

# Sustainable science to promote health in Africa

December 4 2013, by Laura Kurtzman

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Stefanie Sowinski, PhD, right, trains Grace Turyasinga in the new core immunology lab, sponsored by the UCSF/Gladstone Center for AIDS Research, at the Infectious Diseases Institute in Kampala, Uganda. Credit: Will Boase

When someone is diagnosed with HIV in western Kenya, chances are he will get help from FACES, a network of clinics that takes a family-focused approach to prevention, care and treatment of the virus.

Likewise, a villager in Uganda who wants to know her HIV status is likely to get tested at a traveling clinic from SEARCH, a community-based trial with the goal of stopping the spread of HIV through a strategy

known as "test and treat."

Both projects were launched in collaboration with African scientists by researchers from UC San Francisco, which has been working in East Africa for more than two decades. UCSF scientists and clinicians have provided AIDS, tuberculosis and malaria-related treatment to tens of thousands of people, researched the causes and trajectories of the diseases and trained scientists and physicians throughout the region.

Now, UCSF's many and varied efforts – which are spread throughout the African continent, but are most concentrated in Uganda, Kenya and Tanzania – finally have a regional headquarters in Nairobi, Kenya, sponsored by the UCSF/Gladstone Center for AIDS Research (CFAR). CFAR is also supporting the expansion of a core immunology lab at the Infectious Diseases Institute (IDI) at Makerere University College of Health Sciences in Kampala, Uganda.

"This will increase the opportunity for UCSF researchers to get involved in collaborative programs in East Africa," said Phil Rosenthal, MD, a professor in the Division of Infectious Diseases at San Francisco General Hospital and Trauma Center (SFGH) and a malaria expert who has been training scientists in Uganda for more than a dozen years.

Like others at UCSF, Rosenthal has approached his scientific work with a dual aim: treat disease while sustainably building up the local health care system. These researchers have been at the forefront of a push toward more sustainable work that was embraced as national policy under the leadership of Ambassador Eric Goosby, MD, who recently returned to UCSF after serving as Obama's global AIDS coordinator and head of PEPFAR, the President's Emergency Plan for AIDS Relief.

## **Training and Technology to Advance Research**

Core to this mission is building better research facilities and passing on the ever-changing technical knowledge that African scientists need to run them.

Stefanie Sowinski, PhD, a Gladstone Institutes/UCSF postdoctoral fellow, is directing the newly expanded lab at the IDI. She flew back to Kampala recently with one suitcase packed with clothes, the other stuffed with reagents for the flow cytometer she is training African scientists to use.

The new FACS Canto, a machine the size of a loveseat that was shipped over a few months ago, is a critical piece of equipment in any core immunology lab.

Sowinski says students looking for research experience constantly come to her asking for help and offering to volunteer in the lab, which is doing work for at least half a dozen Western researchers. As the lab brings in more money, she has been able to give a few students paid work.

As a young scientist, she knows the value of mentorship. "You just profit a lot from somebody who has been in science a lot longer than you have."

Her first student was lab manager Olive Mbabazi, a mother of three who is getting a master's degree at Makerere University in clinical microbiology and immunology, after having worked in labs for 20 years. She finds the work gratifying.

"I think the most interesting thing about science is that you really see what you are doing," said Mbabazi, who is training other students to use the [flow cytometer](#). "You are able to really see and appreciate what you have learned."

Sowinski first went to Africa a year ago at the behest of her mentor, Warner Greene, MD, PhD, who thought she would flourish as a mentor.

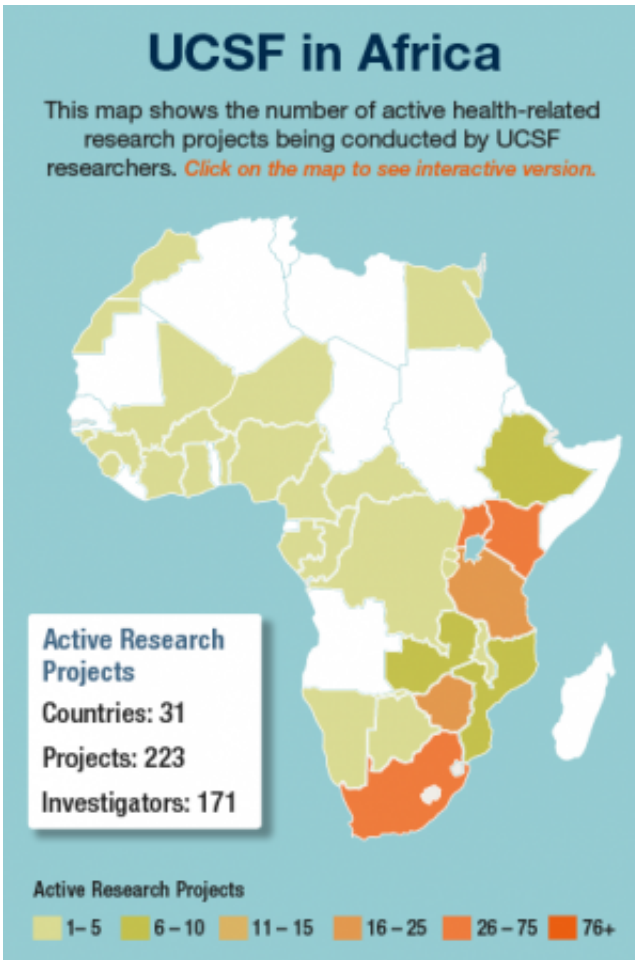
"Steffi's found her sweet spot in life," said Greene, who is director of the Gladstone Institute of Virology and Immunology and together with Paul Volberding, MD, also directs CFAR. "She's an inspired teacher, and she'll be a great coordinator."

He said the burgeoning lab contributes to the larger goal – also pushed by Goosby when he was head of PEPFAR – of ensuring that foreign-aid projects enhance medical care in Africa over the long term.

## **Deep Roots in the Region**

UCSF's work in Africa goes back about 25 years, when the late Merle Sande, MD – then the medical service chief at SFGH – opened an AIDS program in Uganda. As a young faculty member, UCSF Chancellor Susan Desmond-Hellmann, MD, MPH, spent two years in Uganda – from 1989 to 1991 – studying heterosexual AIDS transmission and the AIDS-related cancer Kaposi's Sarcoma.

In 1998, UCSF established a research collaboration with Makerere University focused on studying and treating malaria, and the collaboration expanded in 2004 to include HIV and tuberculosis. The IDI was founded in 2003, and UCSF trainees have been going there ever since to treat patients and do research.



SEARCH, one of the most comprehensive efforts, is led by Diane Havlir, MD, chief of the HIV/AIDS Division at SFGH, and Moses Kanya, chair of medicine at Makerere University who has the Ugandan equivalent of an MD, PhD.

The trial aims to enroll 320,000 people in Uganda and Kenya and stop the spread of HIV by immediately giving antiretroviral therapy – which can stop transmission – to anyone who tests positive for the virus.

"The premise of the study is we can treat ourselves out of the epidemic

and build community health at the same time," Havlir said.

As founding director of FACES, Craig Cohen, MD, MPH, an ob/gyn at UCSF, has worked closely with the Kenya Medical Research Institute to support 140 Kenyan Ministry of Health (KEMRI) facilities.

FACES now serves 130,000 people – about 10 percent of Kenya's HIV-infected population – and has pioneered a comprehensive approach to treating AIDS that includes screening for cervical cancer, since HIV-positive women are more likely to develop the disease, as well as tuberculosis, one of the leading causes of death for HIV-infected people in the developing world.



Olive Mbabazi, lab manager at the Infectious Diseases Institute, has received mentorship and training from Stefanie Sowinski, PhD, a postdoctoral fellow who's leading the new core immunology lab. Credit: Will Boase

In nearly 20 years, Cohen has mentored about 70 African scientists. He

also co-directs the GloCal Health Fellowship, which provides support to fellows and scholars throughout the University of California system to study around the world.

Many have chosen to work in Uganda and Kenya, and now they can also go to Tanzania, where Muhumbili University of Health and Allied Sciences – which has a decade-long collaboration with UCSF's Global Health Sciences – has joined the fellowship program.

"The collaboration with Craig over the last almost 20 years has been the fulfillment of a dream, a dream to give hope to those for whom a diagnosis of HIV was tantamount to a death sentence," said Elizabeth Bukusi, who has the equivalent of an MD, PhD, and is deputy director of KEMRI. "It has been the realization of a critical mass of Kenyan scholars taking responsibility for working within the global community to help find solutions to the health needs of their communities."

Provided by University of California, San Francisco

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