



**INSPIRING  
CONNECTING  
TRANSFORMING**  
THE WORLD FOR GOOD

2013-2014



 **DUKE  
GLOBAL HEALTH  
INSTITUTE**

# MISSION

DGHI works to reduce health disparities in our local community and worldwide. Recognizing that many global health problems stem from economic, social, environmental, political, and health care inequalities, DGHI brings together interdisciplinary teams to solve complex health problems and to train the next generation of global health leaders.

Academic excellence to meet the global health challenges of today and tomorrow to achieve health equity worldwide

EXPLORE OUR DIGITAL ISSUE  
[impact.globalhealth.duke.edu](http://impact.globalhealth.duke.edu)



- learn more
- watch videos
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129

Faculty

47

Staff

\$17.4 million

Annual budget

# AT THE FOREFRONT OF GLOBAL HEALTH

In the past decade, the number of global health programs on North American university campuses grew tenfold. This increase was fueled, in part, by the passionate desire of students to reduce health inequities and eliminate poverty.

In a recent issue of the *New England Journal of Medicine*, I noted that global health as an academic field is a driving force behind the globalization of higher education throughout the country.

I'm proud that Duke University and the Duke Global Health Institute are at the forefront of this movement. With the establishment of one of the first Master of Science in Global Health programs, and the first liberal arts co-major in global health, Duke has capitalized on the enthusiasm of students and is channeling their passion into rigorous academic pursuits.

Global health is multi-faceted and requires interdisciplinary approaches to synthesize, evaluate, and apply knowledge that is relevant to complex real-world challenges.

At Duke, our global health programs integrate the perspectives of many disciplines and specialties, such as anthropology, psychology, economics, engineering, environmental sciences, business, public policy, law, medicine, nursing and public health.

Through interdisciplinary collaboration, our outstanding faculty are asking the tough questions, developing new knowledge, and finding creative and innovative ways to improve health and prevent and treat disease.

We've accomplished a great deal since founding the Duke Global Health Institute in 2006. With hundreds of Duke students pursuing a global health education, more than 100 faculty involved in research, and dozens of partners working collaboratively around the world, we're doing our part to improve health equity and educate tomorrow's global health leaders.

## **Michael H. Merson**

*Director, Duke Global Health Institute  
Wolfgang Joklik Professor of Global Health*



# PROGRESS OVER THE YEARS



## 2006

University-wide Symposium launches DGHI

Global health certificate and Focus begin

Select Michael Merson as founding director



## 2007

Appoint first faculty

Center for Health Policy joins DGHI

Adopt first Strategic Plan

Launch electronic newsletter



## 2009

Master of Science in Global Health begins

DGHI Student Council forms

Award first faculty research grants

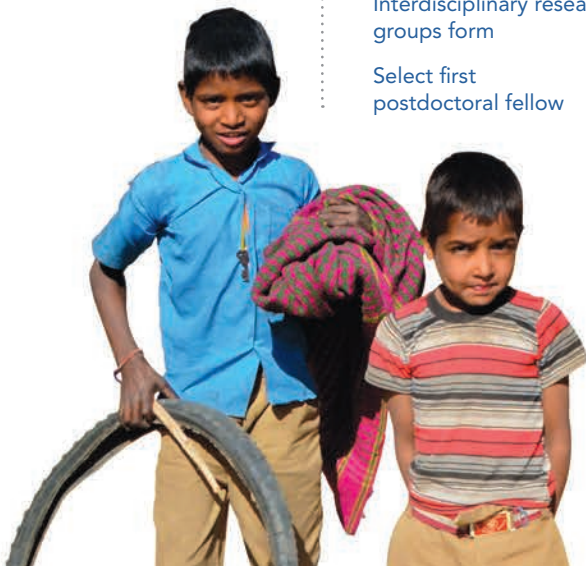
## 2008

Select first Global Health Residents

Third Year Study Program in Global Health begins

Interdisciplinary research groups form

Select first postdoctoral fellow



"Duke is the go-to university for multidisciplinary opportunities to study global health."

— EXCERPT FROM  
2014 EXTERNAL REVIEW REPORT



## 2010

- Establish Board of Advisors
- ABC News global health initiative launches
- 45 faculty receive secondary appointments
- 10 international priority locations receive support

## 2011

- Organize Winter Forum: Pandemic 2011
- Doctoral Scholars launches
- Integrate global health courses in medical school curriculum

## 2012

- Student Research Training Program launches
- Social Entrepreneurship Accelerator at Duke receives USAID funding
- Duke Forward fund-raising campaign launches

## 2013

- Second Strategic Plan complete
- Major and minor in global health begins
- Center for Global Women's Health Technologies launches
- Bass Connections in Global Health begins
- Doctoral certificate accepts first students
- Global Health Research Center at DKU opens
- New DGHI website launches
- Doris Duke International Clinical Research Fellowship begins

## 2014

- First global health majors graduate
- Launch Global Cancer initiative
- Conclude successful External Review
- Duke Kunshan University accepts first MSc-GH students
- Establish DGHI Evidence Lab



# SEEKING SOLUTIONS THAT SAVE LIVES

## NEW DEVICE AIDS EARLY DETECTION OF CERVICAL CANCER

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A team from the Center for Global Women's Health Technologies has developed an inexpensive, tampon-like device for women in low-income countries to use at home to check for cervical cancer. Cervical cancer affects 530,000 women worldwide each year and causes more than 270,000 deaths. Eighty-five percent of these deaths occur in low-income countries, despite that it is highly treatable when caught early.

"Lack of awareness about cervical screening, poor health-seeking behaviors and fears about loss of privacy lead to poor uptake of cervical screening among women in the low-resource areas," says Nimmi Ramanujam, professor of biomedical engineering and

global health. "This device is aimed at removing some of these barriers, and aiding the detection and early treatment of the disease."

This portable, point of care technology consolidates the colposcope into a hand-held device. Ramanujam and her team are using community-based clinics in Haiti and Tanzania to bring early detection and treatment to as many patients as possible in places where hospitals are not easily accessible.

This promising new device could be the key to transforming the current model of cervical cancer management to one where community health workers and women can work together to save lives.

320 academic and professional publications

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206

grants managed by DGHI in FY 13

7

### RESEARCH PRIORITIES:

- Cardiovascular Disease and Obesity
  - Emerging Infectious Diseases
  - Global Cancer
  - Global Environmental Health
  - Global Mental Health
  - Health Systems Strengthening
  - Maternal and Child Health
- 

300+

research projects in 54 countries

## LEPTIN HORMONE MAY BE KEY TO SAVING MALNOURISHED CHILDREN

A team of researchers led by Michael Freemark, professor of pediatrics, found that severely malnourished children with higher levels of leptin had better health outcomes than malnourished children with low levels of the hormone.

The study involved nearly 80 severely malnourished children ages six months to five years old who were admitted to Mulago Hospital in Kampala, Uganda. Patients were treated in the hospital with milk-based formulas. Some of the children were also monitored while receiving ready-to-use therapeutic food in an outpatient clinic.

As a result of treatment, many of the children experienced positive health outcomes, including increases in weight and improvements in levels of fatty acids, amino acids and various growth-promoting factors including insulin and leptin. However, 12 percent of the patients died while in the hospital, and the major factor that predicted death was a low level of leptin.

“The identification of low leptin as a predictor may allow us to recognize and treat high-risk malnourished children before they reach the stage of critical, life-threatening illness,” said Freemark.



“Women with fistula often have high levels of shame. We hope to provide them with tools to cope and live without shame.”

— SARAH WILSON



## GIVING WOMEN BACK THEIR DIGNITY

Obstetric fistula is a debilitating complication of childbirth that can leave women with physical and emotional scars that can last a lifetime.

Duke Global Health Doctoral Scholar Sarah Wilson has worked for four years alongside faculty mentors Kathleen Sikkema and Melissa Watt and partners from the Kilimanjaro Christian Medical Centre to quantify the mental suffering of these women. Not surprisingly, they learned that women with fistula have much higher rates of depression and posttraumatic stress and lower levels of social support, compared with other gynecological patients. After surgery, mental health and social support improved,

but with less improvement for the quarter of women who still experienced post-surgery complications such as leakage.

Based on this evidence, the research team received funding from the National Institutes of Health to test a mental health intervention for fistula patients. The six-session curriculum incorporates evidence-based psychological treatments for depression and trauma. The sessions allow a woman to reflect on her own story of developing and living with a fistula. The nurse facilitator helps the woman to question problematic negative beliefs and to separate the physical condition from her sense of self-worth.

# IMPACT ON COMMUNITIES

## CATALOGING HERBAL MEDICINES IN GUATEMALA

The indigenous Mayan population of Guatemala lives amongst a virtual pharmacy of natural and herbal medicines, ointments and remedies. A team of undergraduates from DGHI's Student Research Training (SRT) Program, led by faculty member David Boyd, spent the summer interviewing midwives, herbalists and other traditional healers to better understand the uses of herbal medicines and to create education programs for the community.

The students learned that these populations have little access to biomedicines, and distrust of the health care system makes the transition to Western medicine difficult. They also discovered that traditional healers often do not share their herbal know-how with one another.

Given the high prevalence of malnutrition and water-borne and diarrheal diseases, it was important that community members have more information about the medicines that were available to them.

"What looked like a bushel of leaves to me was a cure to the well-trained eye," said undergraduate student Roxana Martinez.

The SRT team created a catalog of regional plants and their uses in order to strengthen the traditional medicine system in the area. This guide, which includes photos of the plants, is both culturally-appropriate and ready to use since it is translated into the native language in the region.

While the guide alone may not change common-held beliefs

about Western medicine, it will help community members make more informed decisions about their own health needs.



"Hierba buena," or good grass, is a common medicinal plant to treat parasites in children in the Western Highlands region of Guatemala.

# 11

### INTERNATIONAL PRIORITY LOCATIONS

- Beijing, China
- Kunshan, China
- Shanghai, China
- Leogane, Haiti
- Delhi, India
- Eldoret, Kenya
- Singapore
- Cape Town, South Africa
- Galle, Sri Lanka
- Moshi, Tanzania
- Kampala, Uganda

# 140

students and trainees conducted field research in

# 19

countries in FY14



In Tanzania, there is one physician for every

125,000 people.

In the U.S. there is one physician for every

407 Americans.

## TRAINING MORE DOCTORS IN EAST AFRICA

Tanzania will soon have more and better trained physicians, thanks to an overhaul of medical education at the Kilimanjaro Christian Medical College (KCMC). In two years, more than 150 new physicians who benefitted from the improved training will complete their medical degree and be deployed throughout the country.

These improvements are made possible through a five-year \$10 million grant from the Medical Education Partnership Initiative funded by the U.S. government. In 2010, KCMC and Duke University were awarded the funding to



strengthen medical education at the medical school in Moshi.

Today, KCMC faculty are using modern teaching tools similar to those available at Duke, like team-based learning, wet laboratory instruction for hands-on learning, clinical skills workshops and mentored research training programs. These advancements are possible because of improved

information technology. KCMC now has wireless internet campus-wide using fiber-optic connectivity, new faculty and computer laboratories, an online course management system, and tablet computers for students.

MEPI and KCMC are giving trainees the knowledge and tools to provide quality health care in their community.

## BREAKING THE CYCLE OF INTERPERSONAL VIOLENCE AGAINST WOMEN IN DURHAM

A multidisciplinary team of faculty and students is working to empower Durham Latina immigrant women who face interpersonal violence. More than 1.5 million rapes or assaults are inflicted upon women by an intimate partner each year in the US.

The Duke team worked with the nonprofit El Centro Hispano, Inc to understand the prevalence of violence, and provide women with knowledge and confidence to address violence and healthy relationships in an informed and safe way. The study is part of the Bass Connections in Global Health program that enables students from all education levels to work

on a global health problem.

Through focus groups and interviews, the team found that many Latinas lack access to care and resources, and gaps exist in their knowledge, perceptions and attitudes about violence. Some women reported lacking financial support, social networks and self-worth, and feared being alone. Victims were less likely to report abusers or seek shelter due to fear of deportation and cultural and linguistic barriers.

The team developed a series of workshops that were delivered in Spanish by the students. The series focused on healthy relationships, immigration policy,

and local resources. An evaluation found participants appreciated the opportunity to learn in a supportive environment. At the end of the sessions, women reported feeling more comfortable talking about violence and suggested more workshops.

Although it will take a broad range of efforts to end violence, building knowledge and confidence among victims is an important first step. If complemented with existing programs and prevention efforts, this outreach model can change the perceptions of victims of interpersonal violence across North Carolina and beyond.

# INFLUENCING POLICY AND PRACTICE

## WHAT'S WRONG WITH THE CHILDREN IN FAMILIES FIRST ACT?

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*Op-ed by Kathryn Whetten, professor of public policy and global health, and director of the Center for Health Policy and Inequalities Research. Featured in national and regional newspapers.*



A seemingly compassionate bill now before Congress aims to help orphaned children in low-income countries. If you want to understand why it is deeply flawed, you need to know about Pisey...

... The Children in Families First Act now being considered by Congress with support from both Democrats and Republicans would attach new rules to US aid to pressure foreign nations to close or downsize their orphanages and group homes. The bill's goals — to help ensure children are raised in loving, permanent families — are laudable but undercut by the reality facing those placed in orphanages because of abuse, neglect, substance use, mental illness or extreme poverty.

Our team studied more than 3,000 orphaned and abandoned children in five Asian and African countries, and found as much abuse and neglect in family settings as in institutions. ...

Instead of casting families as "good" and orphanages as "bad," what's needed is a multipronged approach to help more than 150 million orphans and tens of millions of street children around the world. For many, group homes can serve as an important safety net.

The US has 400,000 children in foster care, many of them unable to find loving, adoptive families, so Congress should be humble about dictating to poorer countries how they can best help their most vulnerable populations. ...

... Congress should focus on the part of the bill that is about enhancing families so they will be more likely to keep and adopt children. At the same time, instead of trying to close group homes, it should work to ensure they are safe and nurturing for the millions of children who still need them.



## TRANSFORMING HEALTH CARE IN LAOS

A set of health reform recommendations developed by Shenglan Tang, professor of medicine and global health, and a team from the World Health Organization has been approved by the federal government of Laos.

These recommendations include an increase in government spending for the delivery of essential health services, hiring more skilled health workers, making essential medicines and technologies more accessible, investing in referral hospitals and specialized care, and establishing an effective health information system. The strategy also calls for stakeholders from public and private sectors and all levels of government to develop the policies and resources to reach universal health coverage. The country's rapid economic growth over the past decade provides an opportunity for the government to improve the welfare of the people. The plan is now moving toward implementation in Laos.

## ARE "IMPROVED" WATER SOURCES REALLY SAFE?

Some reports show that 89 percent of the world's population has access to improved water sources. Duke researchers now challenge this figure and say that international metrics for "safe drinking water" do not tell the whole story.

Published in the World Health Organization Bulletin, Marc Jeuland, assistant professor of public policy and global health, and Doctoral Scholar

Jenny Orgill argue the current definition of "improved" does not reliably predict the water is safe from bacteria. They point to data from SE Asia that shows that both the quantity and quality of water sources are made worse by human hygiene, water handling and sanitation practices.

The team argues for more targeted research on effective strategies for improving the safety of drinking water supplies.

## DGHI EVIDENCE LAB

DGHI has launched the Evidence Lab to fill a need for rigorous evaluation of global health programs and technologies under real-world conditions. Led by Rae Jean Proeschold-Bell, it will partner with Duke faculty and collaborators to extend research to diverse cultures and settings. With a lens toward improving policy and practice, the Lab will use a range of rigorous and innovative research design methods including formative evaluation, impact evaluation, and policy research and dissemination.



# THE FUTURE OF GLOBAL HEALTH

## A TWO-TIME BLUE DEVIL COMBINES MEDICINE AND GLOBAL HEALTH

Driven by a passion to care for patients and communities in need, Joseph Reardon, T'09 returned to the place where his love of global health started. Since completing medical school at Harvard in 2013, he is now pursuing the emergency medicine residency at Duke.

Reardon's global health experience began as an undergraduate studying biology and global health, when he developed community-based public health programs in Latin America. Today, he is studying communicable disease in vulnerable populations and has published several papers on malaria

resistance and the time burden of alcohol hand sanitizer with non-sterile gloves. Most recently, he's collaborating with DGHI faculty Gerald Bloomfield and Catherine Lynch on a study of the known prevalence of, and need for more data on acute myocardial infraction, or heart attack, in sub-Saharan Africa.

Reardon says he's excited to be back in Blue Devil country and to receive the advanced skills and opportunities to continue his work. His motto is "global is local," and he has already made a positive impact on the fields of medicine and global health globally and locally.



"Global health helped me discover that I can have the greatest impact working as an academic emergency physician focusing on communicable disease prevention."

# 375

completed global health education programs since 2008

# 20%

of global health undergraduates complete a honor thesis (or double thesis)

# 73%

of MSc-GH alums are working in the field of global health or pursuing further education

# 16

medical trainees have completed the global health residency/fellowship pathway since 2008

Cervical cancer death rate in Haiti is

**30 times** higher than the U.S.

## PREVENTING CERVICAL CANCER IN HAITI



Johane Philogene, MSc-GH '14, is a pioneer in the effort to screen Haitian women for human papillomavirus (HPV)— which can cut short a woman's life if left untreated. For years, Philogene has worked for Fondation pour la Santé Reproductrice et l'Éducation Familiale (FOSREF), which in 2013 partnered with DGHI collaborators at Family Health Ministries and the Clinton Bush Haiti Fund to open the nation's first HPV lab.

With a desire to gain practical research skills that was applicable to her work in Haiti, she pursued the Duke Master of Science in Global Health. As she completed her degree, she was promoted to Deputy Director of FOSREF and now oversees its programs and clinics which serve thousands of women each month.

Philogene is making a difference in the lives of Haitian women while conducting valuable research to address the health needs of a nation she calls home.

## CHANGING THE WORLD, ONE YOUTH AT A TIME

Junjian Gaoshan, MSc-GH '14 wants to change the world, starting with making leaders out of today's youth. Since childhood, he's been an outspoken voice for youth education and education rights.

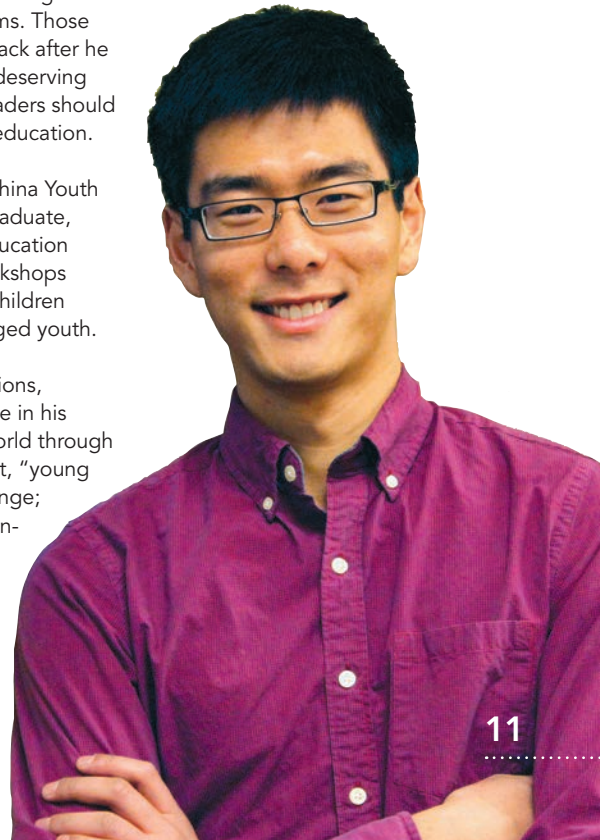
Since completing the MSc-GH, Gaoshan has returned to his home country of China to work on adolescent development and sexual and reproductive health programs at the United Nations Population Fund in Beijing. He was also selected to serve on the board of the youth advocacy group on the United Nation's Global Education First Initiative.

Gaoshan first became passionate about leveling the playing field for all youth when the local Chinese education authority removed

humanities subjects from high school graduation exams. Those subjects were added back after he argued that youth are deserving of, and government leaders should value, a well-rounded education.

While working at the China Youth Network as an undergraduate, he led peer-to-peer education leadership training workshops with Chinese migrant children and other underprivileged youth.

Now at the United Nations, Gaoshan is unstoppable in his quest to change the world through education. As he puts it, "young people can initiate change; they are the only sustainable way forward."



# MEET DUKE'S CHANGEMAKERS IN GLOBAL HEALTH

Learn more about these inspiring individuals in the digital issue at [impact.globalhealth.duke.edu](http://impact.globalhealth.duke.edu)



**ROBERT MALKIN**

Inventor of the Pratt Pouch which was named one of the World Health Organization's Top 10 Most Innovative Health Technologies



**JOSH GREENBERG**

Founder of Progressive Health Partnership in Uganda and 2014 Emerging Leader in Global Health by Consortium of Universities for Global Health



**DAVID BOYD**

Inspirational educator and mentor to Duke global health students; 2013 DGHI Excellence in Mentoring Award winner



**BARTON HAYNES**

Renowned researcher who discovered an early and effective immune response to the HIV virus that is a first step toward an effective vaccine for HIV/AIDS



**LISA DENG**

Fulbright scholar working with local physicians in Malaysia to improve palliative care for patients with advanced cancer



**LAURA ELLEN MUGLIA**

Benefactor of the Student Research Training Program which provides students with life-changing experiences that improve global health



**MUHAMMAD PATE**

DGHI Visiting Scholar and former Minister of State for Health of Nigeria received the 2014 Geneva Forum for Health Award for his efforts to make Nigeria polio-free



**RAJVI MEHTA**

Ambitious Duke medical student and inventor of the high-protein GuDNesSs bars aimed at combating anemia in India



**JIANI SUN**

One of the first graduates of the Duke MSc-GH, now working with the World Health Organization to make China tobacco-free

“Duke has excelled in preparing students and future physicians for successful careers in global health.”

— EXCERPT FROM  
2014 EXTERNAL REVIEW REPORT



**KATIE GUIDERA**

Recognized by Clinton Global Initiative for her Malaria Awareness Program which promotes local health solutions through community health education and social entrepreneurship initiatives in rural South Africa



**GERALD BLOOMFIELD**

Global health fellow turned Duke Medicine faculty member who is studying the global shift from infections to chronic disease in East Africa



**JIM ZHANG**

Distinguished global environmental health researcher named fellow of the American Association for the Advancement of Science



# AT A GLANCE

## LEADERSHIP TEAM

John Bartlett  
*Associate Director, Research*

Josh Bond  
*Development Director*

Dennis Clements  
*Senior Advisor*

Ralph Corey  
*Director, Hubert-Yeargan Center  
for Global Health*

Randall Kramer  
*Deputy Director*

Michael Merson  
*Director*

Geelea Seaford  
*Associate Director, Communications*

Mary Story  
*Associate Director,  
Academic Programs*

Shenglan Tang  
*Associate Director,  
DKU and China Initiatives*

Christine Tobias  
*Associate Director,  
Administration and Finance*

Kathryn Whetten  
*Director, Center for Health Policy  
and Inequalities Research*

## CENTERS:

- Center for Health Policy and Inequalities Research
- Center for Global Women's Health Technologies
- DKU Global Health Research Center
- Hubert-Yeargan Center for Global Health

## EXECUTIVE COMMITTEE

Ian Baucom  
*Franklin Humanities Institute*

Philip Cook  
*Sanford School of Public Policy*

Ralph Corey  
*Hubert-Yeargan Center for  
Global Health*

Coleen Cunningham  
*Pediatrics*

Elizabeth Frankenberg  
*Sanford School of Public Policy*

Mariano Garcia-Blanco  
*Molecular Genetics and Microbiology*

Craig Henriquez  
*Pratt School of Engineering*

Joy Liu  
*Undergraduate Student  
Representative*

Robert Malkin  
*Pratt School of Engineering*

Gil Merx  
*Vice Provost, International Affairs*

Angela O'Rand  
*Trinity College of Arts and Sciences*

Truls Ostbye  
*Community and Family Medicine*

Eric Peterson  
*Cardiology*

Dorothy Powell  
*School of Nursing*

Arti Rai  
*School of Law*

Victoria Rendell  
*Graduate Student Representative*

Kevin Schulman  
*Fuqua School of Business*

David Toole  
*Divinity School*

Jeffrey Vincent  
*Nicholas School of the Environment*

Kent Weinhold  
*Immunology and Surgery Sciences*

Erika Weinthal  
*Nicholas School of the Environment*

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Tropical Medicine*

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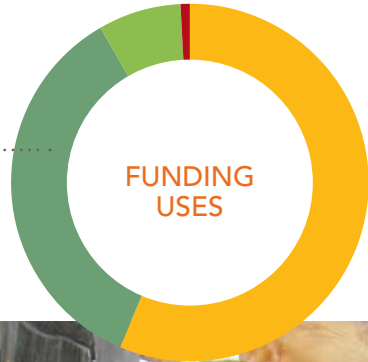
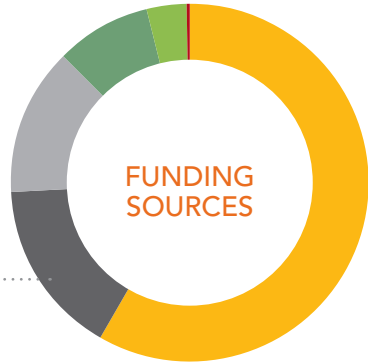
**FINANCIALS**

Sponsored Projects	\$ 10,166,358	●
Campus Support	2,734,450	●
School of Medicine Support	2,327,463	●
Tuition/fees	1,528,744	●
Gifts/Endowment income	593,626	●
Other	91,000	●

**TOTAL** \$ 17,441,641

Personnel	\$ 9,772,369	●
Other/non-payroll	\$ 6,099,794	●
Scholarships/fellowships	\$ 1,281,326	●
Pilot Grant Awards	\$ 183,000	●

**TOTAL** \$ 17,336,489



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[globalhealth.duke.edu/diaries](http://globalhealth.duke.edu/diaries)





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Join the nation's most vibrant and growing global health community by supporting the Duke Global Health Institute.

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