

DEPARTMENT OF GLOBAL HEALTH
ANNUAL REPORT 2018



Groundbreaking research, education, and action to achieve sustainable health impact, at scale, with partners around the globe

WE HAVE ONE GOAL.

To achieve sustainable health impact,
at scale, with partners around the world.

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IMPROVING HEALTH AROUND THE WORLD

As one of the world's premiere global health research, education and training institutions, the Department of Global Health (DGH) is harnessing expertise and innovation across the entire university—and across the globe—to improve health and reduce health disparities.

Global health challenges run broad and deep. To tackle those challenges, our team of over 400 faculty draw from 15 of the 16 University of Washington (UW) schools and colleges and across more than 40 departments, from Anthropology to Bioengineering, and Nursing to Law. Ninety percent of our approximately 2,100 staff are based in low- and middle-income countries. Our faculty and staff work with colleagues in more than 130 countries to improve health. We partner with hundreds of organizations worldwide, from ministries of health and nongovernmental organizations to universities, hospitals and multilateral entities like the World Bank and the World Health Organization.

The world is our classroom. We teach undergraduate and graduate students on our Seattle campus; send UW students into the field via fellowships and exchanges; train U.S. and international students and professionals in in-country programs from Kenya to Peru to China; and make learning accessible to health workers around globe through our booming e-learning initiative. We're as committed to innovation in our teaching and training as we are to innovation in our research and interventions.

Our research, education, training, and capacity building focus on developing, testing and delivering successful interventions that result in improved health, at scale, for vulnerable people and communities most at risk for adverse health outcomes: children, adolescents, women, and people in low- and middle-income settings around the world, including in Seattle and across Washington State.

Our broad and deep work ranges from addressing gaps in the implementation of effective global mental health interventions to promoting systems-based approaches to help communities prepare for, cope with, and adapt to a changing climate; from conducting laboratory-based science in pathobiology and infectious diseases to finding vaccines and therapies, running clinical trials, improving prevention education and strengthening health systems.



UW students and faculty study and work around the world, from Kenya to Peru and beyond.

Our mission is to:

- Improve health for all through research, education, training, and service;
- Understand and address the causes of disease and health inequities at multiple levels;
- Collaborate with partners to develop and sustain locally-led, quality health systems, programs and policies.

ENABLING BETTER HEALTH GLOBALLY THROUGH

From laboratory bench studies through clinical trials to implementation science, we focus on and connect pioneering research, delivery, evaluation and capacity-building that result in global and national policy changes, program improvement and health impacts at scale.

In 2018, DGH included 18 global health centers, programs, and initiatives and won \$111 million in grant and contract awards for research. Following are highlights from 2018.

IMPROVING HEALTH OF WOMEN, ADOLESCENTS AND CHILDREN

PIONEERING HIV PREVENTION IN PREGNANT WOMEN IN KENYA

/ DGH's Global Center for Integrated Health of Women, Adolescents, and Children (Global WACH) is pioneering the delivery of pre-exposure antiretroviral prophylaxis (PrEP) in pregnant and lactating women in Kenya. Global WACH projects, funded by the National Institutes of Health and the President's Emergency Plan for AIDS Relief (PEPFAR), have provided PrEP to more than 4000 women – by far the largest evaluation of PrEP in pregnancy anywhere.

PrEP is a daily anti-HIV medication that a person who does not have HIV takes to prevent infection. If taken daily as prescribed, PrEP is highly effective in stopping the virus from taking hold and spreading throughout the body, but PrEP's effectiveness plummets if not taken regularly as prescribed. Addressing the barriers that stand in the way of adherence to an effective preventive regimen is key to success, so the Global WACH work will help identify the factors that can prevent women from starting and continuing to take PrEP.

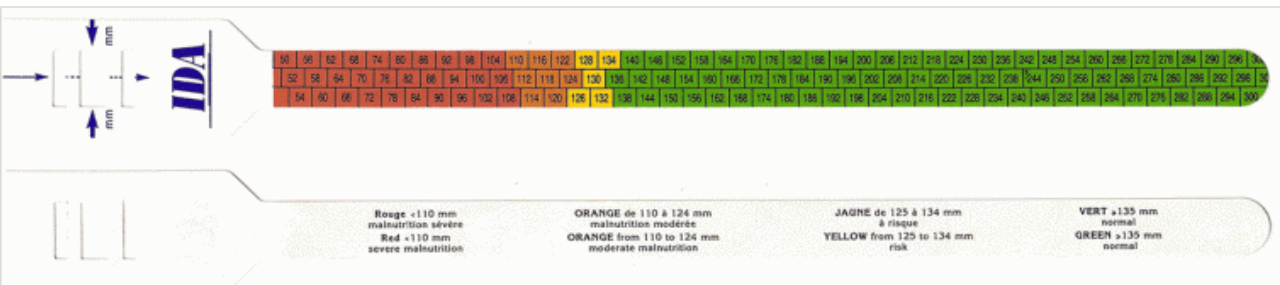
RESEARCH AND ACTION

WORKING WITH MOTHERS TO IDENTIFY EARLY CHILDHOOD MALNUTRITION

It is crucial to detect children with nutritional problems early as acute malnutrition weakens immune systems and leaves children vulnerable to infectious diseases. Acute malnutrition affects 52 million children, costs the global economy \$2.1 trillion, and contributes to 45% of deaths among children under five years of age annually. Malnutrition programs in limited-resource settings currently rely on community health workers to screen children for acute malnutrition by measuring their mid-upper arm circumference (MUAC). But what if mothers had the tools and training to quickly determine their child's nutritional status in their own homes and rapidly engage with nutritional services, if needed?

In a randomized controlled trial titled Maternal Administered Malnutrition Monitoring System (MAMMS), mothers in Kenya will learn how to measure their child's MUAC at six or nine-month immunization visits at a healthcare facility. At the six-month follow up, mothers will receive weekly text messages prompting them to measure and send their child's MUAC to a computer system, which will alert a health worker when a child with malnutrition is identified. This scalable childhood growth monitoring system could dramatically increase coverage of malnutrition screening and facilitate rapid engagement with nutritional services where necessary.

This novel idea has received the E.W. "Al" Thrasher Award, which is given to proposals that have the potential to translate into clinically meaningful results within a few years.



The MUAC band is color-coded to indicate nutritional status. The green zone indicates proper nourishment while the red zone indicates severe malnourishment. Photo credit: Mother and Child Nutrition.



Birth professionals and advocates from the Seattle Somali-American community.

FOSTERING A COMMUNITY-LED EFFORT TO IMPROVE PERINATAL OUTCOMES IN SOUTHEAST SEATTLE /

Southeast Seattle reports the highest rates of preterm/low birthweight babies, cesarean births, women receiving inadequate perinatal care and unmet mental health needs in Washington. All of these troubling statistics lend to this community's federal designation as a Medically Underserved Area. However, a community-led effort is underway to improve perinatal outcomes, with support from the UW Population Health Initiative, Health Alliance International, and a half dozen UW investigators, including two DGH faculty members.

The Mama Ammaan Project ("safe mother" in Somali) is testing the feasibility of carrying out culturally-adapted prenatal care groups, community-based doulas and perinatal home visits within Seattle's burgeoning Somali immigrant and refugee community. The pilot is a collaboration among UW, Somali Health Board, Health Alliance International and Parent Trust.

If the pilot proves feasible, researchers will use the findings to seek larger controlled-trial funding to test the efficacy of a culturally-adapted group prenatal care and doula model to improve perinatal outcomes—learning that can be leveraged to serve other perinatally-vulnerable communities, such as American Indian Alaska Native and African American communities. The project is helping strengthen community researcher capacity to meet community needs and has been highlighted in Washington Global Health Alliance's 2018 global health landscape study as an example of how evidence-based global health strategies can be applied to improve local health outcomes.

INVESTIGATING GLOBAL ENVIRONMENTAL CHANGE IMPACTS ON HEALTH

UW PROFESSORS OF GLOBAL HEALTH CO- AUTHORS OF 2018'S MOST PROMINENT CLIMATE

REPORTS /

Kristie Ebi, Professor, and Jeremy Hess, Associate Professor, Global Health and Environmental and Occupational Health Sciences, and Directors of the Center for Health and the Global Environment (ChanGE), were authors in three major national and international reports released at the end of 2018 that assessed the health risks of climate change: the Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5 C, the Lancet Countdown 2018 report on health and climate change, and the National Climate Assessment.

Ebi was a lead author on the IPCC Special Report that describes and compares the risks of 1.5 versus 2 degrees Celsius global warming for human and natural systems and the actions needed to manage those risks.

The Lancet Countdown's 2018 report tracked the health dimensions of the risks of, and the responses to, climate change. The report focused on: climate change impacts, exposures, and vulnerability; adaptation planning and resilience for health; mitigation actions and health co-benefits; finance and economics; and public and political engagement. Hess was a lead author on the report's brief for the US.



Left: Professor Ebi (right) at the 48th session of the Intergovernmental Panel on Climate Change (IPCC 48).
Right: Experts at the 48th session of the IPCC (Professor Ebi bottom left).

The National Climate Assessment focuses on impact, risks, and adaptation in the United States. The NCA assessed a range of potential climate change-related impacts to help decision makers better prepare for and manage current and future challenges. Ebi was the chapter lead for Human Health.

Also in 2018, Cory Morin, Acting Assistant Professor, Global Health, received a National Oceanic and Atmospheric Administration (NOAA) award to develop mosquito-borne disease forecasting using seasonal climates in collaboration with countries in Central America and the Caribbean.



WIDELY PUBLISHED, GROUND-BREAKING RESEARCH

In 2018, UW DGH faculty members published a total of over 500 articles in internationally acclaimed journals such as *The Lancet*, *Nature*, *New England Journal of Medicine*, and *Immunity*. Six DGH faculty members were also recognized as among the most Highly Cited Researchers of 2018 and were selected for producing multiple highly cited papers that rank in the top 1% by citations for field and year. These include: Abraham Flaxman (IHME, GH), Michael Gale, Jr. (GH, Pathobiology), Simon Hay (IHME, GH), Stephen Lim (IHME, GH, HServ), Rafael Lozano (IHME, GH, HServ), and Chris Murray (IHME, GH, HServ).

GLOBAL HEALTH FACULTY RECEIVE PRESTIGIOUS AWARDS



MATT GOLDEN, CFAR

was awarded the Beyond AIDS Nettie Award for leading the first known achievement of the UNAIDS goal of 90-90-90 for HIV control and treatment. Dr. Golden is the first to be granted this award in the US.



JULIE GRALOW, ADJUNCT PROFESSOR, UW GLOBAL HEALTH

received the Humanitarian Award from The American Society of Clinical Oncology.



AMY HAGOPIAN, ASSOCIATE PROFESSOR, UW GLOBAL HEALTH

was awarded the American Public Health Association Victor Sidel and Barry Levy Award for Peace.



CHRISTOPHER MURRAY, ADJUNCT PROFESSOR, UW GLOBAL HEALTH

was awarded The John Dirks Canada Gairdner Global Health Award for outstanding achievements in global health research.



Global mental health leaders from around the world at the Seattle launch of The Lancet Commission on Global Mental Health and Sustainable Development's report.



Students in the 26th Annual Principles of STD/HIV Research Course visit local Seattle organizations.



UW researcher in Kenya.

UW researchers from the Civil and Environmental Engineering Department work with DGH to improve health conditions of an impoverished floating community in the Peruvian Amazon.

EXPANDING GLOBAL MENTAL HEALTH

SECURING MENTAL HEALTH'S SPOT ON THE GLOBAL AGENDA

In January 2018, Pamela Collins joined the UW to lead expansion of the Program on Global Mental Health (GMH), a joint effort of the DGH and the Departments of Psychiatry and Behavioral Sciences.

A 2018 highlight was The Lancet Commission on Global Mental Health and Sustainable Development's report, in which two GMH faculty served on the influential commission and two more served on the external advisory board. The commission widely influences the agenda for priorities in global mental health research, education, and programs worldwide. At a GMH-hosted launch event, global mental health leaders from around the world converged on Seattle to discuss The Lancet report and the intersection of mental health and key global health priorities more broadly. Additionally, GMH faculty weighed in on progress toward closing global mental health gaps at a key World Health Organization meeting in Geneva.

Another 2018 highlight on the world stage was the drafting by Collins of the foundational mental health document for the UNAIDS Programme Coordinating Board meeting in 2018, which helped mental health land squarely on the HIV/AIDS global agenda for the first time.

People living with HIV are at a greatly increased risk of developing mental health conditions, often suffering from depression and anxiety as they adjust to their diagnosis and adapt to living with a chronic infectious disease. Conversely, people living with mental health problems can also be at higher risk of HIV.

The GMH Program, which actively collaborates with other DGH areas such as Global WACH, Implementation Science, I-TECH and others, includes 22 faculty with 36 projects in more than 25 countries. These projects run the gamut from developing and adapting mental health-specific implementation science curriculum in multiple African countries to optimizing scale-up of the first effective psychological treatment program in primary care to be tested so far in Sub-Saharan Africa.

PREVENTING AND REDUCING HIV/AIDS AND SEXUALLY TRANSMITTED INFECTIONS

POINT-OF-CARE TESTS IMPROVE TREATMENT OUTCOMES AMONG PEOPLE LIVING WITH HIV /

Globally, less than half of all people living with HIV (PLHIV) have achieved viral suppression. Delays with laboratory testing in resource-limited settings continue to present challenges for monitoring treatment with antiretroviral therapy (ART).

A recent study by the Simplifying HIV TREATment and Monitoring (STREAM) study team, a collaboration between University of Washington and the Centre for the AIDS Programme of Research in South Africa (CAPRISA), found that point-of-care (POC) testing and same day counseling by nurses significantly improved suppression of the virus, retention in care, and referral into community-based care.

POC testing allows important test results to be received by both the patient and clinician in a timely manner.

Set in Durban, South Africa, the STREAM study randomized patients into receiving either standard laboratory HIV viral load testing or POC viral load testing. Among 390 patients enrolled (195 per arm), 90% of POC tested and 76% of laboratory tested patients were retained and achieved viral suppression after 12 months, a statistically significant 13.9% increase.

The results of the STREAM study suggest a promising future for POC HIV viral load testing to simplify health care and improve outcomes for PLHIV receiving ART. Increasing access to POC HIV viral load testing could be a major step towards achieving UNAIDS's 90-90-90 targets by 2020.

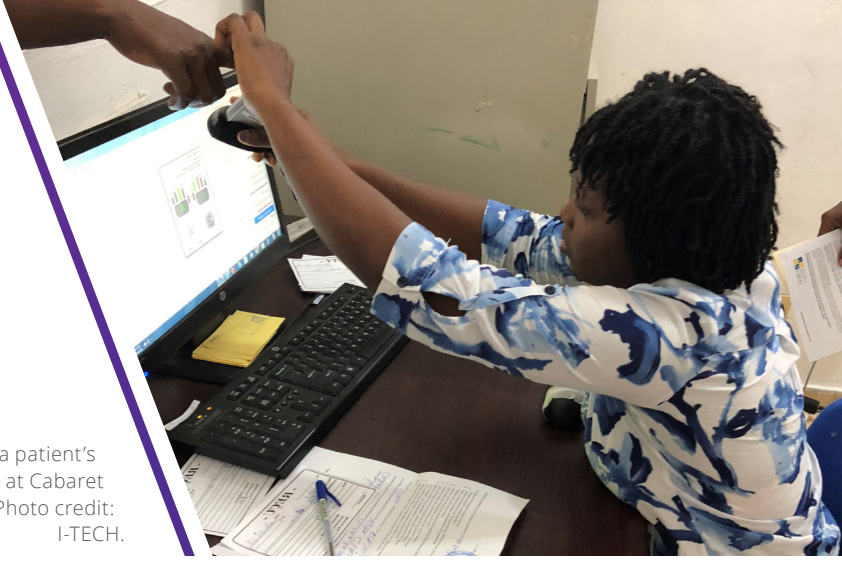
**THE INTERNATIONAL
TRAINING AND EDUCATION
CENTER FOR HEALTH
(ITECH) ADVANCES IN
HIV/AIDS /**

**Making UW History: I-TECH Offices in India and Haiti
Transition to In-Country Ownership, Turning Vision into
Reality.**

In spring 2018, I-TECH made UW history when two of its overseas offices transitioned into independent organizations. These moves to in-country ownership in India, which has the third-largest HIV epidemic in the world, and Haiti, which has the highest prevalence of HIV infection in Latin America and the Caribbean, helped realize I-TECH's mission: to strengthen local capacity and build sustainable national health systems, in partnership with the local ministries of health. The transition bolsters sustainability by enabling in-country teams in India and Haiti to simplify administration and pursue funding that was unavailable to them as UW entities.

"Seeing these registrations become fully functioning independent entities not only fulfills a key mission of I-TECH to help establish sustained capacity where it is needed most, but also reflects the commitment of the UW community toward international engagement," says Doug Divine, Director of UW Global Operations Support. "Without I-TECH and the projects it has spearheaded, I'm not sure UW would have made the advancements it has made on the international front."

The I-TECH office in India is now the independently run I-TECH India PL. Its office in Haiti is now known as CHARESS (Centre Haïtien pour le Renforcement du Système de Santé). The I-TECH center in DGH has 13 offices and approximately 1,900 staff in Africa, Asia, the Caribbean, Eastern Europe and the United States. I-TECH works primarily in health leadership and management; health systems strengthening; health workforce development; implementation science and evaluation; and prevention, care and treatment of diseases.

A photograph showing a person in a blue and white patterned shirt using a fingerprint scanner. The scanner is positioned over a computer monitor displaying a software interface with charts and data. The person's hands are on the scanner. The background is a simple office or clinic setting.

A records officer captures a patient's fingerprint in iSantéPlus at Cabaret Health Center, Haiti. Photo credit: I-TECH.

Electronic Medical Record System Optimizes Care for 1.2 Million in Haiti and Offers Global Model.

Under the newly created CHARESS, the phased national rollout of a major upgrade to Haiti's existing electronic medical record system (EMR), known as iSanté, continued in 2018. I-TECH began work on iSanté in 2005 with the goal of improving integration and patient care across Haiti's health care network.

"iSanté is a part of the legacy of the HIV information system, a model that will be used from generation to generation especially in terms of sustainable HIV/AIDS interventions," said Nirva Duval, Monitoring & Evaluation Lead at the National AIDS Control Programme of the Ministry of Public Health and Population (MSPP) in Haiti.

The EMR rebuild, known as iSantéPlus, uses an OpenMRS platform, supported by a growing global community. That system connects to the I-TECH-supported (and now CHARESS-run) national health information exchange known as SEDISH (Système d'Echange d'Information de Santé d'Haïti). Both iSantéPlus and SEDISH will promote collaboration between MSPP-, U.S. Centers for Disease Control- and U.S. AID-funded partners to improve how health care providers serve designated populations and individual patients, including offering continuity of care when patients move between care sites. Together, the systems will help move Haiti from a disparate jigsaw puzzle of health information systems to a single interconnected network, ensuring seamless data flow from the community level to the national level and back again.

“iSanté has kept Haiti on the leading edge of health information systems implementation in resource-constrained countries,” said Dr. Scott Barnhart, Principal Investigator and Professor in the UW Departments of Medicine and Global Health. “The changes underway will have broad global applicability—integrating across direct patient care, lab, pharmacy, as well as supply chain. We have an exciting opportunity to come together and build on our success to respond to the challenges of local ownership, financing, cost-effectiveness and governance so that these important tools are sustainable.”

The iSanté system now is used in more than 110 facilities across the island nation.

Strengthening Systems in Laboratories Across Côte d’Ivoire,

Cambodia and Zambia. Across Côte d’Ivoire, Cambodia and Zambia, the I-TECH Laboratory Systems Strengthening team worked in 2018 to improve labs’ quality management systems. I-TECH, which supports 120 labs worldwide, recognizes that medical laboratories are a critical component of quality health care, providing essential data for patient care and treatment, disease prevention and control, and public health policy development. Strengthening lab systems and building staff capacity has a direct, positive effect on quality of care and the ability of low-resource countries to reach epidemic control.

The lab team supports ministries of health to help labs meet international standards, build staff capacity, improve lab information systems, improve quality of HIV rapid testing and develop lab policies and guidance. Beyond working to improve HIV rapid testing by building testers’ skills, certifying point-of-care testing sites and running proficiency tests at labs, the lab team in 2018 ran a nine-month Certificate Program in Laboratory and Leadership Management for directors and quality-assurance officers from 16 laboratories in Zambia. This course has also been completed by lab leadership staff in several countries in the Middle East and North Africa. Online modules were developed with support from the UW Department of Global Health’s eLearning Program (eDGH), and the blended learning format allowed participants to remain employed during their studies.

TWO KEY GRANT AWARDS HELP BOOST RESEARCH CAPACITY IN KENYA /

Thanks to the longstanding partnership between UW's International AIDS Research and Training Center (IARTP) and the University of Nairobi, the UW center and the University of Nairobi consortium in fall 2018 was one of just eight awardees in sub-Saharan Africa to receive a Health Professional Education Partnership Initiative award from the National Institutes of Health (NIH). Kenya has one of the highest HIV burdens in sub-Saharan Africa, with an estimated 1.6 million HIV-infected adults and children. To achieve and sustain epidemic control, the Kenyan team will train a multidisciplinary workforce to design, conduct and disseminate research that can readily move into policy and practice to inform HIV prevention, care and treatment.

Additionally, building on strong collaborative ties with Kenyan institutions, IARTP won renewed five-year funding in spring 2018 to help Kenya's largest teaching and referral hospital and its partners build sustainable, in-country training capacity, in part by creating an Implementation Science and Dissemination Research Center of Excellence. The grant will help Kenyan scientists do implementation science research to improve HIV testing services, linkage to care and delivery. Ultimately, this work should contribute solutions to the pressing problems hindering effective implementation and scale-up of HIV interventions in Kenya and other parts of sub-Saharan Africa

The IARTP was established in 1988 with NIH's Fogarty International Center funding to foster international collaborative AIDS research through scientist exchange. To date, the IARTP has helped more than 25 Kenyan scientists and public health officials pursue UW advanced degree training (MPH/PhD) or certificate training in HIV/AIDS research.

UNAIDS 90-90-90 GOALS: UNDERSTANDING BARRIERS TO ACCESSING HIV SERVICES /

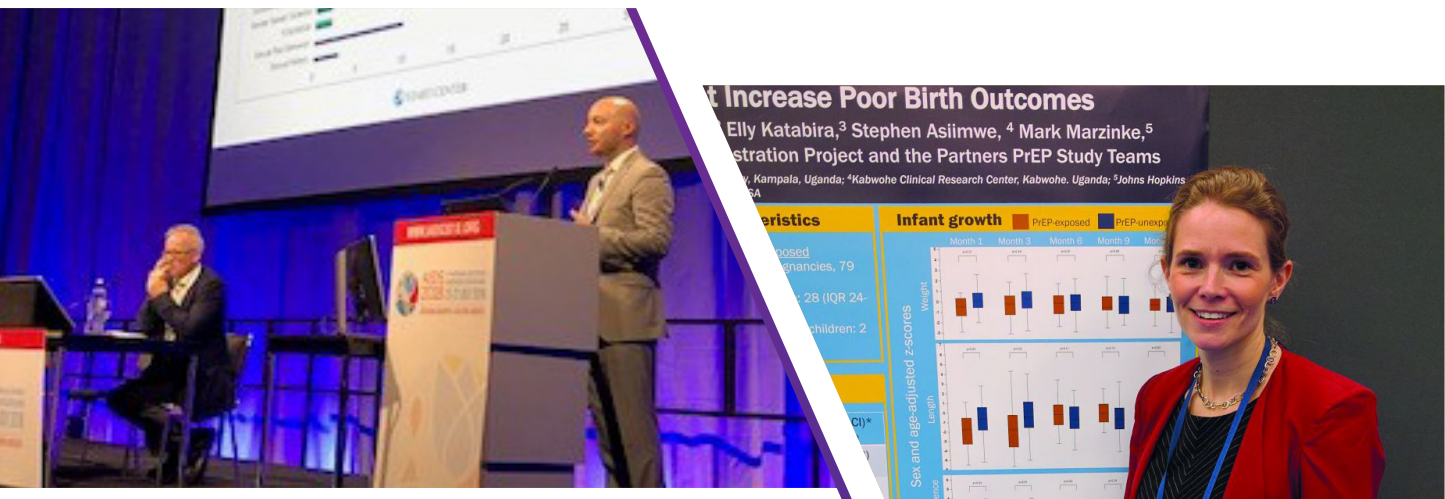
The Strategic Analysis, Research & Training (START) Center provides high quality research to organizations working in the fields of global and public health. Its team of researchers have diverse and interdisciplinary expertise ranging from global health and epidemiology, to business and law, and are comprised of UW graduate research assistants and dedicated faculty drawn from a large network of faculty experts across the UW.

START is driven by a dual mission, with equal commitment to delivering high-quality research and analysis, and providing mentorship and training to UW graduate research assistants.

In 2018, START completed 19 research projects. One commissioned by the Bill & Melinda Gates Foundation, was a comprehensive review of the HIV care cascade among all PEPFAR-funded sub-Saharan African countries included in Epidemic Control Teams. The project aimed to better understand the effectiveness of HIV testing and treatment services in regards to the “missing 27%,” an estimate of the proportion of HIV-infected individuals who face insurmountable barriers to accessing HIV services and remain untreated.

The START project undertook a comprehensive review of demographic, epidemiologic, sexual-risk-behavior, and geographic heterogeneity across the HIV care cascade to evaluate the effectiveness of test and treat programs to date, as well as new strategies to improve its impact on the epidemic. Results from the review showed evidence that populations reached by HIV test and treat services differ with respect to transmission potential from those who are missed, and support the hypothesis that younger individuals, men, and migratory/mobile populations may disproportionately contribute to HIV transmission.

The findings contribute toward achieving the UNAIDS 90-90-90 goals, which may largely depend on whether populations with the greatest potential for onward transmission successfully access HIV services. START Research Assistant, Dylan Green, shared the research findings at the AIDS 2018 Conference.



Left: START Center graduate research assistant shares new research findings at the AIDS 2018 Conference. Right: Associate Professor Renee Heffron, CFAR, at the 2018 Conference on Retroviruses and Opportunistic Infections.

**CENTER FOR AIDS
RESEARCH (CFAR) GAINS
\$17.5 MILLION TO FIGHT
HIV/AIDS THROUGH 2023 /**

Housed within DGH, the UW/Fred Hutch CFAR received a five-year NIH grant to provide critical services and support for HIV researchers in Seattle, enabling those researchers to continue to meaningfully impact those living with HIV and at risk for HIV globally. The grant helps the center address the highest priority challenges of the global HIV epidemic through fostering collaborations across institutions and disciplines, delivering innovative and cutting-edge expertise and technology, and supporting the next generation of HIV research leaders.

One example in 2018 is from a CFAR-funded “Localizing Global Research” pilot award project, which researched fertility desires and preferences for safer conception strategies among people receiving care for HIV at a publicly funded clinic in Seattle. The intent of this CFAR award is to provide funding to early stage investigators to translate research findings from a low and middle income country setting to benefit communities in need in Washington state; in this case the research used a number of findings from work in Kenya as the foundation for the project in Seattle. The research showed that among participants of reproductive age with fertility desires, willingness to use safer conception strategies was highest for ART, PrEP, and medically assisted reproduction, with PrEP being the most feasible option for this population. Awareness of PrEP as a safer conception strategy was moderate among reproductive age participants with fertility desires, and many identified potential barriers to HIV uninfected partners using PrEP during pregnancy attempts. These results highlight the need and opportunity to increase knowledge of and address barriers to PrEP utilization among populations that may have HIV uninfected sexual partners.

The NIH grant will substantially boost funding for programs like the New Investigator Awards; offer new services in Behavioral Sciences, Implementation Science, and Molecular Data Science; create new working Groups in eHealth, Adolescent Health, and sustain an existing HIV Cure group; and leverage innovative laboratory services and expertise to support research in HIV-Associated Malignancies and Immunology. Now in its 31st year, CFAR consortium partners include UW and Fred Hutch Center, the Infectious Disease Research Institute, Seattle Children’s, and the University of Hawai’i.

DEFINING EVIDENCE-BASED DISEASE CONTROL PRIORITIES

DCP3: A QUARTER-CENTURY IN THE MAKING, MASSIVELY INFLUENTIAL GUIDE

FINALIZED /

In the culmination of a 25-year effort led by DGH Professor Emeritus Dean Jamison, the 3rd edition of *Disease Control Priorities (DCP3)* launched in 2018 at a standing-room-only event in London co-hosted by The Lancet. The Lancet editor-in-chief, Richard Horton, and the World Health Organization Director-General, Dr. Tedros Adhanom Ghebreyesus, gave keynote addresses during the launch of the massive, nine-volume series that is expected to influence the global agenda for myriad international agencies, donors and country governments. Coordinated by Jamison and others from DGH, the creation of the *DCP3* involved more than 500 authors, 230 peer reviewers, and 33 editors.

The *DCP3* is a comprehensive global effort to evaluate the cost-effectiveness and population-wide effect of health interventions. Based on criteria of value for money, feasibility and population impact, *DCP3* provides recommendations to low- and middle-income countries on priority health interventions for limited-resource settings. Writing the *DCP3* has involved the World Bank, the World Health Organization, the Bill and Melinda Gates Foundation and other major international global health stakeholders.

BOOSTING PANDEMIC DISEASE PREPAREDNESS

IDENTIFYING POTENTIAL PANDEMIC HOTSPOTS THROUGH VULNERABILITY

MAPPING /

Starting in summer 2018, the Democratic Republic of Congo began reporting an outbreak of Ebola virus disease in a northeastern district of the country. Turns out it was the very same area geospatial modeling experts at the UW MetaCenter for Pandemic Disease Preparedness and Global Health Security had identified before the outbreak as being in the 95th percentile or higher of districts vulnerable to outbreak.

This real-world (if unanticipated) example demonstrates the potential of the MetaCenter's vulnerability mapping approach to help countries most effectively prepare for (or work to prevent or contain) an outbreak.

The UW MetaCenter leverages diverse expertise across UW including public health, medicine, statistical modeling, computer science, pharmacy, environmental and behavioral sciences, engineering, urban planning and law, in collaboration with local and international partners. The groups are developing an integrated systems approach to both prevent outbreaks and increase lead time to better prepare for and reduce the size of pandemics by identifying high-risk pathogens in vulnerable places before an outbreak explodes. The MetaCenter is building on UW's global network to help low- and middle-income countries identify gaps, set priorities and improve readiness to prevent and respond to infectious disease outbreaks.

In 2018, this MetaCenter vision has started to translate into a promising reality, with a proof of principle pilot project underway in Peru. By mapping the epidemic potential of Zika and Dengue at a subnational level, the MetaCenter is evaluating the feasibility, validity and utility of disease vulnerability mapping at the local level in an effort to help Peru best target its limited resources. The team is also assessing local needs for improved vaccine and diagnostic development, as well as training and other capacity building. This work is enabling the MetaCenter to start to evaluate and refine its highly interdisciplinary approach to a major global health challenge.



Disease Control Priorities provides policy makers and program leaders with the most up-to-date evidence on cost-effective interventions to address the burden of disease in low-resource settings.



Participants at the Women Leaders in Global Health Conference 2018, London



Assistant Professor Alison Roxby and Professor Carey Farquhar at the 2018 Women Leaders in Global Health Conference.

PROMOTING WOMEN'S LEADERSHIP IN GLOBAL HEALTH

As a co-sponsor of the 2018 Women Leaders in Global Health Conference, leadership in DGH including Judy Wasserheit—Chair, Carey Farquhar—Professor, Alison Roxby—Assistant Professor, and others took part in a conference that brought together established and emerging leaders from across sectors and cultures to work towards gender equity in health leadership to improve health for all.

“We’re in a world where women have not had equitable access. There is a need to collect data around institutional practices that can help lead to institutional change,” says Carey Farquhar. “Women have to help other women climb up the ladder to succeed. If we’ve had a ceiling, the ceiling should be the floor for the next generation.”

PREPARING THE NEXT GENERATION OF GLOBAL

OUR STUDENTS – BY THE NUMBERS

59

DEGREES AWARDED 2017-18

- › MPH – **53**
- › PhD Global Health Metrics and Implementation Science – **3**
- › PhD Pathobiology – **2**
- › MS Pathobiology – **1**

73

MINORS & CERTIFICATES AWARDED 2017-18

- › Undergraduate Global Health Minors – **43**
- › Graduate Certificates – **13**
- › School of Medicine Global Health Pathway - **17**

74

STUDENTS - AUTUMN 2018 INCOMING CLASS

- › **28%** of **195** applicants admitted into our MPH program
- › **14%** of **103** applicants admitted into our Global Health PhD Program
- › **7%** of **74** applicants admitted into our Pathobiology PhD Program

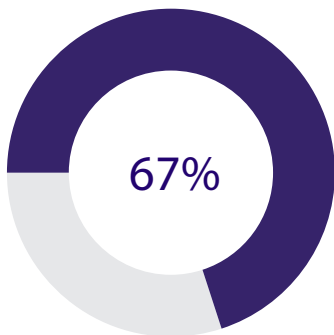
464

TOTAL ENROLLED STUDENTS AUTUMN 2018

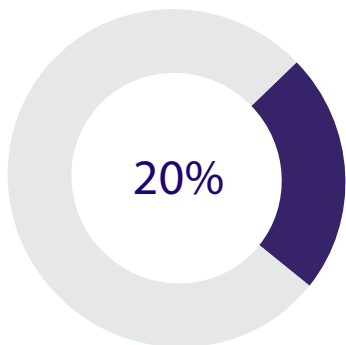
- › **127** MPH
- › **48** PhD in Global Health Metrics and Implementation Science
- › **29** PhD Pathobiology
- › **134** School of Medicine Global Health Pathway
- › **29** Graduate Certificates
- › **97** Undergraduate Global Health Minor
- › **1700+** students took global health courses
- › **14,500** students enrolled in E-learning courses

HEALTH LEADERS

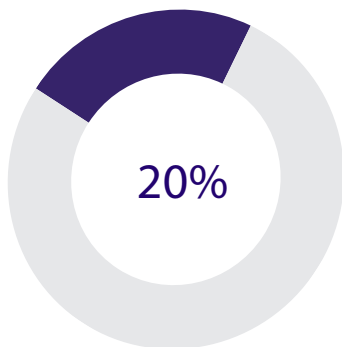
DIVERSITY



female (50 of 74 incoming)



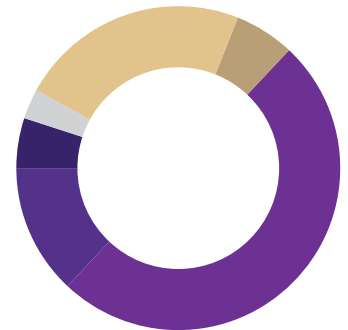
underrepresented minorities (15 of 74 incoming)



international students (15 of 74 incoming)

RACE AND ETHNICITY

- **8%** African American
- **13%** Asian American
- **50%** Caucasian
- **8%** Hispanic American/ Latin American
- **23%** International
- **2%** Other



The main regions of origin for international students are:

- › **50% Asia** - China, India, Indonesia, Iran, Vietnam
- › **36% Africa** - Kenya, Mozambique, Uganda
- › **7% Latin America** - Peru
- › **7% OECD** - New Zealand

OUTSTANDING GLOBAL HEALTH STUDENTS

DGH's graduating class of 2018 included over 140 students from undergraduate and graduate programs who received degrees and certificates. They join a network of over 1,300 alumni who have gone on to work at all levels of global health including programming, policy, research, and training. Four graduate students were recognized for their outstanding work by the Department of Global Health and the School of Public Health.



PEDER DIGRE

DGH Outstanding Master's Student Peder Digre, MPH/MPA graduate, works at PATH, a global health nonprofit headquartered in Seattle, and has contributed to the organization's innovative initiatives to support entrepreneurs in low-resource settings to develop and introduce health technologies to improve the health of women and children.



EMILY GAGE

DGH Outstanding PhD Student Award recipient Emily Gage, PhD in Pathobiology graduate, worked with the Infectious Disease Research Institute on a project to better understand how pre-existing immunity to flu, either from infection or vaccination, affects immunological response to subsequent vaccination.



RYANN MILNE-PRICE

DGH Medical Student Achievement Award recipient Ryann Milne-Price, who is currently at a family medicine residency in Idaho, conducted a qualitative study in partnership with the Department of Community Programs at Dhulikhel Hospital, Nepal, on the regional use of safe and unsafe abortion services.



KATRIN FABIAN

SPH Gilbert S. Omenn Award for Academic Excellence recipient Katrin Fabian, MPH graduate, led a six-month project in southeast Liberia to develop a tool to identify and treat people with mental suffering, which could lead to more appropriate treatment models and reach a wider spectrum of potential patients.

NEW GLOBAL HEALTH OPTION IN EXPANDED PUBLIC HEALTH - GLOBAL HEALTH MAJOR

DGH has responded to undergraduate students interested in a major in global health. Public health major students with a specific interest in global health can now choose the global health option, which will allow them to target their upper-division courses to global health content. We anticipate that there will be robust enrollment and this will help create a pipeline of students interested in the increasingly globalized graduate curriculum in SPH.

EXPANDING E-LEARNING

DGH's e-learning program (eDGH) has grown rapidly in recent years, from an enrollment of 8,100 in 2017 to 14,532 in 2018. Since its inception in 2014, eDGH has enrolled participants from 87 countries in five eDGH courses.

eDGH courses utilize a blended learning model, where participants meet with a local site group and a volunteer Site Coordinator who organizes and facilitates site meetings. One of these Site Coordinators is Dr. Eric Gyamfi in Ghana. In September 2018, he travelled to Seattle to participate in a Fundamentals of Implementation Science short course at the University of Washington. eDGH will release a new version of the online Fundamentals of Implementation Science in Global Health course in September 2019, and after taking the course last year, Eric plans to offer it at his site. So far, he has facilitated the enrollment of hundreds of professionals in related fields at his site in the hopes of increasing capacity for implementation science knowledge and practice in Ghana among local NGOs, health professionals, researchers and others.



HAPPY 15TH ANNIVERSARY TO THE GLOBAL HEALTH RESOURCE CENTER

Over the past 15 years, DGH's vibrant Global Health Resource Center (GHRC) has focused on global health community building within UW, Seattle and beyond. Every year, the GHRC offers more than 30 Fellowships for international fieldwork, manages DGH's medical school programs, provides career services to global health students, and organizes global health events throughout the year. The annual Global Healthies event brings more than 200 global health students and faculty together to collaborate on projects, and Global Health Career Week provides networking opportunities for global health students with Seattle-based global health organizations.

"In 2003 the GHRC was established as one of the first hubs for global health activity, bringing together students, partners, and programs in one place. I'm amazed at how much the community has grown and how many new linkages we make each day to connect people, coordinate programs and catalyze new opportunities. I look forward to the next 15!" says Daren Wade, Director, GHRC.



DGH Graduation Ceremony 2018

DIVERSITY IS INTEGRAL TO EXCELLENCE

The Department of Global Health believes that a diverse student body is essential to creating an environment where faculty, staff, and students have the tools and cultural competency to better serve local and global communities. DGH has taken various steps toward promoting such diversity, including creating a Diversity Committee that has been active since 2013 and working on new course requirements that will provide the highest quality training to work in diverse settings around the globe.

The department has also provided funds for underrepresented minorities to attend DGH Visit Days; offered Excellence Awards that provide in-state tuition and a living stipend; and established a Fellowship for Global Health Excellence, Equity, and Impact that has provided full funding for 9 recipients since 2017. Due to these efforts, DGH has been accepting and enrolling underrepresented minorities (URMs) at increasing rates over the last 6 years, with the enrollment rate of accepted URM applicants to the MPH in Global Health rising from 20% in 2012 to 67% in 2017.

Two members of the entering 2018 cohort were awarded Research Assistant positions, where students are paired with faculty members to work on a research study. Utilizing costs shared by the department and faculty, these students receive full tuition and a stipend for three quarters and are positioned to have direct mentorship and hands-on experience in a research setting. MPH Excellence Research Assistant, Mame Mareme Diakhate, works with Dr. Donna Denno on two projects—one on Environmental Enteric Dysfunction to understand factors presenting in children who are stunted, and the other on Minimally Invasive Tissue Sampling to clarify cause of death in malnourished children. MPH Excellence Research Assistant, Briana Williams, works with Health Alliance International (HAI) on evaluation and data analysis of sub-award recipients for the C’ôte d’Ivoire team.



Mame Mareme Diakhate



Briana Williams

BUILDING GLOBAL HEALTH CAPACITY IN A GLOBALIZED WORLD: INTERNATIONAL EDUCATION AND TRAINING

DGH's Global Health Resource Center (GHRC), which manages global health study abroad and exchange programs, awarded DGH Fellowships that provide financial assistance to graduate students, professional students, and medical residents at the University of Washington to help support fieldwork experience in global health. In 2018, more than \$150,000 was awarded to 35 students to support their work in Asia, Latin America, and sub-Saharan Africa.

In addition, the Department of Global Health coordinates more than 10 international training programs, including the Afya Bora Fellowship in Global Health Leadership, the Fogarty Northern Pacific Global Health Fellows, and the Program in Education and Research in Latin America (PERLA).

Over the past year, PERLA utilized a UW Population Health Initiative grant to broaden collaboration that addresses health needs of a floating community in the Peruvian Amazon city of Iquitos. This collaboration now includes 90 Peruvian and U.S. professionals, researchers and students, from over 26 disciplines and specialties, including Global Health, Dentistry, the Built Environment, Nursing and Civil Engineering. PERLA is also receiving additional support from the U.S. State Department and the Centro de Investigaciones Biomédicas, Tecnológicas y Medioambientales (CITBM). The program is supporting an NIH Fogarty Global Health fellow, who will spend a year with the Claverito community implementing and evaluating the impact of the built environment upon human and environmental health. PERLA has also trained two Peruvian neurologists in stroke research methodology at the UW and aims to implement the first stroke fellowship in South America.



DGH Fellowships provide financial assistance to graduate students, professional students and medical residents at the University of Washington to help support global health fieldwork experiences around the world.



DGH International Fellowship recipients in 2018 include:



YINGXI ZHAO

Thomas Francis Jr. Fellowship recipient Yingxi Zhao, MPH candidate, worked with a local ethnic health organization in Myanmar to develop a five-year health workforce action plan. He also conducted a mixed-methods study on health worker job satisfaction and retention through semi-structured interviews, questionnaire surveys, and focus group discussions.



VALENTINE WANGA

Global Opportunities (GO) Health Fellowship recipient Valentine Wanga, PhD candidate, interned with the executive office (EXO) at UNAIDS, Geneva and participated in a follow-up of expert meetings that brought together researchers and policymakers. Her work specified the main themes of the discussions including pre-exposure prophylaxis for HIV prevention, political engagement, HIV testing, and investment.



MAHIKA RANGNEKARR

Thomas Francis Jr. Fellowship recipient Mahika Rangnekarr, MPH candidate, conducted an evaluation of incentive programs for community health workers (CHWs) in Ollantaytambo, Peru to better understand the link between the economic empowerment of CHWs, their performance, and their motivation to provide health care and education to their communities.

OUR ALUMNI

1300
ALUMNI

EMPLOYERS INCLUDE: WHO, UNAIDS, CDC; Bill and Melinda Gates Foundation, PATH, Partners in Health; national ministries of health; local organizations worldwide

94%
OF GRADUATES IN JOBS/POSTGRAD PROGRAMS WITHIN 1 YEAR OF GRADUATION (2017-18 DATA)

ALUMNI PROFILES



MOHAMED ALI

Ali was one of the first MPH graduates in global health in 2008. After graduation, he worked at various nonprofit and public health organizations before creating his own Seattle-based non-profit in 2010. Starting with very limited resources, Ali's organization has grown to become the well-known and successful Somali Health Board that is now transforming King County's method of health delivery. In 2012, Ali had the honor of receiving the National Community Hero Award from the Federal Emergency Management Agency (FEMA) and the White House Champion of Change award in 2013. The awards highlighted his role in resolving complex public health problems in Seattle's local communities. "A major takeaway I learned while at UW DGH was being able to identify social determinants of health and methods for alleviating barriers to receiving adequate healthcare and resources," says Ali. Currently, he manages the Childhood Lead Poisoning Prevention Program at Public Health Seattle and King County.



ONYINYE EDEH

Edeh completed her MPH in global health and received a graduate-level certificate in the Global Health of Women, Adolescents and Children from the UW. After completing her studies, Edeh went on to work as a program assistant for PATH, then moved to Nigeria and developed programs to promote young people's health. In 2015, Edeh founded the Strong Enough Girls' Initiative (SEGEI), a nonprofit that has since built a network of girls' and women's rights advocates who work together to achieve common goals while building each other up. Edeh was named the 2016 Institute of Current World Affairs Fellow and was also the recipient of the Gates Millennium Scholarship and the Global Opportunities Health Fellowship. She has been recognized by the Clinton Global Initiative University as a "Commitment Maker."

"As a global health practitioner, I understand the power in a girl's voice and the dangers associated with silencing that voice," she said in an ICWA announcement. "I intend to work with young people and their communities to understand the factors that propel child marriage and hinder girls' education. My aim is to identify culturally-sensitive ways to address these critical problems." Currently she is Program Director at Strong Enough Girls' Empowerment Initiative.



MICHAEL GALE

Raised in Washington state, Michael Gale Jr. came to the UW in the 1980s and discovered a passion for biology and infectious disease. After taking part in research to develop the first animal model of HIV infection, he was hooked and decided to pursue a PhD in pathobiology. His work has since led to huge advances in understanding innate immune regulation and infection by hepatitis C virus, and informing the development of drugs that can now cure most hepatitis C-infected patients.

Gale is the founder and director of the UW School of Medicine's Center for Innate Immunity and Immune Disease (CIID), which has grown to include over 60 scientists. He is co-director of the Center for Emerging Infectious Diseases and an affiliate member of the Fred Hutchinson Cancer Research Center. He is also a UW professor of immunology and he holds adjunct appointments in Microbiology and Global Health. He is currently working on ways to stop Zika, Ebola, dengue and West Nile and on defining processes of vaccine protection against HIV and certain cancers.

OUR FACULTY AND STAFF

420

FACULTY APPOINTMENTS

69

regular faculty – 40 are primary in DGH and 29 are joint appointments (primary in another UW department and joint with DGH) — mainly based at UW Seattle

345

annual faculty (clinical salaried and non-salaried, adjunct, affiliate, acting, and visiting) — comprising a global network of faculty around the world

6

emeritus faculty

HIGHLY INTERDISCIPLINARY FROM

41

UW departments

15 OF 16

UW Schools and colleges

2483

STAFF

2252*

Internationally based (I-TECH 1925; HAI 150; UW Kenya 177)

231

USA-based

*Comprised of staff working with DGH through other organizations, temporary, short-term, and stipend.

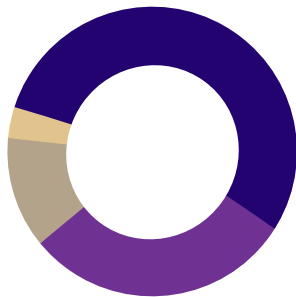
OUR FINANCES

REVENUE BY FUND SOURCE



- 90% Grants and Contracts
- 3% Self-Sustaining Centers
- 1% Gifts and Endowments
- 3% State
- 3% Research Cost Recovery

CORE REVENUE BY FUND SOURCE



- 60% State
- 30% Gifts and Endowments
- 8% Research Cost Recovery
- 2% Self-Sustaining Centers

CORE EXPENDITURE BY TYPE



- 41% Education and Curriculum
- 29% Faculty and Staff Administrative Salaries
- 23% Facilities and Operations
- 7% Other Commitments

Core revenue and expenditures are the funding sources and costs associated with running the Department, including academic programs and excluding grant and contract-related work and the work of our Centers, Programs, and Initiatives.

UNIVERSITY OF WASHINGTON



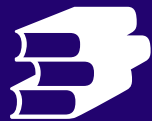
1 MOST
INNOVATIVE
AMONG PUBLIC UNIVERSITIES
WORLDWIDE

Reuters 2018



10 IN THE
WORLD
AMONG GLOBAL UNIVERSITIES

U.S. News and World Report 2018



2 "TOP PRODUCER"
FULBRIGHT STUDENTS
AMONG U.S. UNIVERSITIES

Chronicle of Higher Education 2018



5 MOST
INNOVATIVE
AMONG UNIVERSITIES WORLDWIDE

Reuters 2018



7 FACULTY AWARDED
NOBEL PRIZES

DEPARTMENT OF GLOBAL HEALTH



2 IN DEPARTMENT
GRANT FUNDING
AMONG UW DEPARTMENTS

111 MILLION DOLLARS IN
GRANT & CONTRACT AWARDS
FOR RESEARCH AND TRAINING



710 PROJECTS IN
136 COUNTRIES
WORKING TO UNDERSTAND AND ADDRESS THE
CAUSES OF DISEASE AND HEALTH INEQUALITIES

“This is a time of unprecedented awareness of health opportunities and health disparities around the globe, and their implications for families, communities and nations. It is a time of unprecedented innovation in both health and education. UW’s Department of Global Health faculty, students and staff are passionately committed to leveraging these opportunities and continuing to drive innovation to improve health and reduce health disparities around the world through collaborative, interdisciplinary research, education, and capacity development together with our colleagues in more than 130 countries. We work each day to help achieve sustainable health impact at scale,” says Dr. Wasserheit.

“

Judith Wasserheit, MD, MPH

William H. Foege Endowed Chair, UW Department of Global Health
Professor, UW Departments of Global Health and Medicine
Adjunct Professor, UW Department of Epidemiology

DEPARTMENT OF GLOBAL HEALTH

A Department within the School of Public Health and School of Medicine

UNIVERSITY OF WASHINGTON: BE BOUNDLESS

#1 World's most innovative public university (Reuters)

#2 Department of Global Health ranks second in total grant funding among departments university wide

LEADERSHIP

Judith Wasserheit, MD, MPH, William H. Foege Endowed Chair

Jared Baeten, MD, PhD, Vice Chair

Carey Farquhar, MD, MPH, Associate Chair of Academic Programs

King Holmes, MD, PhD, Director of Research and Faculty Development

Dana Panteleeff, MBA, Director of Finance and Administration

CONNECT

p / 206.221.4970

e / deptgh@uw.edu

f / 206.685.8519

w / globalhealth.washington.edu



@uwdgh



@globalhealthuw

Cover photography: Ebola virus particles. Photo credit: NIAID (top left); I-TECH India supports educational services and technical assistance in India. Photo credit: I-TECH India (top right); Lucia Rodriguez, MPH, Global Health, asks a question at the 2018 Paul Farmer Student Q&A at UW Seattle. Photo credit: Maryska Valentine, UW DGH (bottom).

BE BOUNDLESS /

