



Health Sciences Center for Global Health

The Global Address

Global Health Research at OSU



Jesse Kwiek, PhD, left, shown here with colleague Mr. Nkwazi at the Thyolo District Hospital in Malawi

In this issue we highlight four global health researchers at Ohio State and take a brief look at some of the issues they are tackling. Preventing mother-to-child transmission of HIV, discovering new treatments for the most deadly form of malaria, understanding the mechanisms behind the transmission of zoonotic diseases, and working to provide evidence that can lead to screening and prevention programs at the country level are herculean undertakings but these researchers have accepted the challenge.

While it is easy to see a direct correlation between their research and global health, there are many others doing research that could potentially impact health in developing countries, that don't have such an obvious connection. Over the next year we plan to feature more of our researchers including some investigators who may not define their work as global health research but who we think may provide important linkages to solving the big issues. Maybe it is time to update the saying, "it takes a village" to "it takes a comprehensive and integrated university."

Read profiles of researchers Mark Drew, PhD, Shelley Francis, DrPH, Rebecca Garabed, VMD, MPVM, PhD, and Jesse Kwiek, PhD, on [page 2](#)

R4WH + Metro High School = Global Health Day 2010 Success!

Created in 2006, Global Health Day coincides with Ride for World Health's (R4WH) arrival in Columbus. The day provides a unique opportunity for OSUMC to showcase its commitment to international healthcare and to further support our medical students' ambitious endeavor. R4WH is a non-profit organization founded in 2004 by a small group of OSU medical students. Their mission is "to address global health disparities by focusing on education, advocacy, and fundraising" through a national cycling trip. The beneficiaries of their efforts for 2010 are World Bicycle Relief and Heal Africa.

This year's Global Health Day on May 17 began with the ride-in of the Ride for World Health team as they neared the end of their cross-country education and fundraising cycling trip. Unfazed by the rain and cold temperatures, the assembly of well wishers enthusiastically embraced the riders.

William Brustein, PhD, vice provost for Global Strategies and International Affairs (pictured at right) opened the day and talked about OSU's commitment and strategy for being a global university.



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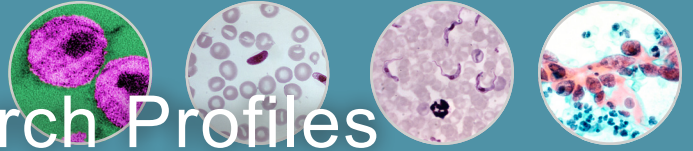
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Global Health Research Profiles



Mark E. Drew, PhD
Asst. Prof., College of Medicine
Division of Infectious Diseases
Center for Microbial Interface Biology

Mark Drew focuses his research on *Plasmodium falciparum*, the most deadly of the four species of malaria parasite that affect humans. There are over 200 million new

clinical cases of malaria each year, with well over 1 million fatalities. It is the leading cause of childhood death by any single infectious agent in the world with the majority of cases found in sub-Saharan Africa.

His efforts for discovery and development of novel therapeutics to treat infections with *P. falciparum* are divided into two strategies: screening chemical compounds for their ability to kill malaria parasites in an aim to identify novel structures and/or scaffolds for potential development of therapeutic leads, and in a target-based approach, evaluating a number of parasite-expressed proteases as viable drug targets.

[Read more about Dr. Drew's research](#)

Relevance and Impact: In 2008, there were 247 million cases of malaria and nearly one million deaths – mostly among children living in Africa. Malaria is the 5th cause of death from infectious disease worldwide and the 2nd leading cause of death from infectious diseases in Africa.¹

¹ Center for Disease Control and Prevention, "[Malaria Facts](#)."



Shelley A. Francis, DrPH
Asst. Prof., College of Public Health
Health Behavior and Health Promotion

Shelley Francis works with key stakeholders in both Johannesburg and Cape Town, South Africa on a project to assess barriers and facilitating factors for HPV, cervical

cancer prevention, and HPV vaccine uptake. She conducts in-depth interviews with key stakeholders who are involved in maternal and child health, policy and law, clinical care, traditional medicine, education, health promotion, public health, and advocacy. She hopes that findings from this project will provide reliable and valid evidence for country level cervical cancer prevention programs.

Relevance and Impact: According to the World Health Organization, "Cancer of the cervix is the second most common cancer in women worldwide, with about 500,000 new cases and 250,000 deaths each year. Almost 80% of cases occur in low-income countries, where cervical cancer is the most common cancer in women. Virtually all cervical cancer cases (99%) are linked to genital infection with human papillomavirus (HPV), which is the most common viral infection of the reproductive tract."



Rebecca Garabed, VMD, MPVM, PhD
Asst. Prof., College of Veterinary Medicine
Dir., Disease Ecology and Computer Modeling Laboratory

Rebecca Garabed uses computer modeling techniques to examine livestock movements and disease epidemiology in Cameroon. This enables better understanding

of the mechanisms driving the transmission and persistence of Zoonotic diseases. Traveling to Cameroon for a month twice a year, the main disease they are looking at in livestock and people is trypanosomiasis (called "African sleeping sickness" in people).

Garabed's project is very interdisciplinary in nature and exemplifies the team approach that is proving most effective in global health research. Other investigators on the project are Mark Moritz, PhD, in Anthropology, Song Liang, PhD, in Environmental Health Sciences, and Ningchuan Xiao, PhD, in Geography

Relevance and Impact: The World Health Organization reports that people in 36 countries of sub-Saharan Africa are susceptible to trypanosomiasis and many infected individuals die before the disease is diagnosed and treated. Animal trypanosomiasis has significant impact on economic development by causing morbidity and mortality in livestock.



Jesse J. Kwiek, PhD
Asst. Prof., College of Medicine
Division of Infectious Diseases

Jesse Kwiek's lab studies the biology, pharmacology, and public health impact of Human Immunodeficiency Virus (HIV-1).

Current projects focus on the biological

mechanism of HIV-1 mother-to-child transmission, the interaction of HIV-1 with host proteins during HIV-1 replication, and pediatric HIV-1 diagnostics. Much of his international research has been done in collaboration with The Malawi College of Medicine in Africa where he also taught biology while serving in the Peace Corps in 1995.

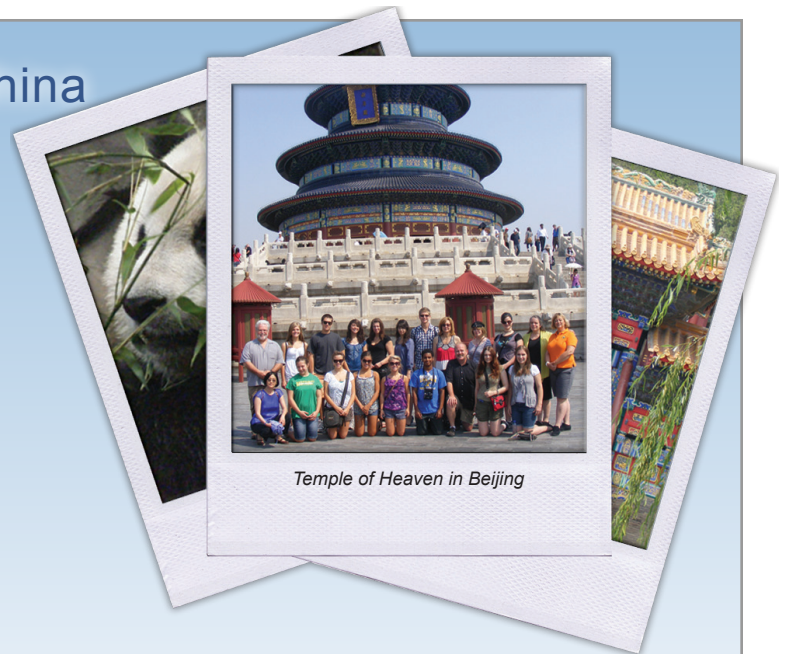
Relevance and Impact: Mother-to-child transmission of HIV is the major means of HIV infection in children below the age of 15 years. Transmission is avoidable but access to preventative interventions is low in most developing countries. Every day over 1700 infants become infected with HIV (90% of these new infections are acquired through mother-to-child transmission).¹

¹ World Health Organization, "[Prevention of mother-to-child transmission of HIV \(PMTCT\) and family planning \(FP\)](#)." Sexual and Reproductive Health.

Ni hao (Hello) from Beijing, China

The primary aim of OSU's NIH Fogarty International Center framework grant received in 2008 is "to interest students at the high school, undergraduate, graduate, and professional level in global health careers" according to principal investigator Daniel Sedmak, MD. Sedmak directed a course, "Global Health in the 21st Century" for Metro and Westerville Central High School students in the S.T.E.M. Bodies program. The Bodies program focuses on biomedical sciences and is an early college experience for which the students receive OSU credits. The global health course is team taught and there are OSU faculty representing the Colleges of Medicine, Nursing, Public Health, and Veterinary Medicine.

One exciting aspect of this course is the 10-day China Study trip at the conclusion. During spring quarter, students heard from experts on multiple global health issues and from June 15-24 had the chance to see some of the concepts they learned about in practice in Beijing, China. Some of the students have studied Mandarin Chinese for up to four years and welcomed the opportunity to talk with native speakers. In addition to Sedmak and 15 high school students, teachers Pam Hayes and Scott Paynter from Westerville Central, Zhiwei Bi from the OSU Chinese Flagship Program, and Pam Potter from the Health Sciences Center for Global Health accompanied the group. Students spent mornings studying language and culture



Temple of Heaven in Beijing

including Chinese painting, kite making, Tai Chi and music. They also learned about traditional Chinese medicine while visiting Guang an men Hospital, Beijing University of Chinese Medicine and Tong-ren-tang, one of the largest traditional Chinese medicine pharmacies in the world. Several of the students will be attending OSU in the fall in the Honors Program.

First Students Receive GISGH Designation

The Graduate Interdisciplinary Specialization in Global Health (GISGH) program recognized its first four graduates on June 7. The GISGH is offered by the OSU Health Sciences Center for Global Health. Anja Brokaw, College of Nursing, Debra Nickoli, School of Allied Medical Professions, and April Hoyt and Christopher Volpe, College of Public Health were awarded certificates of completion by Daniel Sedmak, MD and Mary Ellen Wewers, PhD, MPH, center co-Directors and Steven G. Gabbe, MD, senior vice president for Health Sciences. Also on hand to congratulate the students was Elliot Slotnick, PhD, associate dean of the Graduate School. The GISGH is a university-wide program that offers current OSU graduate and professional students advanced educational opportunities in the field of global health.

There are currently 48 graduate and professional students enrolled in the program. Courses in the GISGH are taught by faculty from departments and colleges across the campus in areas including sociology, anthropology, international studies, public health, nursing, pharmacy, veterinary medicine and agricultural communication.



Pictured left to right: Jessica Small, Pam Potter, Steven G. Gabbe, Daniel Sedmak, Christopher Volpe, April Hoyt, Debra Nickoli, Anne Kloos, Anja Brokaw, Lissa Barker, Mary Ellen Wewers, and Elliot Slotnick

Congratulations!



Anja Brokaw
College of Nursing



April Hoyt
College of Public Health



Debra Nickoli
Allied Medical Professions



Christopher Volpe
College of Public Health

Developing a worldview of health



My Take: Honduras 2010



by Lissa Barker, PhD, CNP, FAANP, FACHE
Director, Masters Programs
College of Nursing

Students and faculty at dump site in Tegucigalpa (AFE Clinic)

“My take on global health projects? It’s something that gets into your soul and becomes an affirmation of your place in this world.”

Honduras Facts

Location: Central America, between Guatemala, El Salvador, and Nicaragua

Population: 7,989, 415

Primary Exports: Apparel, bananas, and coffee

GDP - per capita: \$4,200

Life Expectancy at birth: 70



The World Factbook 2009. Washington, DC: Central Intelligence Agency, 2009.

As I finished my sixth trip to Honduras with my students, I found myself ruminating about the experiences, both past and present. When I first started my trips there, I was excited to go and “do good” for an underserved population, to get a chance to be where I hadn’t been before and to work with some talented students as they developed their clinical skills. To be honest, that hasn’t changed a great deal, but the enrichment of the experience has deepened and had a profound effect on my spiritual development, my practice and my teaching.

In my research on Spiritual Well Being (SWB), I found that for women, SWB wasn’t so much religion as a strong sense of relationship with a creative force, with themselves, with kin and with others. What I didn’t realize was how important it was to nurture that relationship over time. My trips to Honduras have become a touchstone for me in the continuing relationship myself, with others and with the Deity. First of all, I have to believe that there is some sort of divine intervention in the fact that when we make our trips, the political instability cools down, the anger about foreigners subsides and people, whom you are told are dangerous, approach us without weapons or mal intent, but are grateful for the difference we make in their health. We never put any student in harm’s way, but there is always a risk and we haven’t experienced anything negative.

Second, it is amazing to observe how the intense faith of those who live there and create our sustainable opportunities has made doors open and supplies available. We bring thousands of dollars of supplies to Honduras every year. It would not be surprising if the medication and supplies were confiscated, or otherwise became problematic. This never has happened. Once the officials know where we are bringing the supplies, no problem. That’s not always the case with other groups.

Then there is the piece of relationship with others. The relationships you didn’t even realize were being forged, like the man who lives in the dump in Tegucigalpa who came up to me and said “Lissa, I remember you, you come every year, Thank you, you helped make my daughter well. We love you.” (Knock me over with a feather). There are the little boys who run beside the yellow bus we use for transportation giving us the O-H-I-O signal wearing the shirt we brought last year- “see Professora, I’m brushing my teeth! Your Spanish is funny” and we both laugh and enjoy the moment. Or the woman who brings the year old baby for a well baby check and reminds me that I was the one who told her she was pregnant and how to take care of herself- now she wants me to see her healthy baby boy- Wow!

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My Take: Honduras 2010 Cont. from page 4

Finally, the students. They go to Honduras with a lot of enthusiasm and when they get there (unless they've done missions before) they experience the gut punch of poverty's impact. Real poverty hits them like Montezuma's revenge. The first day- lots of consulting and reassuring on my part with their encounters, and then, a miracle happens. Confidence begins to accumulate and you can see not only the growth in confidence, but the connection with the people who come to them for help. The students realize that they are making a difference. The difference is not just a one-time drop in the ocean of poverty, but that

over time, their presence adds to the cumulative effect of health. They become connected to one another, to the patients and to their profession. As a teacher, it's a joyful thing to encounter. My take on global health projects? It's something that gets into your soul and becomes an affirmation of your place in this world. It's why we are in this demanding and often unforgiving profession. Carefully structured and sustainable projects make a measurable positive difference in the lives of others. Most especially, it makes a difference in me and I'm further on the road to becoming the person I was meant to be.

Global Health Day 2010 Cont. from page 1

The OSU community was joined by students from Metro High School who participated in the day's events that included a health fair, speakers, and lunch. Metro students presented iMovies they created based on the Millennium Development Goals.

In the afternoon, students watched the documentary film, "LOVE, LABOR, LOSS" about the childbearing injury called obstetric fistula. After the film, they broke into small groups with R4WH team members leading discussions.

The day ended with talks by speakers from Heal Africa and World Bicycle Relief and a sense that on this day, awareness of global health issues had been raised and seeds for future activists planted.

Buckeyes Without Borders

Buckeyes Without Borders, a new group at OSU formed by graduate students, strives to foster global health awareness and the benefits of an interdisciplinary health care team on positive patient outcomes to its members through outreach and education to the Ohio State University and Central Ohio communities. Inaugural members Cara Whalen (physical therapy), Brad McIntyre (pharmacy), Hayley Ashbaugh (veterinary medicine), Chris Rea (public health), Benjamin Rosenfeld (medicine), Krystal Long (optometry), and Vivian Kaufman (dentistry) have collaborated to form the first graduate interdisciplinary global health group. Though still in the early stages of development, recruitment of new members will begin soon. For more information contact [Brad McIntyre](#).



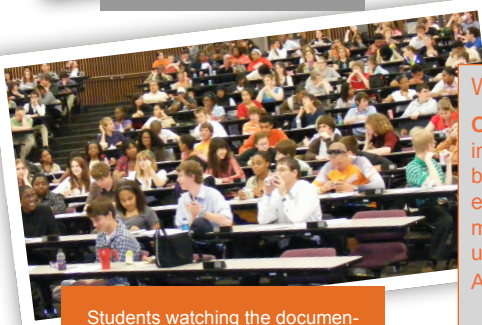
OSUMC staff members Nancy Davis and Vickie Bender participated in the R4WH 40-Mile Solidarity Ride



R4WH team members with Vice Provost Brustein



Lenore Jarvis, 2010 R4WH Education Chair, second from left, with Metro teachers Cory Neugebauer, Jeffrey Elliott and Assistant Principal Aimee Kennedy



Students watching the documentary film, "LOVE, LABOR, LOSS"

What is...

Obstetric fistula is a hole in the birth canal caused by obstructed labour. It is estimated that more than 2 million young women live with untreated obstetric fistula in Asia and sub-Saharan Africa.

World Health Organization, "[10 Facts on Obstetric Fistula](#)," Mar. 2010.