies by Wu and Detels of drug users in southern Yunnan Province in 1993 led the researchers designing a community intervention program that successfully reduced the incidence of new drug users by three-fold compared with control villages. Wu was the first to demonstrate that female sex workers in China could be reached for behavioral studies and interventions.

been designated by the Centers for Disease Control and Prevention as “effective programs to be replicated.” These programs have demonstrated that even in the high-risk groups, people are interested in and able to change their behaviors, Rotheram-Borus notes.

But, she adds, the most severe HIV problems are currently in nations outside the United States, “and to really make a difference internationally, you have to have skilled collaborators in the country that’s affected.” In recent years, Detels has brought Rotheram-Borus together with graduates who were heading HIV programs in China, India and Uganda, enabling her to launch similar interventions abroad with critical assistance from collaborators who help to tailor the programs to the culture and needs of the population. “The existence of UCLA/Fogarty program graduates in leadership positions as all of these countries has allowed a lot of us, in a short period of time, to do important work that would not have been possible without the pipeline established by the UCLA/Fogarty program,” Rotheram-Borus says.

The importance of cultural factors in HIV prevention efforts is illustrated by differences in countries’ approaches to sex. “The tradition in much of Asia has been that men are expected to have multiple partners, while women are not,” Detels says. He notes that Thailand and Cambodia have developed strategies based on this cultural acceptance by focusing on the class of women who are sex workers in brothels. “That has a very important cultural implication for control of the epidemic, because if most of the HIV transmission is occurring through brothels, you can attempt to control its spread by putting economic pressure on the owners of establishments to force clients to use condoms,” Detels says. Both countries have done just that, developing 100 percent condom-use programs that have resulted in a downturn of the epidemic. On the other hand, in countries that have attempted to suppress commercial sex rather than developing this practical approach, interventions must be directed at independent sex workers, who have little power in their relationships with clients; and at a client group that is difficult to identify.

Dr. Donald Morisky, professor of community health sciences at the school, has similarly concluded that efforts to change individual behaviors to reduce the spread of HIV are far more effective when supported by the health care structure and environmental factors. In the Philippines, Morisky has found a substantial reduction in STD rates when commercial establishments that employ sex workers are required by the government to ensure that the women are registered and undergo bimonthly examinations at the social hygiene clinic. Morisky, who has also had an active HIV/AIDS research program in Thailand, has found that training the managers of these establishments in HIV prevention strategies – including the display of safe-sex materials – can also make a major difference, particularly when they are made aware of the economic impact of adopting such strategies.

The UCLA/Fogarty AIDS International Training and Research Program has made an enormous impact by providing graduate education to health professionals who return to their home countries to serve in leadership roles.
such as methamphetamine have on the duration and type of sex and its effect less likely to include communication about precautions? What effect do drugs Gorbach notes. Among the questions that interest her: Is a casual encounter men who have been together and monogamous for the past 10-15 years?" Anal intercourse is considered a high-risk behavior, but what if it's practiced by individual only tells part of the story," Gorbach says. "For example, unprotected in risky behaviors and a disease is transmitted. "Research that focuses on the make a sexual encounter more likely to be one in which the individuals engage these behaviors in the context of partnerships – seeking to identify factors that Gorbach's focus is on the risk behaviors that expose individuals to sexually transmitted infections, including HIV. But unlike many researchers, she analyzes these behaviors in the context of partnerships – seeking to identify factors that make a sexual encounter more likely to be one in which the individuals engage in risky behaviors and a disease is transmitted. "Research that focuses on the individual only tells part of the story," Gorbach says. "For example, unprotected anal intercourse is considered a high-risk behavior, but what if it's practiced by men who have been together and monogamous for the past 10-15 years?"

More nuanced relationship dynamics can also play a role in the risk level, Gorbach notes. Among the questions that interest her: is a casual encounter less likely to include communication about precautions? What effect do drugs such as methamphetamine have on the duration and type of sex and its effect

**Taigy Thomas, M.A.**

Undergraduate studies at UC Irvine proved to be an awakening for Thomas. "Although I noticed the lack of equity in many areas of our society – whether it is access to services, education, or jobs – I hadn't previously grasped how social injustice affected the health of minority groups," she says. "The more I heard about the proliferation of HIV rates in communities of color, the more I got interested in health experts’ ability to assist in the management of the disease."

While pursuing her M.A., Thomas worked as a health educator at UC Irvine, with sexual health as her primary topic of interest. She became a state-certified HIV/AIDS risk assessment counselor and worked in the campus’s HIV clinic, ultimately as the coordinator of HIV testing. As a doctoral student at the UCLA School of Public Health, where she is developing her HIV research under the guidance of Dr. Donald Morisky, Thomas is also serving as an instructor for an undergraduate "Life Skills" course for women, offered through the Arthur Ashe Student Health & Wellness Center. "I am continually amazed at how components of our identity such as ethnicity, socioeconomic status and gender influence our thoughts, beliefs and behaviors regardless of our knowledge," Thomas says, "especially as they relate to sexual risk-taking."

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**Dr. Donald Morisky,** shown with doctoral student James Jacobs have been funded by the UCLA Globalization Research, Centers-Africa to work with the Uganda Ministry of Health in assessing the knowledge, attitudes, beliefs and practices of students, teachers and administrators in more than 70 high schools. Morisky and Jacobs recently went to Uganda to share the results of their surveys with members of the Ministry of Education and discuss potential ways to revise curricular content based on the findings. "Uganda is one of the world’s success stories with regard to reducing the prevalence of HIV/AIDS – from about 25 percent to 12-15 percent," Morisky notes. "That’s due to a very concerted effort on the part of the government and non-governmental organizations, early involvement when they saw the epidemic coming, and a proactive educational program in the schools."

Successful campaigns to turn the tide on the epidemic in Uganda, Thailand and Cambodia are compelling examples of the power of behavioral strategies, says Dr. Pamina Gorbach, an assistant professor of epidemiology at the school who has worked in Cambodia and Vietnam as well as in the United States. Gorbach’s focus is on the risk behaviors that expose individuals to sexually transmitted infections, including HIV. But unlike many researchers, she analyzes these behaviors in the context of partnerships – seeking to identify factors that make a sexual encounter more likely to be one in which the individuals engage in risky behaviors and a disease is transmitted. "Research that focuses on the individual only tells part of the story," Gorbach says. "For example, unprotected anal intercourse is considered a high-risk behavior, but what if it’s practiced by men who have been together and monogamous for the past 10-15 years?"

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**Sung-Jae Lee,** M.P.H.

Lee, a doctoral student at the school, spent much of his childhood in Thailand, a country that was hard-hit by the HIV/AIDS epidemic. As an M.P.H. student at Yale in the summer of 1997, he was able to arrange a fieldwork opportunity in Northeast Thailand, serving as an HIV AIDS project coordinator for a non-governmental organization. He participated in a study focusing on the economic, emotional and social support needs of individuals and families affected by the epidemic, which produced findings that were instrumental in developing HIV/AIDS services in the area. Lee has continued to pursue his interest in psychosocial HIV AIDS research as a doctoral student working at UCLA’s Center for Community Health under the guidance of Drs. Mary Jane RothmanBorus and Roger Detels. "It’s been a very rewarding experience to be able to translate and apply my epidemiologic tools into practice," Lee says. He is currently helping to develop a series of tutorials to assist HIV/AIDS community-based organizations in Los Angeles in using Microsoft Excel in data construction, management and analysis for the purpose of HIV/AIDS program evaluation.
Janni Kinsler, M.P.H. ’96, Ph.D. ’02

Belize currently has the highest HIV prevalence rate in Central America. In the summer of 1997, Kinsler conducted a pilot study assessing HIV/AIDS-related knowledge, attitudes, beliefs and behaviors among Belizean adolescents ages 13-18. Approximately 14 youth-based non-governmental organizations participated. Based on the results, Kinsler designed, implemented and evaluated a school-based peer education program in Belize City, the nation’s largest urban area. She found that the intervention had a significant impact on condom use, intention to use condoms, and attitudes toward condoms. Still, Kinsler says, “to fully understand the AIDS situation in Belize, one must understand the socio-cultural norms surrounding sexuality and HIV/AIDS in Belize, as well as the relationship between AIDS and the country’s economic and political structures.” With that in mind, she recently submitted a grant to continue her work in Belize with a study that would use, intention to use condoms, and attitudes toward condoms. Still, Kinsler says, “to fully understand the AIDS situation in Belize, one must understand the socio-cultural norms surrounding sexuality and HIV/AIDS in Belize, as well as the relationship between AIDS and the country’s economic and political structures.” With that in mind, she recently submitted a grant to continue her work in Belize with a study that would examine the socio-cultural norms surrounding sexuality and HIV/AIDS, the stigma associated with AIDS, homosexuality and bisexuality; and the role of cultural constructs of machismo and marianismo.

Dr. Pamina Gorbach (above right, with Peter Kerndt of the L.A. County Department of Health Services) studies partnership-level HIV risk factors.

Trista Bingham, M.P.H. ’94, M.S. ’96

Bingham is chief of the Seroprevalence Unit at the Los Angeles County Department of Health Services’ HIV Epidemiology Program, serving as principal investigator of five Centers for Disease Control and Prevention-funded studies: “HIV Incidence Study in Commercial Sex Venues,” “Finding and Characterizing Persons with Recent and Newly Diagnosed HIV Infection in Metro and South Los Angeles:” “Context of HIV Infection Project,” “Epidemiologic HIV/AIDS Research in Latino Men Who Have Sex with Men,” and the “National Behavioral Surveillance” study. Through these investigations, Bingham and her team of epidemiologists and field research interviewers collect data to best identify the subpopulations and social, environmental and economic factors contributing to the county’s HIV epidemic. Among her challenges are to disseminate study findings to local and national audiences while continually seeking funding to support her research team’s work. During her tenure, Bingham and her staff have made important strides in gaining the trust and respect of key stakeholders and spokespersons for communities at risk in Los Angeles. “I get tremendous satisfaction from working closely with the range of community collaborators and the various communities at risk for HIV infection in Los Angeles,” she says.

To be sure, prevention strategies are most effective when they are developed with an understanding of the targeted population. Dr. Susan Cochran, professor of epidemiology at the school, and Dr. Vickie Mays, professor of clinical psychology at UCLA, began collaborating in 1987 as one of the first research teams to try to understand the HIV epidemic in gay African American men ages 18-24 – a particularly high-risk group. “The prevention messages are not resonating with this audience,” says Mays, “because too often they’re messages that have been used for the white gay community with an African American poster child put on them. They don’t take into account the lives of the targeted individuals and the difficulties they have in remaining safe.”

It’s important to recognize not just that interventions aimed at African American gay men might need to be different from those aimed at whites, but also that there is a great deal of diversity within the African American gay community, Cochran notes. “Typically, a focus group of 20-30 gay men will have one person who is African American, and he is supposed to represent the entire community,” Cochran says. “We take an African American-centric approach as opposed to that type of comparative approach. When your group is made up predominantly of African Americans, you’re going to have a much deeper discussion and gain a better understanding of the diversity within the community.”

In their studies, Cochran and Mays have looked beyond behaviors to also examine the socio-cultural norms surrounding sexuality and HIV/AIDS, the stigma associated with AIDS, homosexuality and bisexuality; and the role of cultural constructs of machismo and marianismo.

on disease-transmission risk? What is the impact of knowing whether one’s partner engages in sex outside the relationship? Gorbach has developed population-specific methods to categorize partnerships based on the level of risk. “This research can help us develop interventions that work on a partnership level,” she says.

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HAART – powerful therapy simultaneously using three classes of drugs – has been shown in clinical trials to have a significant impact. But the results on a population level are more mixed. "HAART came out as a very complicated regimen, involving upwards of 15-20 pills a day, some of which you were supposed to take with meals and some between meals," Detels notes. The high cost of the therapy has also prevented HAART from making a comparable impact in developing countries, he adds.

Dr. William Cunningham, associate professor of health services at the school, was a co-investigator on the HIV Cost and Services Utilization Study (HCSUS), the first study to examine the care of people with HIV/AIDS in a large, nationally representative sample. Cunningham’s group found that only about half of the study’s HIV/AIDS patients were on HAART, due to factors that included the complicated medication regimen and access barriers such as competing needs for subsistence – a significant portion of patients reported that they didn’t get necessary care because they needed the money for food, clothing and housing.

But one of the major findings of HCSUS was that patients who were assigned case managers were more likely to receive HAART, as well as to have other health care needs met. Cunningham is now applying that finding, as well as other conclusions drawn from HCSUS, to a community-based intervention study seeking to improve access to care and outcomes for the underserved population reached by a mobile HIV-testing program run since 1993 by Cynthia Davis (M.P.H. ’81), assistant professor at Charles R. Drew University of Medicine and Science. The program sends two vans to provide free testing, counseling, and a small amount of primary care and supportive services to between 2,000 and 5,000 people each year in South-Central Los Angeles, the Skid Row section of Downtown Los Angeles, Hollywood and West Hollywood.

In the recently completed first phase of the study, Cunningham’s group interviewed people who have been tested HIV-positive by the mobile van program to determine the level of care and services they have received, barriers to optimal care, and their health status. In focus groups, the researchers learned more about the needs of a population that gets its health services on the streets – a high-risk group that includes sex workers, substance abusers, people who are homeless, gang members, undocumented individuals, and a large proportion of minorities and women – and confirmed that case managers could make a difference. Now, in the study’s second phase, Cunningham’s group is implementing “mobile case management.”

"The idea is that a case manager who assesses unmet needs for supportive social services, gives referrals and does follow-up can help ensure that people also get the medical care they need," Cunningham says. "That’s what we found with HCSUS. But in HCSUS, we were looking at the half of the people with HIV in the United States who are in care. With this study, we’re trying to reach the other half.”

No matter what population they’re attempting to reach, HIV/AIDS researchers recognize that public health strategies are at the forefront of efforts to control and one day eliminate the epidemic. Says Detels: “Even when you consider the issues of treatment, getting infected people treated in developing countries requires the establishment of an infrastructure to deliver the care, which is public health. And treatment on its own will not make the epidemic go away. We will continue to need prevention strategies.”

Wiwat Peerapatanapokin, M.D.

Peerapatanapokin, a medical doctor and computer expert who recently completed the Ph.D. program in the school’s Department of Epidemiology, has worked with Dr. Tim Brown in developing a computer model for the HIV/AIDS epidemic in Asia. "Most models focus on the epidemic in Africa," he explains. "But we recognized that the epidemic of HIV in Africa and in Asia have different patterns. The Asian Epidemic Model (AEM) divides people into subpopulations relevant to the epidemic, including injecting drug users, female sex workers, general females, male clients and male non-clients. After further dividing these subpopulations into uninfected and infected groups, Peerapatanapokin developed mathematical equations and computer software to calculate the interaction and movement among these groups. The program records the number of new infections that occur in each route of transmission and tracks the size of each subpopulation over time. AEM has been successfully applied in Cambodia and Thailand. Among other things, the model projected that without any public health interventions, Thailand would have had approximately 6.5 million instead of 700,000 people living with HIV in the year 2000. Peerapatanapokin and Brown are continuing to refine the model and produce additional applications.