

2015-2016
IMPACT
REPORT



Duke

GLOBAL HEALTH
INSTITUTE

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Students Chioma Iwelumo (center) and Rajan Patel discuss their global health capstone project with DGHI professor Mary Story

MISSION STATEMENT

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 train the next generation of global health leaders.

Center for Health Policy and Inequalities Research
Center for Global Women's Health Technologies
Duke Kunshan University Global Health Research Center
Duke Hubert-Yeargan Center for Global Health
Duke Global Digital Health Science Center

DIRECTORS:

KATHRYN WHETTEN
NIMMI RAMANUJAM
SHENGLAN TANG
RALPH COREY
GARY BENNETT

AFFILIATED CENTERS

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DIGITAL ISSUE

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Health fair in Naama, Uganda, co-organized by a DGHI undergraduate student research team

A MESSAGE FROM THE DIRECTOR

Dear friends,

In 2016, DGHI celebrates its 10th anniversary, a milestone reached thanks to the vision of Duke University leadership, the commitment of our faculty and staff, the collaborative spirit of our partners at Duke and around the world, the inspiration we receive each and every day from our students, and the generous financial support of donors. As DGHI's founding director, I am humbled to reach this anniversary and thank the many who helped us achieve it.

In these 10 years, more than 80 faculty members have joined the Institute from across Duke's campus, weaving a rich interdisciplinary network of educators, researchers and practitioners. Nearly 60 of them were drawn to Duke because of the Institute's presence. Our faculty have formed the foundation of our robust and growing education programs, most recently the growth of our undergraduate program, which began in 2013. There are now 250 Duke undergraduates co-majoring or minoring in global health.

With our diverse faculty complement, our research program has grown to encompass seven priority areas that reflect the global burden of disease in low and middle income countries. Moreover, DGHI's five centers showcase our expertise in areas such as women's health technologies, digital health and health inequalities. Our faculty members are working on projects in nearly 40 countries around the world, helping to advance our mission of reducing health disparities.

Over the past decade, we have focused much of our investment in research and education on the now-12 Priority Partnership Locations. At each of these locations, we have developed a quantifiable depth and breadth of activity with colleagues at institutions that share our passion for improving health. Last year, we extended our partner network to Lima, Peru, an excellent base from which to expand into Latin America.

In the past year, we received high marks for our Master of Science in Global Health from a team of external reviewers. Chris Woods has been the faculty director from day one and has been integral to the program's growth and success. I join many who are grateful to Chris for his service as he hands over leadership of the program to assistant professor Melissa Watt and professor Nathan Thielman. This fall, we enrolled the largest number of students to date in the program.

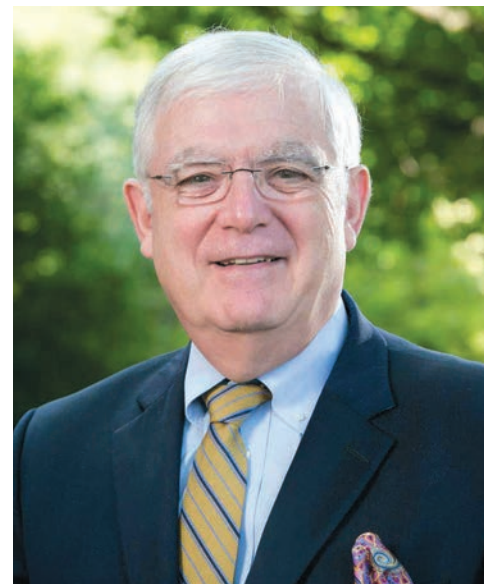
In this report, you'll read in detail about many other successes in the past year. We were delighted to begin a new chapter of the Medical Education Partnership Initiative with DGHI's associate director of research, John Bartlett, and his colleagues at several Tanzanian institutions, including our long-time partners at Kilimanjaro Christian Medical University College. We helped establish the first division of global neurosurgery and neuroscience in the U.S., under the leadership of professor Michael Haglund, recognizing the immense global surgery burden. We sent more students into the field than ever before. And we advanced more than halfway in matching the \$10 million challenge grant set forth by the Bill & Melinda Gates Foundation, helping to ensure the Institute's sustainability.

I hope you enjoy reading this report. Thank you for sharing in our success.

Yours in health,

MICHAEL MERSON, MD

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



COVER PHOTO

Trabajo Infantil (Child Labor), by Jaclyn Karasik, winner of the 2015 DGHI annual student fieldwork photo contest. Jaibalito, Santa Cruz la Laguna, Guatemala.

Children carry loads of building materials up the hill to help with the construction of a home. Child labor is common in Santa Cruz, and lifelong exposure to the hard work of carrying loads often leads to chronic pain and arthritis.

LEADERSHIP TEAM

JOHN BARTLETT	Associate Director, Research
JOSHUA BOND	Development Director
DENNIS CLEMENTS	Senior Advisor
DIANA HARVEY	Associate Director, Communications and Marketing
RANDALL KRAMER	Deputy Director
MICHAEL MERSON	Director
MARY STORY	Associate Director, Academic Programs
SHENGLAN TANG	Associate Director, Duke Kunshan University and China Initiatives
CHRISTINE TOBIAS	Associate Director, Administration and Finance
GAVIN YAMEY	Associate Director, Policy

The DGHI Board of Advisors and members of DGHI's leadership team welcomed Duke President Richard Brodhead during their bi-annual meeting in April 2016



LESLIE BAINS	Corporate Board and Non-Profit Director and Trustee
STEFANO BERTOZZI	University of California, Berkeley
BRIAN CLEMENT	L.E.K. Consulting
MICHAEL DEE	Greater Houston Partnership
CHRIS ELIAS	Bill & Melinda Gates Foundation
PAUL FARMER	Partners in Health
R. TYLER FRIZZELL	St. Luke's Boise Medical Center
PAPE GAYE	IntraHealth International
DAVE GENDELL	Tontine Associates
THOMAS M. GORRIE	DGHI Board Chair; T.M. Gorrie & Associates
JENNIFER GROSS	Blue Chip Foundation
LARRY HOLLIER	Baylor College of Medicine, Texas Children's Hospital
ANDREW HUANG	SunYat-Sen Cancer Center
ELAINE LEAVENWORTH	Abbott
JACK LESLIE	Incoming DGHI Board Chair; Weber Shandwick
CHRISTINE MCKENNA	Global Health Strategies
LAURA ELLEN MUGLIA	The Laura Ellen and Robert Muglia Family Foundation
PETER PIOT	London School of Hygiene and Tropical Medicine
ALAN SCHWARTZ	Guggenheim Partners
ROBERT STEEL	Perella Weinberg Partners

BOARD OF ADVISORS

DGHI BY THE NUMBERS

EDUCATION



ENROLLED



GRADUATED

	UNDERGRADUATE MAJOR MINOR	MASTER OF SCIENCE	DOCTORAL CERTIFICATE	DOCTORAL SCHOLARS	DORIS DUKE FELLOWS
ENROLLED	145 104	69	16	8	3
GRADUATED	59 61	34	2	3	n/a



PEOPLE

FACULTY	AFFILIATES	ADJUNCTS	STAFF
77	50	8	66



RESEARCH

ACTIVE EXTERNALLY FUNDED GRANTS AND CONTRACTS AWARDED TO DGHI FACULTY

\$34M
budget

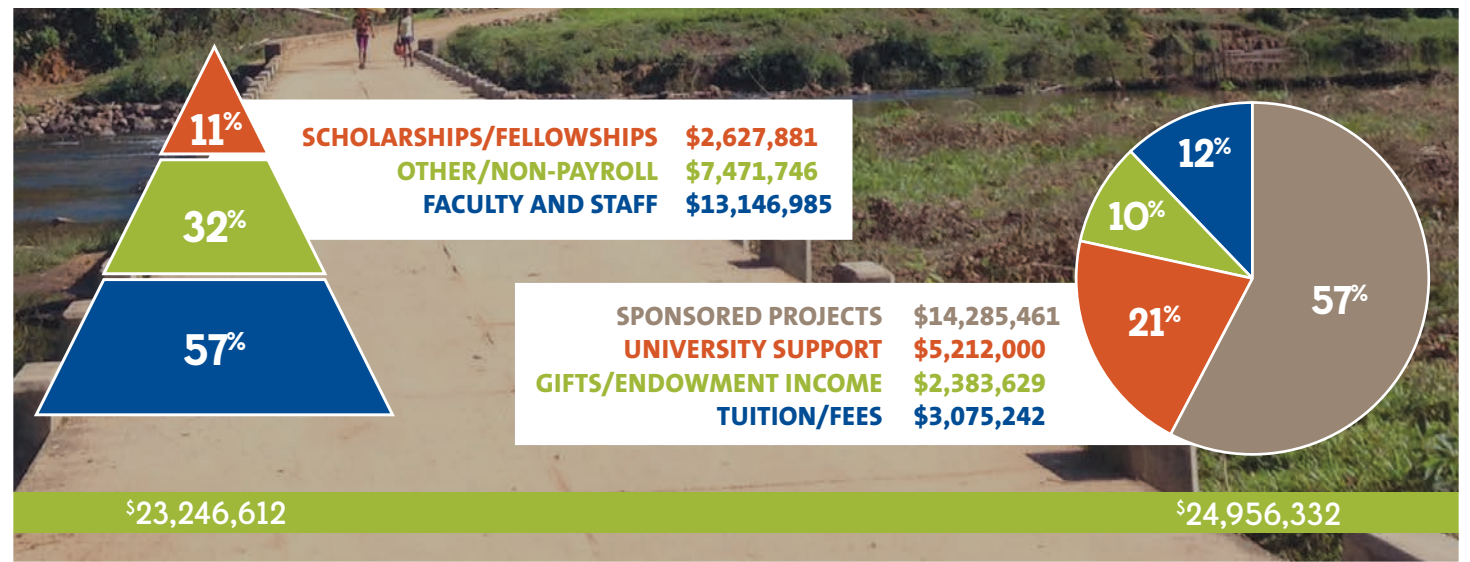
152
sponsored
projects



FINANCE

FUNDING USES

FUNDING SOURCES



EDUCATION

DGHI's undergraduate and graduate education programs prepare students to engage in the world with a broad perspective about how the health of individuals and populations is determined, how health can be improved and how disparities can be reduced across the globe. Professors with expertise in areas such as biology, anthropology, economics, theology, public policy, psychology and medicine help students think critically about how best to address some of our society's most vexing global health challenges.

DGHI brings the world's best scientists, researchers and thought leaders together under the broad umbrella of global health to teach and inspire our students. Students are drawn to global health from a variety of backgrounds and disciplinary interests, making for rich and lively classroom discourse.

Our graduates pursue a variety of career paths. Some become physicians, researchers or professors, while others work for non-profit organizations or government agencies. Still others enter the private sector or pursue social entrepreneurial ventures.

NOTEWORTHY

Tech-Enabled Courses: DGHI Professors without Borders

This spring, several DGHI professors leveraged videoconferencing and online technology to maximize their student reach across DGHI and Duke Kunshan University Master of Science in Global Health programs. Based in Durham, professor Jeffrey Moe taught a health systems course to Duke Kunshan students and professor Shenglan Tang taught an implementation science course simultaneously to students at both campuses. Across the world, three DGHI professors working at institutions in Tanzania, Kenya and Sri Lanka teamed up to deliver an online course in infectious disease epidemiology.

Duke Hosts 42 Scholars for One Health Training Program

This summer, Duke hosted its second annual One Health Training Program, led by DGHI professor Greg Gray. The 42 participants, including eight global health graduate students from DGHI and Duke Kunshan University, hailed from nine different countries. The trainees engaged in a variety of unique One Health-related learning experiences, such as two days of intensive study of mosquitoes and ticks and receiving a behind-the-scenes food safety tour of a North Carolina beef processing plant.

One Health Training Program scholars learn about food safety procedures at North Carolina State University dairy farm



Recent Global Health Grad Gives Women a Voice through Entrepreneurship

Global health and economics co-major Suhani Jalota '16, a Baldwin Scholar from India, actively sought out social entrepreneurship opportunities and won several entrepreneurship competitions during her time at Duke.

As a participant in the Melissa & Doug Entrepreneurs program, she founded the Myna Mahila Foundation, a startup to produce low-cost, high-quality sanitary and medical pads while empowering women living in the slums of Mumbai to develop business skills, earn money and raise awareness about menstrual hygiene. Jalota has established a manufacturing unit and oversees a staff of 15 full-time employees who produce about 500 pads per day.

This spring, *Glamour Magazine* took notice of her success, naming her one of this year's top 10 college women. After graduating, Jalota returned to Mumbai to focus on her foundation for a few months. In the fall, she'll join the staff of IDinsight, where she'll conduct impact evaluation research on economic development projects.

Suhani Jalota
UNDERGRADUATE

"The professors at DGHI have been instrumental in my understanding of not only health systems and vulnerable populations, but also about the attitude one should have when interacting with people and facing the difficult realities in the work we do."



Suhani Jalota (far right), oversees a staff of 15 full-time employees who produce about 500 pads per day

Master's Student Left Impression in South Africa and on Campus

Tatenda Yemeke, a 2016 Master of Science in Global Health (MSc-GH) graduate from Zimbabwe, received the outstanding graduate student of the year award. In one of his nominations, his advisor and director of DGHI's global mental health initiative, Kathleen Sikkema, described him as curious, respectful, insightful, bright and hard-working—but noted that “most importantly, Tatenda is resilient.”

For his MSc-GH thesis, Yemeke examined the prevalence of sexual trauma and mental health symptoms among women in a public HIV clinic in Cape Town, South Africa, and explored opportunities to integrate routine screening for trauma into clinical care. In addition to his academic work, Yemeke promoted the positive representation of African students and African culture on campus; one of his legacies is his co-founding of the Duke African Graduate and Professional Students Association.

What's next for Yemeke? He's hoping to land a research position in an academic setting while he considers his long-term options, including pursuing a PhD.

Tatenda Yemeke MASTER'S PROGRAM

“Beyond being experts in their fields, I found the faculty to be very caring and invested in my success and professional development. I felt supported throughout the program.”

Tatenda Yemeke (center) with Melissa Watt (left), associate director of the MSc-GH program, and his advisor, Kathleen Sikkema



Doctoral Student Explores Relationship between Beliefs and Health Decisions

Elisa Maffioli, a fourth-year PhD student in economics from Italy, joined the Doctoral Scholars program in 2015. Her research interests lie at the intersection of development economics and health economics. Maffioli studies the relationships between people's beliefs, perceptions and behavior in different contexts related to diseases. She's working with DGHI faculty members Wendy Prudhomme-O'Meara, Erica Field and Manoj Mohanan.

For her dissertation, Maffioli is exploring how the recent Ebola outbreak in Liberia affected individual perceptions and trust toward a wide range of institutions, including actors in the health system. Ultimately, she hopes the results of her project will inform policy makers and stakeholders on how the government should work to rebuild trust in communities after a contagion.

Maffioli believes these factors will have a considerable impact in the post-Ebola recovery period of the countries affected.

Elisa Maffioli
DOCTORAL SCHOLAR

“Interaction with students and faculty from different fields has helped me learn how to work and collaborate across many disciplines. This is definitely a strength of the Doctoral Scholars program. I also appreciate the opportunities the program provides, such as presenting at seminars.”

EXPERIENTIAL LEARNING

Getting students out of the classroom and into the field, where they can put their classroom lessons to work, is a hallmark of DGHI's education programs. Last year, 124 students worked in 25 countries around the world.

Undergraduates have several fieldwork options. For example, they can apply to be a member of one of the Student Research Training (SRT) teams that are mentored by a DGHI faculty member and local community partner. Or they can explore global health issues through topic-focused, interdisciplinary research teams as part of Duke's Bass Connections initiative. Bass Connections teams also include graduate and medical students. In 2015-2016, there were seven global health-themed Bass Connections projects.

The 10-week field experience is one of the draws of DGHI's Master of Science in Global Health. Master's students identify a research project and develop their thesis in the field. Often, their thesis becomes the basis for publication in a peer-reviewed journal. Students in DGHI's doctoral tracks undertake a short field experience or more intensive dissertation research focused on global health.

Students Explore Human Side of Engineering

There are many barriers to screening and treating women for cervical cancer in low and middle income countries, including access to clinics, shortage of pathologists and a lack of equipment such as colposcopes. DGHI professor Nimmi Ramanujam has developed a device called a POcKeT (Point Of Care Tampon) colposcope that is significantly smaller, less expensive and easier to use than a state-of-the-art digital colposcope, but equally as good in image quality. The latest generation is battery-powered and can transmit data to a smartphone.

Master of Science in Global Health candidate Denali Dahl is collaborating with clinicians at the Lima, Peru-based Cancer League to conduct pilot clinical studies. Early results show equivalence between the two devices. Dahl, who studied nanoengineering as an undergraduate, enjoys exploring the human side of engineering.

Manish Nair, a senior majoring in biomedical engineering and global health, is exploring how to bring the POcKeT colposcope to market in Peru. He is meeting with physicians, representatives from pharmaceutical and device companies and officials who regulate food and drugs in Peru, laying the groundwork for a 2016-2017 Bass Connections in Global Health project.

PERU



Manish Nair (left) and Denali Dahl demonstrate how the POcKeT colposcope interacts with a smartphone

"This project allows me to look at the cultural significance of a device and its affordability, as well as consider the larger issue of social injustice as it relates to technology."
Denali Dahl

NOTEWORTHY

Student Research Training Program Celebrates Five-Year Anniversary

This year marks the fifth anniversary of DGHI's Student Research Training (SRT) Program. Through this program, 110 undergraduates have completed global health fieldwork in 11 countries on three continents. The SRT program is a competitive, intensive research experience in which students develop, implement and assess a community-based project in collaboration with a DGHI faculty member and partner organization at the field site.

Team Studies Depression among New Moms

KENYA

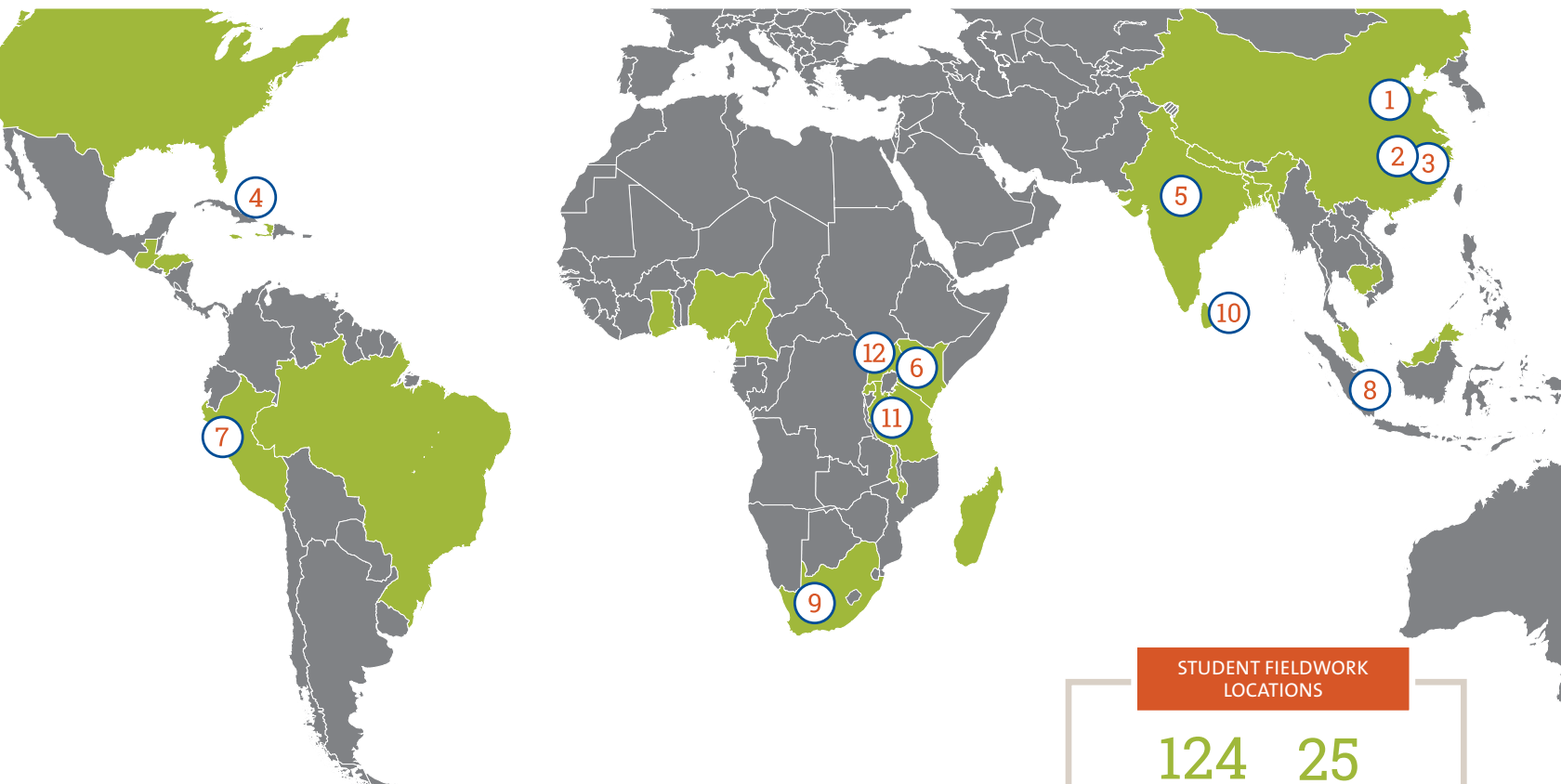
Master of Science student Hawa Tuli and undergraduate Christina Schmidt worked with assistant professor Eric Green and Kenyan colleagues at Moi University to develop and validate a depression screening tool for health workers to use with pregnant women and new moms.

Green's team used pilot funding from DGHI to develop screening questions and then recruited a random sample of women for a screening survey, clinical interview, and voice recording exercise. The work identified a small set of screening questions that could identify cases of a major depressive episode in this cultural context. The team is examining how vocal acoustic biomarkers might be associated with depression among Kenyan women.

Tuli and Schmidt were a great match for this fieldwork assignment, according to Green. A bilingual English-Swahili speaker, Tuli was able to lead discussion groups with health workers and patients. Schmidt worked alongside Tuli to trouble-shoot problems and keep the team on track. Green, who has mentored several student research teams, has been struck by the power of pairing graduate students with undergraduates on global health research projects.

"The model provides good mentorship opportunities for the grad students. And they benefit from having help from really smart, inquisitive undergraduates."
Eric Green

WHERE WE WORK



PRIORITY PARTNERSHIP LOCATIONS

STUDENT FIELDWORK LOCATIONS
124 STUDENTS 25 COUNTRIES
Countries shaded green denote places where students participated in experiential learning projects in 2015.

- | | | |
|--------------------|--------------------|----------------------------|
| 1. Beijing, China | 5. Delhi, India | 9. Cape Town, South Africa |
| 2. Kunshan, China | 6. Eldoret, Kenya | 10. Galle, Sri Lanka |
| 3. Shanghai, China | 7. NEW: Lima, Peru | 11. Moshi, Tanzania |
| 4. Leogane, Haiti | 8. Singapore | 12. Kampala, Uganda |

PARTNERSHIPS

Achieving our mission of reducing health disparities is possible only through mutually beneficial relationships with partner institutions around the world who share our passion for improving health and educating the next generation of global health leaders. We celebrate the discoveries we make together in the lab and in the field that will make a difference in the lives of people and their communities, and we continually look for new ways to collaborate. Over the past decade, DGHI has built a robust network of partners around the world with whom we are proud to share our successes.

NOTEWORTHY

Lima, Peru Added as Priority Partnership Location

DGHI faculty and students engage in research projects in Lima focusing on global environmental health, global cancer and women's health.

Partners include the Ministries of Health and Environment, Association for the Conservation of the Amazon Basin, and the Peruvian League to Fight Against Cancer.

Duke Kunshan University and Jiangsu Government Launches Ozone Research Center

In November, the Environmental Protection Department and the Commission of Health and Family Planning in China's Jiangsu Province joined forces with Duke Kunshan University to launch the Regional Ozone Sino-U.S. Collaborative Research Center (ROSUC). The center is based at Duke Kunshan, one of DGHI's priority partners.

Led by DGHI and Duke Kunshan professor Jim Zhang, ROSUC conducts cutting-edge research on ozone formation, distribution and health effects with the goal of supporting policies that target cost-effective controls in the region.



The new Carmelle Voltaire Women's Health Center in Fondwa, Haiti

Family Health Ministries Builds Women's Health Center in Haiti

In rural Haiti, most women give birth in their homes because they don't have access to a health care facility. But women in Fondwa now have a safe place to give birth. This February, DGHI partner Family Health Ministries (FHM) dedicated the new Carmelle Voltaire Women's Health Center, complete with exam rooms, birthing suites, education space, a nursery, a pharmacy and guest rooms. FHM was co-founded by DGHI associate professor David Walmer and adjunct faculty member Kathy Walmer. The Walmers have staffed the clinic with Haitian providers.

KCMUC medical students engage in team-based learning, a new approach introduced as part of the MEPI collaboration



"The learning management system has made a greater impact on student competencies and outcomes than any other intervention."

Kien Mteta
Director General,
Bugando Medical Center

Two-Decade Partnership Is Building Clinical, Research Capacity

TANZANIA

Duke University has partnered with the Kilimanjaro Christian Medical University College (KCMUC) and Kilimanjaro Christian Medical Center (KCMC) in Moshi, Tanzania, for more than 20 years, most recently through the Medical Education Partnership Initiative (MEPI).

The first cycle of MEPI (2010-2015), funded by the U.S. Health Resources and Services Administration, focused on strengthening medical education in Tanzania. According to DGHI associate director for research and co-principal investigator John Bartlett, "It was a smashing success. KCMUC increased its class size from 120 to 276 medical students, we supported 55 mentored research projects and the graduating doctors are staying in Tanzania."

Several of the partners cite the implementation of the learning management system, developed at the Duke School of Medicine and donated to KCMUC as part of MEPI, as one of the most impactful outcomes of the project. In the fall of 2015, the Fogarty International Center awarded KCMUC funding for a second cycle of MEPI.

In addition to DGHI, KCMC and the Bugando Medical Center, partners include the Catholic University of Health and Allied Sciences (CUHAS) in Mwanza and Weill Cornell Medical College in New York.

Through this five-year, \$3 million project, the MEPI team will work to bolster the research capacity of junior faculty and research support staff at KCMC and CUHAS, with a focus on implementation science and health services research.

"The phrase 'capacity building' is frequently used and often unrealized," said Bartlett. "MEPI's success in truly building capacity has set KCMC on the course for leadership in medical education and research in all of Africa."

NOTEWORTHY

Duke Global Neurosurgery and Neuroscience Division Established

Duke Global Neurosurgery and Neuroscience (DGNN), a division of the Department of Neurosurgery, was recently established to improve access to health care and patient outcomes, strengthen health systems and inform policy in low and middle income countries. The center's goal is to have 20 neurosurgeons across Uganda, operating with modern equipment, by 2022.

DGNN's roots trace back to 2007, when DGHI's Michael Haglund, DGNN director, established Duke's collaboration with Mulago Hospital/Makerere University College of Health Sciences in Kampala, Uganda.



Michael Haglund (center) and his team discuss pending neurosurgery cases at Mulago Hospital in Kampala, Uganda

RESEARCH

RESEARCH PRIORITY AREAS

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

DGHI's research program transcends traditional disciplinary and geographic boundaries, infusing research teams with new energy and a breadth of perspectives that take projects in interesting new directions. Anthropologist meets infectious disease physician, psychologist meets nutritionist, biomedical engineer meets economist: this is how we work to reduce health disparities locally and around the world.

DGHI has developed a dynamic research agenda that reflects the changing global burden of disease and catalyzes discovery among faculty across Duke University and with our broad network of collaborators around the world.

The DGHI Evidence Lab works with Duke colleagues as well as global NGOs and social enterprises working in low-resource settings, on USAID, NIH and foundation-funded research projects to evaluate interventions, programs and technologies.

In 2015-2016, the Evidence Lab worked to develop lean evaluation tools for health care enterprises in East Africa and India, funded by USAID through the Social Entrepreneur Accelerator at Duke (SEAD) program. The Evidence Lab also consults with USAID on evaluation challenges faced by private sector innovators.

"DGHI faculty are on the forefront of global health research in critical areas such as One Health, which studies the emergence of animal infections in humans, and global mental health, an increasingly recognized cause of global morbidity and mortality."

John Bartlett
Associate Director for Research

DGHI professor Gregory Gray and a camel merchant in Nouakchott, Mauritania, where Gray is conducting research funded by the U.S. Department of Defense on novel viruses contracted by people from exposure to camels



Diverse Partners Unite to Understand Causes of Severe Fever

As of 2008, more than 60 percent of patients admitted with fever in northern Tanzania were diagnosed with malaria, but less than two percent of those patients actually had the disease. Rather, the patients' illnesses included bacterial, mycobacterial, fungal and arboviral infections and diseases.

In a new NIH study, adjunct DGHI faculty member John Crump is co-leading a research team that is attempting to better understand the causes of death among patients admitted to hospital with severe fever in northern Tanzania. Ultimately, the team plans to identify interventions that could avert fatal outcomes among these patients.

Crump is co-leading the project with DGHI's Matthew Rubach and longtime collaborator Venance Maro of the Kilimanjaro Christian Medical Centre (KCMC); other team members include DGHI's Linfa Wang, Elizabeth Turner and Chris Woods, as well as researchers from other institutions. Each partner brings unique expertise, including pathogen discovery, biostatistics, diagnostics, health systems, medical anthropology and infectious diseases pathology.

Another project goal is to strengthen pathology services in northern Tanzania, where these services are among the most neglected components of the health system. International experts will mentor KCMC pathologists and other scientists on infectious diseases pathology, autopsy and pathogen discovery techniques.

Emerging Infectious Diseases

TANZANIA



NOTEWORTHY

DGHI Professor Shapes Dietary Policy in U.S.

"By focusing on small shifts in what we eat and drink, eating healthy becomes more manageable."

Mary Story

Professor of Community and Family Medicine
and Global Health

"Protecting the health of Americans includes empowering them with the tools they need to make healthy choices in their daily lives," said global health and community and family medicine professor Mary Story, who was among a group of prestigious researchers who served on the advisory committee that developed the 2015-2020 Dietary Guidelines for Americans.

Global Environmental Health PERU



DGHI research analyst Ernesto Ortiz tests a child for anemia as part of the mercury exposure study that led to the state of emergency

DGHI Research Leads to Emergency Declaration

It's gratifying when global health research affects policy. This was the case when Peru's federal government declared a state of emergency after the publication of a report by DGHI researchers showing the distressing impact of gold mining on the health of people living downriver from mines in the Peruvian Amazon.

Mercury used in the gold extraction process ends up in waterways and accumulates in fish—a key source of food for people in Peru's Madre de Dios region. William Pan, assistant professor of global environmental health, and his colleagues found high levels of mercury in hair samples in 40 percent of the residents they tested. According to Pan, the presence of mercury in hair indicates a person's exposure to mercury through something they ate.

Mercury can have toxic effects on the nervous, digestive and immune systems, and it's particularly dangerous to developing fetuses. The World Health Organization considers mercury one of the top ten chemicals representing a major public health concern.

The Peruvian government's response includes providing the local population with a protein source other than fish. They're also considering distributing quinoa, the consumption of which has been correlated with lower mercury levels.

Associate Professor Sallie Permar

NOTEWORTHY

DGHI Laying Groundwork for Zika Vaccine

Building on her extensive work on perinatal virus infections and HIV vaccine development, affiliate DGHI faculty member Sallie Permar is leading a DGHI-funded pilot study that will help build the knowledge needed to inform a successful Zika vaccine.

Permar is working with DGHI's Ralph Corey and Reynaldo Dietze, professor at Universidade Federal do Espírito Santo in Victoria, Brazil, to define natural maternal antibody responses against Zika and how they relate to fetal outcomes.



PUBLICATION HIGHLIGHTS

The Effect of Antidepressant Treatment on HIV and Depression Outcomes: The SLAM DUNC Randomized Trial | *AIDS* | Brian Wells Pence, Bradley Gaynes, Julie Adams, **Nathan Thielman**, Amy Heine, Michael Mugavero, Tina McGuinness, James Raper, James Willig, **Kristen Shirey**, Michelle Ogle, **Elizabeth Turner**, E. Byrd Quinlivan

Preferences for End-Of-Life Care Among Community-Dwelling Older Adults and Patients with Advanced Cancer: A Discrete Choice Experiment | *Health Policy* | **Eric Finkelstein**, Marcel Bilger, Terry Flynn, Chetna Malhotra

Seroepidemiological Study of Interepidemic Rift Valley Fever Virus Infection among Persons with Intense Ruminant Exposure, Madagascar and Kenya | *American Journal of Tropical Medicine and Hygiene* | **Gregory Gray**, **Benjamin Anderson**, Desirée LaBeaud, Jean-Michel Heraud, Eric Fèvre, Soa Fy Andriamandimby, Elizabeth Cook, Saidi Dahir, William de Glanville, Gary Heil, Salah Khan, Samuel Muiruri, Marie-Marie Olive, Lian Thomas, Hunter Merrill, Mary Merrill, Juergen Richt

Vaginal Self-Sampling for Human Papillomavirus Infection as a Primary Cervical Cancer Screening Tool in a Haitian Population | *Sexually Transmitted Diseases* | Joel Boggan, **David Walmer**, Gregory Henderson, **Nahida Chakhtoura**, Schatzi McCarthy, Harry Beauvais, Jennifer Smith

“Thinking Too Much”: A Systematic Review of a Common Idiom of Distress | *Social Science and Medicine* | **Bonnie Kaiser**, Emily Harocz, **Brandon Kohrt**, Paul Boltone, Judith Bass, Devon Hinton

High Road Utilizers Surveys Compared to Police Data for Road Traffic Crash Hotspot Localization in Rwanda and Sri Lanka | *BMC Public Health* | **Catherine Staton**, Vijitha De Silva, Elizabeth Krebs, Luciano Andrade, Stephen Rulisa, Badra Chandanie Mallawaarachchi, Kezhi Jin, **Joao Ricardo Vissoci**, **Truls Ostbye**

Prioritizing Surgical Care on National Health Agendas: A Qualitative Case Study of Papua New Guinea, Uganda, and Sierra Leone | *PLOS Medicine* | Anna Dare, Katherine Lee, Josh Bleicher, Alex Elobu, Thaim Kamara, Osborne Liko, Samuel Luboga, Akule Danlop, Gabriel Kune, Lars Hagander, Andrew Leather, **Gavin Yamey**

Intellectual Property Rights and Challenges for Development Of Affordable Human Papillomavirus, Rotavirus and Pneumococcal Vaccines: Patent Landscaping and Perspectives of Developing Country Vaccine Manufacturers | *Vaccine* | **Subhashini Chandrasekharan**, Tahir Amin, Joyce Kim, Eliane Furrer, Anna-Carin Matterson, Nina Schwalbec, Aurélia Nguyen

The Complex Relationship between Diet and Health | *Health Affairs* | Sara Bleich, Jessica Jones-Smith, Julia Wolfson, Xiaozhou Zhu, **Mary Story**

* DGHI authors listed in **bold**

This list represents a small sample of the more than 150 journal articles and book chapters published by DGHI faculty in 2015-2016.

Mobile App Improves Stroke Care and Outcomes

Cardiovascular
Disease and Obesity
CHINA

Stroke is the leading cause of death in China, and the socioeconomic burden of stroke survivors in China is substantial. Duke global health researcher Lijing Yan and her colleagues are addressing this challenge through several research projects aimed at primary care providers and family caregivers. And they're capitalizing on the ubiquity of mobile phones in China in their work.

Health care in rural Chinese villages is typically provided by community health workers who are not trained physicians. In one study, physicians trained community health workers to help participants in the intervention group manage their cardiovascular health by offering them medication and lifestyle reminders. The health workers received prompts and assistance to implement the intervention via a smartphone app that was custom-designed for the study.

Yan and her team found that this simple program improved quality of primary care and clinical outcomes. Participants in the intervention group had a 25 percent increase in their use of blood pressure medication, significantly greater use of aspirin and lower blood pressure compared to the control group. The results were published in *Circulation*.

“Technology appears to be a valuable tool to help community health workers achieve the goals of preventing and managing chronic disease. We are encouraged by the results of this study.”

Lijing Yan

Associate Research Professor of Global Health

PHILANTHROPY

Inspired by Ghana Trip, Jenn Gross Invests in DGHI Student Research

DGHI board member Jennifer Gross took her first trip to Africa in 2011 with Jeffrey Sachs, director of the Earth Institute at Columbia University, after her family made a philanthropic donation to the institute. As they were touring a hospital in Ghana, the young daughter of an HIV patient ran up to her and leapt into her arms. During that trip, Gross learned about health's integral role in lifting a population out of poverty, and she visited the African Union, where she witnessed governments creating health policy.

Deeply moved by this experience, Gross, a documentary photographer, has dedicated her life to solving global health problems. In 2015, she started the Blue Chip Foundation, which focuses on alleviating extreme poverty in the developing world, education in the United States and social enterprise.

This year, as part of DGHI's Bill & Melinda Gates Foundation Global Health Matching Grant, she established the Jennifer Gross Global Health Fund, a \$100,000 investment that will provide support for experiential learning and research opportunities for students at DGHI.

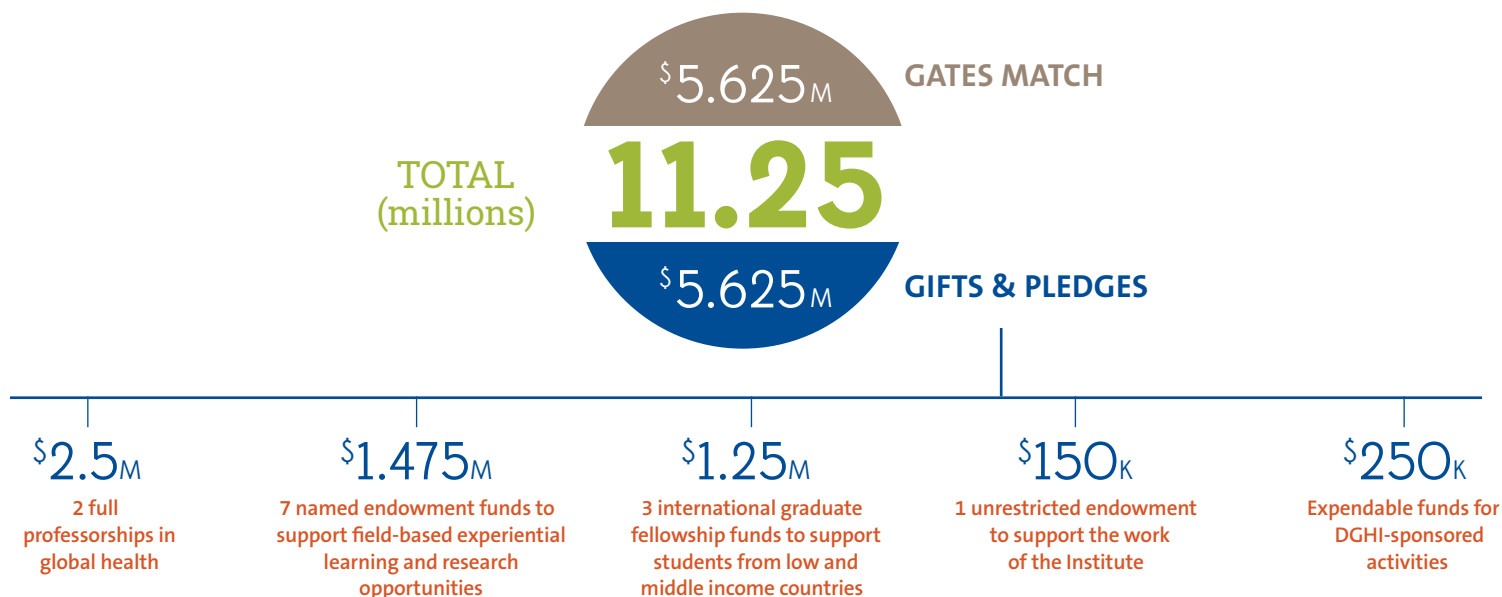
"With DGHI being a fairly new institute, I thought my donation was a great investment in helping it flourish. And I'm honored to be working in conjunction with the Gates Foundation."



Jenn Gross in Poton, Senegal, filming a documentary on the Millenium Villages Project in 2015

DGHI Surpasses Halfway Mark in Fundraising toward Matching Grant

In less than one year after receiving the \$10 million Bill & Melinda Gates Foundation Global Health Matching Grant, DGHI has raised more than half of the matching funds. In 2016, we have raised \$5,625,000 in gifts and pledges. The grant matches any qualifying gift dollar-for-dollar, for a total impact of \$11,250,000 in support of DGHI programs and endowed global health professorships. We are grateful to the Gates Foundation, our matching grant donors and all who support the work of the Institute.



Global health major Lorena Garcia (left) poses with students in Santa Cruz, Guatemala, where she participated in the Student Research Training program.

For more information about the Bill & Melinda Gates Foundation Global Health Matching Grant, contact:

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