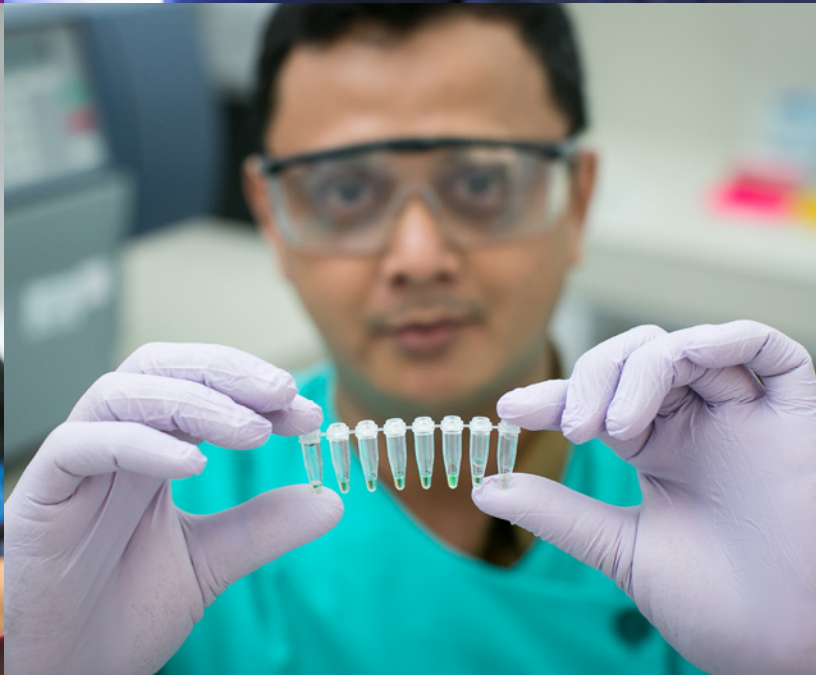




2022 Annual Report



Letter From the Executive Director

Global health stands at a major inflection point. The way the world looks at health problems has shifted dramatically, even from two decades ago. We're no longer isolating each problem into its own silo.

People are advocating much more strongly for investments into health systems and workforce development, and not so much on simply fighting specific diseases. While the world has invested billions of dollars in combating HIV, malaria, tuberculosis and polio—and we need to keep battling these scourges—we are now shifting our thinking from these vertical problems to a more horizontal approach. Or, as I like to say, we're looking at the “diagonals” that connect the horizontals to the verticals.

Climate change has now become an urgent component of our global mission. Moreover, we need to consider the interactions between humans and animals. We need to take into account the implications of mass migration, whether due to violence and war, or climate and poverty. We need to bring an approach to health equity that acknowledges not only communicable diseases spread by microbes, but the leading killers of humans all over the world—cancer, heart disease and diabetes. And, given the tremendous impact COVID-19 had on the entire planet, we need to be much better prepared for the next pandemic.

It's a different world today. We need to rethink the agenda of global health as we enter the second quarter of this century.

In most of our previous annual reports, we have given you a rundown of each of our centers' and programs' highlights. This year, reflecting the changes in global health, we're organizing things differently—diagonally, if you will.

When we look at our work at the Institute for Global Health Sciences (IGHS), three distinct themes emerge. These are:

- The people IGHS has invested in.
- IGHS's commitment to health equity.
- How IGHS has developed meaningful collaborations and training programs in low- and middle-income countries.

In the pages that follow, you'll learn about efforts from various centers and programs at IGHS to build on those themes. How IGHS supports a new generation of leaders tackling the most challenging health problems in ways they know will work best for their communities. How investing in people—whether students, faculty, staff or partners—always pays off, as these people pay the investment forward. How by establishing equal partnerships with colleagues in other geographies, we're able to have a bigger impact on people's lives. And how—especially with the lessons learned in the COVID-19 pandemic—

we see that health cannot thrive locally or globally when there is inequity.

It's not just global health entering a period of transition. I'll be making a transition myself, stepping down from my role as Executive Director at the end of August, after 12 years of leading this marvelous institute. In coming to IGHS, I stood on the shoulders of giants, particularly our founder, former UCSF Chancellor Haile Debas, MD; Sir Richard Feachem, KBE, PhD, DSc (Med), who served as the first director of the organization that ultimately became IGHS; and his successor, George Rutherford, MD.

As I reflect on my time at IGHS, I take the most pride in three categories:

People. We have a fantastic group of people, from the leaders who direct our centers and serve as members of my executive team, to the bright senior and early career faculty we've recruited, to the outstanding staff, to the incredible students who will lead yet undreamed-of improvements in global health.

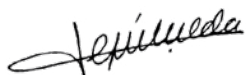
Research and Education. Our research funding grew dramatically, by almost 20 percent per year in the first few years of my tenure, and I am so proud of the groundbreaking work our researchers accomplish. We have also grown our educational initiatives exponentially, from launching the first master's in

global health in the country, to now having 15 generations of master's students, and over 400 alumni. We also created the country's second PhD program in global health and now have a new generation of PhD students coming on board.

Space. When I arrived, IGHS occupied rented space in a corporate building in San Francisco's Financial District, removed from UCSF's campuses and clinics. An angel in the form of Charles Feeney of Atlantic Philanthropies donated almost \$20 million which, along with lease consolidations, enabled us to double the space at Mission Hall, which was just getting built at the time. We are now at the center of UCSF's dazzling Mission Bay campus, and have grown to more than 350 people.

I'm stepping down with so much gratitude for the donors, faculty, staff, students and partners who have made so many fantastic achievements possible. I'm not retiring quite yet. I'm staying on at IGHS as a faculty member, and I look forward to welcoming our next executive director and witnessing many more worthy accomplishments.

Thank you,



Jaime Sepulveda, MD, DSc, MPH
Haile T. Debas Distinguished
Professor of Global Health
Executive Director



Jaime Sepulveda outside Mission Hall in 2014, shortly after IGHS moved to Mission Bay

Photo by Elisabeth Fall

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Part I: Investing in People Around the Globe

Throughout IGHS, each center* believes in investing in people, because once people have the training and expertise to tackle a problem, they can spread that work in their region and have an even greater, more exponential impact.

“Human capital is investing in people who can become leaders in their organizations or ministries of health,” says Susie Welty, MPH, of IGHS’s Center for Global Strategic Information and Public Health Practice. “It’s investing in skill building around the technical areas that UCSF is strong in but maybe the partner organizations are not. It’s that investment in building up people’s skills and leadership capacity to lead in their own countries.”

One example of IGHS’s success in this regard is the Infectious Diseases Institute based at Makerere University in Uganda, which started out of seed funding from UCSF and in 2022 marked its 20th anniversary. It’s grown to six program areas, \$65 million in funding from over 60 funders, and has expanded its work to 15 countries in Africa. The marvelous local organization has blossomed with a little boost—and continued partnership—from UCSF.

This and other programs embody IGHS’s philosophy of providing support—sometimes with dollars, sometimes with knowledge—and letting the local experts solve their region’s most pressing health issues.

*See page 23 for a description of our seven centers.



Helping women by helping their care providers

Patience Afulani came to UCSF as a postdoctoral research fellow and ultimately joined the faculty, working in maternal health. Dilys Walker, MD, director of IGHS's Center for Global Maternal, Newborn and Child Health, said Afulani thinks and acts both globally and locally—on improving women's pregnancy and birth experiences and outcomes in Kenya and her native Ghana, as well as in San Francisco.

Afulani has a project underway in Kenya and Ghana addressing health-care provider stress and unconscious bias that exemplifies the benefits of IGHS's philosophy in investing in people. With IGHS's support, Afulani is now paying her experience forward, launching a program that improves the skills and experiences for many more women's health providers—who, in turn, improve their patients' lives.

"I had practiced in Ghana as a clinician before coming to the U.S. to earn a PhD in public health at UCLA," Afulani says. That experience helped shape the project because Afulani saw how overburdened her fellow providers were. She and her colleagues quickly realized that, while their initial goal was to improve patients' experiences, they couldn't just give more tasks to already-stressed providers.

“

How can we improve the providers' experience as a way of improving the patient experience?"

—Patience Afulani



"How can we improve the providers' experience as a way of improving the patient experience?" Afulani asks. "By helping providers better manage their stress and prevent burnout, and helping providers to be more aware of their biases, can this impact their interaction with patients? Can we improve the experience of pregnant women? And can we reduce the inequities in people's experiences?"

The project has received funding from the NIH, first for a pilot project conducted in 2022, and now to expand to 40 sites in the two countries over the next five years.

The program uses an intervention called CPIPE—Caring for Providers to Improve Patient Experience. It has five components:

- **Training.** Providers are taught valuable skills in care and delivery, including simulations on handling stressful situations and difficult patient encounters, as well as how to recognize the unconscious class-based bias that often creeps into patients' experience. "Women from wealthier households report that they had a better experience than women from lower income households," Afulani says. "Providers talked about how they unconsciously mistreat some women."
- **Mentorship.** The program pairs providers with a more experienced person from their own facility.
- **Peer support.** Providers meet together as a group—nurses with

nurses, support staff with other staffers, clinical officers and doctors with their peers. "These groups provide them with the opportunity to debrief on things that are happening on their ward, and also to connect with each other," Afulani says. "It's also an opportunity for them to brainstorm solutions to the issues they are facing."

- **Leadership.** Issues discussed during peer support group meetings are brought up to the facility and county leadership, so that the providers can help improve the situations that lead to stress and burnout.
- **Embedded champion.** Providers identify two people in their facility to serve as "champions," who lead activities in their facilities and bring issues to leadership's attention.

The pilot showed that "providers love participating in it," Afulani says. "We have data showing the impacts on perceived stress, on burnout and on providers' reported perceptions of how it's improved their own experiences as well as their interactions with patients."

In the new trial, she says, "we're collecting patient outcome data to see that the intervention actually translates into impacts for patients."

Above: CPIPE embedded champion facilitating a session during a training for the control group in Migori, Kenya.

Photo by Patience Afulani



“

The work we do really directly impacts people's lives. You have to take your work seriously. At the end of day, people's lives depend on it.”

– David Mugume

Agandy Studios



Developing new data tools—and skills

To address public health challenges requires more than doctors and other medical professionals. Increasingly in this day, it requires people who understand how to uncover and work with data.

Fitti Weissglas, Bsc, MSc, MBA, IGHS's technical director for the Health Informatics Hub based in Nairobi, says the department has worked to build a solid team of informaticians supporting IGHS.

One key member of that team, David Mugume a lifelong resident of Uganda, brought a solid background in informatics to his work with UCSF and, in seven years, he has risen to become the technical deputy director and an important contributor on the Health Informatics Hub team, according to Michelle Moghadassi, MPH, senior informatics program manager for IGHS's Center for Global Strategic Information and Public Health Practice (GSI).

With a bachelor's degree in computer science from Uganda's Makerere University, Mugume had worked for seven years as a software developer before joining IGHS. He started as a software developer and then became a team lead, and now deputy director.

He quickly learned that Health Information Systems require a different

mindset. For one thing, many rules govern the use of sensitive health data, and those rules may differ from country to country.

Even more critically, "the work we do really directly impacts people's lives," Mugume says. "You have to take your work seriously. At the end of day, people's lives depend on it."

If he produces a dashboard, for instance, that depicts unsuppressed HIV persons, people will see that and follow up, he says.

"We compare ourselves to a bank," Mugume says. "Not even one shilling can go to the wrong place. It should never happen."

Weissglas mentored Mugume in the intricacies of health data, and now Mugume hires and trains technical people in countries all over the world. When IGHS's data hub starts operating in a new country, Mugume says, "I'm the person who goes there, makes sure we have folks who have a software background, and learn the public health background."

Speaking by Zoom from a hotel room in Jordan at midnight, Mugume described trips to Kenya, Tanzania, Jamaica, Trinidad and more.

"I can't remember how many trips I've taken," he says. He loves sightseeing when he can. In Jordan, he visited the ancient Temple of Hercules. "I love history," he says. "You go there and it really hits home that human beings have been around a very long time."

Last August, the U.S. Centers for Disease Control office in Tanzania needed a new partner to support the data systems. Mugume had a small team in the country, with very little Health Information Systems experience, and faced a daunting task.

UCSF told Mugume: "We were given a large informatics scope of work in Tanzania. We have zero HIS people over there. You have one month to receive all the systems from the previous partner and set it up on our servers. Get ready to get going."

"It was huge," he says. He flew to Tanzania with an IT support person, and the two of them received 15 systems with millions of records. "We set it up the right way. We interviewed the previous people and made sure they gave us all the source code and all the documentation."

More than 1,300 health facilities were generating millions of records—and they didn't stop just because the system was in transition. "The users don't know about these changes. They just keep working, keep pushing data. The systems have to keep live," he says. "And within about a month we had received everything."

Mugume began writing job descriptions and interviewing prospective employees.

"As it is now, the CDC is happy," Mugume says. More than 3,000 health facilities are now part of the system. "It's a success story that for me is really the biggest. I am so proud of the Tanzania team."

New programs train and diversify the pandemic workforce

COVID-19 taught the world the importance of preparedness—and especially of having people trained in pandemic response.

Public health workers need to be ready to reach into every affected community, especially the most vulnerable, where the pandemic often took an especially harsh toll.

When the pandemic temporarily sidelined many of IGHS's global programs in 2020, key personnel immediately pivoted to start new programs closer to home, helping the state and the region cope with this new and terrifying disease. IGHS formed the Center for Pandemic Preparedness and Response (CPPR—originally called the UCSF Pandemic Initiative for Equity in Action, or UPIEA), which runs several innovative programs to train health workers.

The California Department of Public Health (CDPH) joined with UCSF

and UCLA in April 2020 to create the California Virtual Training Academy (VTA+), which moved rapidly to train, scale and sustain a workforce to respond to the pandemic.

By 2022, the trainings evolved into continuing education programs and “communities of practice” that created spaces for public health workers to stay connected, supported and up-to-date with the latest information.

CDPH, UCSF and UCLA also teamed up to launch the California Pathways into Public Health Initiative to bring professionals from historically underrepresented and diverse backgrounds to work in local health departments across California.

“In this first year, we recruited 45 fellows and created a pipeline of professionals from underrepresented communities that successfully entered the public health workforce, knowing that is a difficult pathway to break into,” says Jess Celentano, director of programs at CPPR. “We helped provide a necessary on-ramp into the field.”

Ivan Vega of Ventura County conducted contact tracing and case investigation for COVID-positive farmworkers. “For me, this was a big honor,” he says.

“I come from a family of farm-workers myself. I am originally from Ventura County. It felt great being able to provide services to the people who live in my neighborhood, the people I grew up with, the type of people who are part of my family.”

— Ivan Vega, California Pathways into Public Health Initiative fellow



VTA+ by the numbers

Learners

Learners were comprised of:

69% local health jurisdiction employees

20% state employees or contractors

11% staff from community organizations and academic and other partners

72% of local health jurisdictions in California had staff who took VTA+ trainings

715 learners completed one or more VTA+ courses this year

On average, VTA+ learners experienced a **33%** gain in self-reported skills from pre- to post-training

Communities of practice

53 sessions

9,106 attendees

94% of respondents gained knowledge/tools they will apply to their work

89% of respondents felt an enhanced sense of connection to their peers



Educating the educators

When it comes to investing in people, IGHS's master's and PhD programs not only train bright people to go forth and change the world—they also train California high school teachers about global health, so they can pass the knowledge forward and inspire their own students.

The high school teachers' bootcamp has 21 teacher alumni to date with approximately 630 high school students reached, and it continues to grow, according to Ali Mirzazadeh, MD, PhD, MPH, associate director of the PhD program.

"It's a program to train high school teachers to know about global hot topics, and then use those topics in their school," Mirzazadeh says. The classes are in the summer, and the teachers continue to work with the UCSF mentors and faculty throughout the school year, brainstorming ways to teach different projects.

IGHS also runs a Summer Researchers in Global Health program in which high school students come to the University for six weeks to work with a UCSF expert on an independent research project.

Capstone projects

The capstone research project is the centerpiece of the Master of Science program. Students focus on a particular area of interest and apply what they have learned in the classroom to an active, mentored project in global health, either in the United States with an underserved population or with an international partner.

A sampling of the 34 capstone projects from 2022

Leslie Gerstenfeld: The effects of water promotion and access intervention on elementary school students in the presence of food insecurity and negative water experiences

Nicole Zamignani: Neurodevelopmental assessments of infants in Zimbabwe: Validity and feasibility of the Hammersmith Infant

Euro-developmental Exam for low- and middle-income countries

Afia Joarder: The impact of marriage practices on women's mental health in Nepal: A secondary analysis

Avani Narayan: Developing single dose antimalarial therapies effective against multidrug resistant parasites using iron-dependent pharmacology

Rachel Granovsky: Adapting and validating the G-NORM (Gender Norms Scale) in Uganda: A qualitative examination of how gender norms are associated with contraceptive autonomy and reproductive health

Valentina Cox: User acceptability and perceived impact of a mobile interactive education and support group intervention to improve postnatal health care in Northern India: A qualitative study

Above: Summer Researchers in Global Health high school students celebrating completion of their program.

Photo by Susan Merrell

Creative ways to create a team

IGHS, by its very nature, needs to have people working in many countries around the world. Local knowledge of health problems is essential to understanding and treating those problems.

Yet due to the challenges of complying with labor laws in dozens of countries, among other regulations, UCSF is not able to hire foreign nationals as its own employees for many of its initiatives.

In IGHS's fight against malaria, it has gotten creative in how to tap into that local expertise, while making sure that global colleagues receive the benefits of employment that are not typically captured under consultancy agreements, such as paid vacation, workers' compensation insurance, retirement benefits and health insurance.

"We're aiming to build a team that is representative of the geographies in which we're working," says Katie Giessler, MPH, associate director for the UCSF Malaria Elimination Initiative (MEI), part of IGHS's Center for Global Infectious and Parasitic Diseases.

Utilization of outside professional employment organizations (PEOs) that can act as a local employer of record allows for significant expansion in IGHS's ability to engage local expertise and employ talent outside of traditional academic hiring structures. Creating pathways to facilitate development of diverse research teams within IGHS, including greater representation of professionals from the global south, is a small but integral step to moving the needle towards implementation and standardization of more equitable approaches to the vast global health work conducted by IGHS.

Through these alternative employment mechanisms, the MEI has thus far hired four experts based in various geographies where the organization works, including Vietnam, Thailand, Malawi and Mozambique, and with expertise ranging from entomology, monitoring and evaluation, and malaria budget advocacy.

Once the PEO hires the person, the MEI actively aims to create team cohesion within the context of remote working, collaboration across different time zones and differing employment mechanisms. Those hired via alternative mechanisms are engaged as UCSF employees for all intents and purposes, with the goal of creating parity and equity for all team members. They retain a UCSF address, represent IGHS in public forums such as conferences and workshops and lead project activities as members of the IGHS community.



Steve Gowelo, PhD, MSc, entomologist and vector control program manager

Based in Malawi



Jintana Chaiwan, evaluation coordinator

Based in Thailand



Mercy Opiyo, PhD, MSc, entomologist

Based in Mozambique



Le Phan, evaluation coordinator

Based in Vietnam



“

The Center for Global Maternal, Newborn and Child Health has been a wonderful place not only to build connections for research but also a sense of community and belonging, which has been very much needed in the recent years.”

– Nadia Diamond-Smith

Supporting and connecting early career faculty in women’s health

As director of IGHS’s Center for Global Maternal, Newborn and Child Health, Dilys Walker, MD, was thrilled to have “a place that faculty and staff who are working globally in maternal newborn child health can come together and be part of a community.”

But Walker did not want to limit the center to serving the needs of core faculty members. She wanted to open the center to a broad range of people, particularly early career faculty, who could not only soak up valuable information, but also make connections that could lead to fruitful collaborations.

“Our meetings tend to be much broader,” Walker says. The center includes core faculty members “but also we have people from pediatrics, nursing,

OB/GYN, family medicine, emergency medicine—people that are coming together that have worked in maternal newborn child health, but haven’t really had a place within their departments to go to.”

“It’s particularly useful for the early career faculty members to feel that there’s actually some support and they’re not all just orphans, trying to forge their way through academic work,” Walker says.

It’s especially critical at this moment, as so many things about the academic workplace are changing. “Helping everybody navigate what that means and how we’re doing that is important,” Walker says.

Through one of those sessions, Walker contributed to a research proposal led by Nadia Diamond-Smith, PhD, MS, who had received NIH funding for gender-based work in northern India. Walker, an expert in maternity, encouraged collaboration with other researchers with expertise in water quality and nutrition.

While Diamond-Smith looks at how gender-based customs in the region often affect pregnancy outcomes, water and nutrition also play a huge part. Now the group can bring in each of these components—not only seeing the impact of the husband’s parents’ wishes on a woman’s pregnancy, but also the impact of nutrition, clean water and pregnancy preparedness. With that comprehensive picture, the group hopes it can develop an integrated intervention that might lead to better outcomes.

“It’s this idea of an intervention for newly married women which is really cross-sectional in its nature, covering some of these factors influencing women during their reproductive years,” Walker says.

Traditionally, many people in academia—like anyone—“tend to work in silos,” Walker says. “We’re trying to create a culture of shared mutual support. People can feel comfortable that their ideas are safe, their work is theirs, but a multi-trans-interdisciplinary approach is probably the way to go.”



Photo by Steve Babujak

“

The science [of a disease] is explained and the natural history, pathophysiology, diagnosis and treatment are mapped out, and the majority of the people on the planet burdened by the disease don't benefit from that. The tragedy of that is something that this institute sees as a core motivator and explains everything we do.”

—Eric Goosby

Part II: Health Equity: A Promise to the World

Advances in health have led to cures, treatments and vaccines that can prevent or ameliorate many terrible diseases. But one of the tragedies of modern times is that these advances are not available to everyone—and often they're only available to people who can afford to pay for them.

“So much of the science known to medicine does not benefit the majority of the people who are burdened by disease,” says Eric Goosby, MD, director of IGHS's Center for Global Health Delivery and Diplomacy. “The tragedy of that is something that this institute sees as a core motivator and explains everything we do.”

IGHS scans the globe, sees where the needs are greatest, and looks for ways to address those needs. The desire for health equity is intrinsic in those people who work in global health.

Fundamentally, examining issues of health equity involves asking: Who has the power? Who has the voice? How are we thinking about vulnerable populations?

The call for health equity carries deeper implications as well.

Health equity is often paired with a movement known as “decolonization,” which seeks to put power in the hands of the people in the countries that are fighting the diseases, instead of keeping it with the outsiders who, however well-intentioned they may be, come to aid those countries.

Many of the world's poorest countries still grapple with the legacies of colonialism, in which northern powers brutally controlled the country and took its natural resources while doing little to benefit—and often actively harming—the people who lived there.

IGHS works with ministries of health in distributing medical curriculum, spreading knowledge—and then letting the local people decide how best to implement the solutions, as they'll know what will work best in their countries.





Spreading the word on equity

In 2022, UCSF began a collaboration with the Centers for Disease Control and Prevention, training scientists at the CDC to understand and address health disparities. Ali Mirzazadeh, MD, PhD, MPH, associate director of the IGHS PhD program, says the training teaches how to design studies that intervene and correct issues of health inequity, both domestically and abroad.

In training IGHS students in both the master's and PhD programs, equity has been incorporated into almost every aspect of the education. "In the master's program, we have a course that is dedicated to the social determinants

of health," says Chris Carpenter, MD, MPH, director of the MS in Global Health program. "My predecessors have just done a fantastic job in developing this curriculum over the last several years."

He notes that health equity is part of courses such as biostatistics and epidemiology, as well as in the examples and case studies brought to students. "There has been a transformation in global health over the last five to 10 years in weaving that in throughout the curriculum," Carpenter says. "It's not something that is just taught in one class. It's really embedded in the education."

Above: master's students in class;
right: Ali Mirzazadeh,
associatedirector of
the PhD program.

Photos by Elisabeth Fall



Making pulse oximeters more accessible, accurate and equitable

Pulse oximeters are a vital tool in modern medicine. By measuring the level of oxygen in a patient's blood, the oximeter gives medical professionals a wealth of information: Is the medication working? Does the patient need help breathing? Is a patient under sedation getting enough oxygen? Is this person able to tolerate physical activity?

Many patients around the world do not have access to safe pulse oximeters. Market barriers like high costs and limited supply make safe access difficult, especially in low- and middle-income countries.

Beyond market access problems, some devices are poorly made or inadequately tested. And some don't work well on people with dark skin pigmentation, low perfusion or severe anemia,

further impacting safety and equity. In 2022, IGHS's Center for Health Equity in Surgery and Anesthesia (CHESA), in partnership with the UCSF Hypoxia Lab and other collaborators, launched the Open Oximetry Project to address all of these challenges in order to improve access to accurate pulse oximeters globally.

"It is long overdue to see growing interest in this neglected topic," said CHESA Associate Director Michael Lipnick, MD. "We are excited to leverage some of the relatively unique resources we have here at UCSF at the intersection of health equity, pulse oximetry research and clinical studies and not only share these with researchers and developers to accelerate their work, but also find ways to effectively share data with the public."

The Open Oximetry Project has grown into a hub for bringing together oximetry experts, engineers, academic researchers, clinicians, community members, manufacturers, and regulatory bodies from many geographies and backgrounds.

“

We are excited to leverage some of the relatively unique resources we have here at UCSF at the intersection of health equity, pulse oximetry research and clinical studies and not only share these with researchers and developers to accelerate their work, but also find ways to effectively share data with the public.”

– Michael Lipnick





Advancing health through equitable partnerships

UCSF has declared a mission: Advancing Health Worldwide. The tagline is on billboards and in advertisements.

In large part, IGHS is making sure UCSF lives up to that motto. It's taking health advances and bringing them to underserved people around the world.

"If we are really true to principles of equity," says Dilys Walker, MD, director of IGHS's Center for Global Maternal, Newborn and Child Health, "we have to look carefully at our institutional partnerships around the globe and address how inequities in our partnership practices potentially impact the research and our collaborators in low- and middle-income countries."

IGHS launched an effort in 2022 to examine those partnerships and identify domains in which UCSF could work to better uphold certain principles of health equity. The effort was led by Carol Camlin, PhD, MPH, a UCSF social demographer and behavioral scientist with UCSF's Bixby Center for Global Reproductive Health—together with Walker, Purba Chatterjee, MSc, Bixby's associate director of Global

Health Equity, and Mike Reid, MD, director of IGHS's Center for Pandemic Preparedness and Response (CPPR) and associate director of the Center for Global Health Diplomacy, Delivery and Economics.

"We recognized that there was a lot of academic work around decolonization but very little action, particularly action grounded in our partners needs and priorities," Walker says. Much of the academic discourse around decolonizing global health has failed to keep the voices of LMIC partner institutions at the center of calls for change.

Walker says the group "started with a survey of our academic partners whom we do research with, to better understand: What did they get out of partnering with UCSF? What are the benefits? What are the challenges? What are their priorities?"

The group also generated "a series of case studies that were very telling and sobering," Walker says.

Through the survey and a series of virtual and in-person meetings with partners, they defined the domains of action for problem solving: administration and finances, training and mentorship, relationship building, knowledge transfer, and authorship.

"We've formed working groups in each of these domains, which are co-led by one of our global health partners and

someone from UCSF to really create a roadmap for addressing some of these things," Camlin says.

Some of the things that need fixing will pose steep challenges, but some are what Walker calls "low hanging fruit."

"One of these that came out from our partners was, they really hate being forced to write something that's called a 'hardship letter,'" Chatterjee says. When a grant is coming, but the grantee doesn't have the money in its coffers to start the work, the grantee often requests an advance of funds. The grantees took umbrage at the term, because they aren't suffering any hardship—they just need the money to get started.

"So we changed the word," Chatterjee says. "It's not a hardship letter. It's an advance request."

If only all problems could be solved so quickly. Others will require more effort, but are still worth pursuing.

"Our role in global health equity is dependent on building more equitable partnerships with those institutions and researchers that are tasked with this work in the countries where we work, whether it's government or academia or NGOs," Walker says. "We need to be there in service to the local needs, not for our own academic research agendas."



Using technology to combat discrimination

While various forms of training in Diversity, Equity, and Inclusion (DEI) have been implemented in many workplaces, some studies suggest that training focused on reducing implicit bias doesn't have a sustained effect. Still, implicit bias impacts the care for Black, Indigenous, and People of Color (BIPOC) patients, so identifying strategies to mitigate the harm of implicit bias is essential.

Researchers with the Center for Pandemic Preparedness and Response (CPPR—originally called the UCSF Pandemic Initiative for Equity in Action, or UPIEA) wanted to find out if appealing to healthcare workers' empathy

might be the answer. With that question in mind, Principal Investigators Kelly Taylor, PhD, MS, MPH, Mike Reid, MD, and Program Manager Nova Wilson led a new effort they called Combating Unequal Treatment in Healthcare Through Virtual Awareness and Training in Empathy (CULTIVATE).

The CULTIVATE study team collaborated with a diverse group of investigators and UCSF Community Advisory Board members to develop a virtual reality (VR)-based cultural humility training. Studies show that when users experience someone else's life in a virtual environment, their empathy for that person and their group increases. The CULTIVATE researchers wanted to find out if the same was true for healthcare workers caring for BIPOC patients.

Using VR headsets, the project takes healthcare workers through the experience of going to a doctor's office and experiencing different types of

discrimination along the pathway of care. When medical professionals went through the training, they expressed a newfound awareness of how their own privileged identities get in the way of their ability to recognize implicit bias in action.

One study participant realized that their habit of looking at the person they're speaking to might be problematic when an interpreter is involved. This participant has shifted their approach and now face and speak directly to the patient, even when the interpreter was in the room.

Above: Lynnea Anicete, MS, of CULTIVATE shows Taytum Sanderbeck of the Center for Pandemic Preparedness and Response how CULTIVATE's virtual reality goggles work.

Photo by Elisabeth Fall



Left: Michelle Hsiang, in center, giving a presentation during the project annual meeting held at Ifakara offices in Bagamoyo, Tanzania. Sylvia Jebiwott, MPH, on left, is a research study coordinator with the Malaria Elimination Initiative.

Photo by Ifakara/KMC

Bringing equity to the fight against chronic malaria

Much of modern medicine's work on malaria has focused on stopping or preventing the disease in its most acute and often fatal incarnation. Yet in some cases, malaria can linger in a low-grade chronic form—which can cause other health problems, as well as perpetuate the parasites that stand in the way of complete eradication.

In April 2022, IGHS's Michelle Hsiang, MD, MS, in collaboration with Ifakara Health Institute's Ally Olotu MD, PhD, launched an NIH-funded clinical trial in Bagamoyo, Tanzania, that could transform what we know about the often-overlooked condition of chronic malaria.

IGHS's Malaria Elimination Initiative (MEI) provides countries with an evidence-based, user-friendly toolkit to tackle this disease, the deadliest in human history. Fighting malaria is an exercise in health equity—in tackling an infectious disease that's largely solved in the global north but remains pernicious in regions afflicted by poverty.

MEI notes that more than 20 countries around the world have eliminated malaria since 2000 and 49 countries have less than 10,000 indigenous cases.

While these success stories mount, growing evidence suggests that chronic malaria is a serious health concern. It can cause anemia and leave people more susceptible to other infections. It can interfere with children's growth and cognitive development.

"In higher transmission settings, there hasn't really been a lot of focus on treating people with chronic malaria because the goal has been to decrease

the burden of disease, with a focus on decreasing acute illness and deaths," Hsiang says.

But fighting chronic malaria also needs to be part of any malaria elimination strategy.

"If people are walking around with parasites, that becomes an issue in elimination settings," Hsiang says. "Chronic infections are a reservoir for persistent transmission in communities."

Researchers will test 600 children under age 10. But the common rapid tests only catch 50 to 75 percent of low-level malaria infections, Hsiang says. The hypothesis: more sensitive and aggressive testing will catch more cases of chronic malaria, and treating those cases will leave more kids free of parasites for longer stretches so that their overall health and development should improve.



Photo by Christen Said

“

After year one, the CDC said we can run the project alone. We are managing that project alone without any support from UCSF. For us, that's a big achievement.”

—Mackfallen Anasel

Part III: Developing Meaningful Collaborations in Low- and Moderate-Income Countries

IGHS finds the key to working with partners in other countries is to give them the respect they want and deserve. For too many years, Western funders have made the people they're ostensibly helping play second fiddle.

A new generation has come to realize that the people in the countries are trying to improve the health of their fellow citizens, and they often know best how to get things done in their own culture. Certainly they know their culture better than a foreign funder parachuting in.

Under the old way of operating, things were one-sided: A Western academic would get a grant, come in and do the research, get the data, publish it and move on. Often the journal that published the research wouldn't even be available in the country where the work was done, unconscionably leaving people in the dark—unable to act on the findings.

Throughout IGHS, people are looking for ways to let the people take the lead in their own country, with IGHS serving a supporting role.

One example of IGHS's approach in this regard involves Mzumbe University in Tanzania. Dr. Mackfallen Giliadi Anasel, head of Mzumbe's Department of Health Systems Management and Centre of Excellence in Health Monitoring, has had a working partnership with UCSF since 2012, marking its 10th anniversary in 2022.

The program has graduated more than 130 students in health systems management, and they have gone on to work at hospitals and clinics, in government, and for non-governmental organizations. It also trains people to evaluate programs so they'll know what's successful, and what needs further refinement. The center also hosts an annual international conference and publishes a medical journal.

The *East African Journal of Applied Health Monitoring and Evaluation* initially had an editor from UCSF, but leadership has transferred to Mzumbe, which now runs it on its own. Mzumbe has also applied for grants from the U.S. National Institutes of Health and the Centers for Disease Control—with Mzumbe serving as the prime contractor, and UCSF taking a supporting role.

In developing curriculum, the UCSF experts may provide high-level content, but people from Mzumbe can then make the content more specific and relevant to Tanzania.

In 2020, Mzumbe worked with UCSF to draft a proposal, with Mzumbe as the prime contractor and Anasel as the principal investigator. The CDC funded the project for three years. “After year one, the CDC said we can run the project alone,” Anasel says. “We are managing that project alone without any support from UCSF. For us, that's a big achievement.”



Teaching people to deliver high quality HIV care

One of the most innovative and impactful programs in building a workforce that can deliver high-quality HIV care in Africa is known as STRIPE HIV, for Strengthening Interprofessional Education for HIV.

Under the leadership of Eric Goosby, MD, director of IGHS's Center for Global Health Delivery, Diplomacy and Economics (CGHDDE), IGHS faculty and staff teamed up with the African Forum for Research and Education in Health (AFREhealth) to establish the program.

The program received vital funding from the Health Resources and Service Administration (HRSA) and the U.S. President's Emergency Plan for AIDS Relief (PEPFAR).

STRIPE HIV's overarching goal is to ensure that pre-service medical and nursing students and early career professionals are prepared to translate lessons and learnings from the classroom to high-burden clinical settings.

"STRIPE brings together an interprofessional audience to go over a host of different modules aimed at increasing learners' capacity to deliver high quality HIV care," says Jess Celentano, deputy director of CGHDDE. "The interactive, case-based modules were developed in partnership with AFREhealth and other health professional training institutions in sub-Saharan Africa, and implementing partners continue to tailor the trainings to the realities of their individual contexts."

STRIPE HIV training partners include 28 medical, nursing and health sciences institutions from 15 countries, including healthcare workers from over 600 clinical sites. Through November 2022, 1,342 facilitators have trained 13,954 learners. Learner evaluations have demonstrated improvements in HIV knowledge, clinical care practice and use of quality improvement tools, and an understanding and respect for other professions' roles in the delivery of HIV care.

"Working as an interprofessional team has made the greatest difference," says one Ugandan nurse who participated in STRIPE HIV. "Normally, every health worker is focused on completing their tasks. However, the training has

enabled us to learn together and, after the training, collaborate to identify root causes of the low performance on the indicators and collectively come up with solutions."

The people who lead the trainings benefit as well, as they have reported increased confidence in using interprofessional collaborative practices in their work.

Beyond training, STRIPE HIV has spurred efforts to incorporate interprofessional education, quality improvement strategies, and case-based modules into curricula at universities.

The program has spawned other successful initiatives as well, most notably the Prof. James Hakim Leadership Development Program (JHLDP) in Africa, named for an outstanding researcher and transformative leader. The JHLDP aims to provide leaders across sub-Saharan Africa with the skills to lead successful health programs and to be decisive leaders, effective mentors and dynamic communicators. The JHLDP promotes interprofessional collaboration and diversity in health care leadership. To date, 56 individuals have graduated from the JHLDP.



STRIPE HIV training partners include

28 medical, nursing, and health sciences institutions from **15** countries

Healthcare workers from over **600** clinical sites

1,342 facilitators have trained **13,954** learners (as of November 2022)



“

There are crises happening all over the world, and IGHS has connections with scholars and institutions all over the world. The opportunity to work collaboratively and possibly bring scholars over here to continue their education and offer them support is just part of the overall mission of UCSF and especially of IGHS.”

— Jess Ghannam

Helping scholars from troubled lands

Far too often, war and violence stand in the way of providing health care, training and research in low- and moderate-income countries. Often these are the countries where the health care needs are greatest, yet many of those working in the field face incredible risks in trying to do their jobs.

Researchers in these war zones often find themselves needing to leave their homeland if their work is to continue. And that's where the international Scholars at Risk movement comes in.

UCSF developed a chapter of the national Scholars at Risk organization in 2021, when the Taliban returned to power in Afghanistan. Jess Ghannam, PhD, a professor of psychiatry and global health at the School of Medicine, sprang into action. With support from UCSF's Executive Vice Chancellor and Provost's office (EVCP) and IGHS, UCSF brought two Afghan scholars to the University.

Thanks to a generous anonymous donation, the program has grown to support 14 scholars, from Ukraine, Iran, Afghanistan, Uzbekistan and other countries. Ghannam hopes to get more funding to support scholars from Turkey and Syria after the devastating earthquake that struck in February 2023.

“One of the places where we have found the greatest opportunities to help scholars at risk has been at IGHS,” Ghannam says. “It's a natural fit, just because so many of our students in the masters and the PhD program at IGHS come from parts of the world that are in turmoil right now. They would love to come to UCSF and get advanced training, but are unable to do it without adequate resources.”

“There are crises happening all over the world, and IGHS has connections with scholars and institutions all over the world,” Ghannam says. “The opportunity to work collaboratively and possibly bring scholars over here to continue their education and offer them support is just part of the overall mission of UCSF and especially of IGHS.”

The latest scholars who joined, from Afghanistan and Tajikistan, are “super-stars,” Ghannam says. He can't identify them by name, for fear of putting them or their families back home at risk. “We're especially concerned and want to be protective of our students,” Ghannam says.

Ghannam would love to help more people—the need is certainly there, as is the interest—but he needs more money to make it happen.

“Our funding will eventually run out,” he says. “There's no hard money here. We only operate from the generosity of our donors and our foundations. The program is wildly successful. It's helping people who would otherwise never be able to come to UCSF. But it only survives because of the generosity of others.”

To donate to Scholars at Risk at UCSF, please visit:

tiny.ucsf.edu/ScholarsAtRisk

Fighting the stigma and the law

People from some of the groups most commonly afflicted with HIV—men who have sex with men, sex workers, and people who inject drugs—are often stigmatized in their home country, and the behaviors are often criminalized, leaving people from these groups reluctant to get tested or even treated.

“Even in accessing health care, they experience stigma and discrimination,” says Susie Welty, MPH, of IGHS’s Center for Global Strategic Information and Public Health Practice. “In terms of addressing health equity, we have to get really serious about how we’re going to tackle the stigma and discrimination. We need a more person-centered approach that educates the healthcare system about the rights of people and gets them to the point of empathy.”

“Right now, if someone who’s gay goes into a clinic in Tanzania, they can be chastised for their behaviors if they present that way, so it just fosters this awful cycle of people feeling discriminated against and then going further into being more vulnerable and not being open about it,” she says.

In taking the lessons learned in San Francisco in the fight against HIV and AIDS and bringing them to other places around the world, Willi McFarland, MD, PhD, MPH, has seen a common pattern: Denial. It’s happened in China, in Uganda, in Ghana. And more recently, it’s happened in Zanzibar, where the Centers for Disease Control is funding IGHS’s work.

“You present the idea that there’s this community of men who are having sex with men who need programs adapted for them,” McFarland says. “Many people in the room give you a wry look. They say, ‘We don’t have gay men in Africa,’ or China, or Ghana, wherever they are. They say, ‘You might find some, but it’s people who are elite, who are imitating Western lifestyles, who are servicing tourists. But it’s not something that’s part of our society.’”

“Besides,” they say, “we have strict laws against it.”

They make the same contention about prostitutes and intravenous drug users, who also face an elevated risk for HIV.

McFarland says he typically gives them a wry look back and says, “Okay. Nonetheless, the funding is here.” And they let him go ahead and start the study.

And invariably, he finds gay men, prostitutes and intravenous drug users. Lots of them.

“In Uganda, we enrolled several hundred in several weeks,” McFarland says. “They wanted their voice to be heard.”

“

In Uganda, we enrolled several hundred in several weeks. They wanted their voice to be heard.”

– Willi McFarland

McFarland has now been visiting Zanzibar for several years on the CDC-funded study. The island nation off the coast of Tanzania is the first place in the world where investigators have done four rounds of population surveillance, with technical assistance from IGHS. “The capacity of the investigators in Zanzibar has been built to the point where we are supporting their work but they are leading it,” Welty says.





“

The more people that come to the party, the more people that have a chance to talk to each other to collaborate, to work on a grant. That's really better for everyone involved.”

– Teresa Kortz



Opening IGHS to all of UCSF

IGHS stands outside UCSF's four schools—Dentistry, Medicine, Nursing and Pharmacy—as an Institute unto itself. While that enables IGHS to collaborate with people from all schools, it also means it's had to work to make those connections.

In 2016, IGHS established the Affiliate Program, so that any faculty member could link with the institute. “The mission was to improve the sense of community across UCSF and the broader global health community and to really break down the silos and promote collaboration and networking,” says Teresa Kortz, MD, MS, who took over from Mike Lipnick, MD, as director of the Affiliate Program in November 2022.

Ultimately, the program dropped the faculty requirement, becoming more inclusive as anyone in the UCSF community could now affiliate with IGHS.

The program had several highlights in the past year:

- **Investing in the next generation.** The Affiliate Program established the Early Career Global Health Scientist Award to recognize outstanding promise in the field of global health, and the Affiliate Seed Award Program (ASAP), which launched in 2022 and provides funding to the next generation of global health practitioners. “What's neat about this is that it prioritizes early career investigators,” Kortz says.
- **Encouraging collaboration.** The program also provides funding for people to travel either from low- and middle-income countries to UCSF, or from UCSF to the LMICs—whether to network, take a class, conduct research, attend a conference or some other viable reason.
- **Global Health careers.** The program began planning a three-day conference, set for 2023, to connect the Bay Area global health community with people from all over the world.

- **Global affiliates program.** UCSF faculty can nominate collaborators from outside institutions around the world to join the affiliate program. “It's a way to get partners recognition as well as access to resources,” Kortz says.

When affiliates join IGHS, their online profile connects them to others working in global health equity. “It allows people to identify other people who are working in that same area, whether it's child health and maternal health, if it's local or global, and trying to make those connections,” Kortz says.

It's one more silo toppling.

“The more people that come to the party, the more people that have a chance to talk to each other to collaborate, to work on a grant. That's really better for everyone involved,” Kortz says.

Our Centers

In 2022, IGHS reorganized our wide array of expertise and research areas to leverage our full capabilities and improve operational performance and impact. In addition to our Education Program, we now have seven centers:



IGHS snapshot

370+ employees: faculty, non-faculty academics, staff, post-docs, interns, and graduate student researchers

380+ affiliated faculty in UCSF Schools of Medicine, Nursing, Pharmacy, Dentistry

21 employees reside outside of the U.S in **18** countries (Canada, Egypt, Jamaica, Kenya, Laos, Malawi, New Zealand, Scotland, Sierra Leone, Singapore, South Africa, Spain, Switzerland, Tanzania, Thailand, Uganda, United Kingdom and Zimbabwe)

Budget: **\$90** million (FY2022); **90%** from sponsored projects

IGHS works in **50** countries

Leadership

IGHS faculty leadership

Kimberly Baltzell, RN, PhD, MS

Director of Partnerships

Caryn Bern, MD

Director, Center for Infectious and Parasitic Diseases

Christopher Carpenter, MD, MPH

Director, Master of Science Program

Craig Cohen, MD, MPH

Co-Director, UC Global Health Institute

Haile T. Debas, MD

Founding Executive Director, Global Health Sciences; Former UCSF Chancellor

Elizabeth Fair, PhD, MPH

Director, PhD Program

Richard Feachem, KBE, DSc(Med), PhD

Director, Global Health Group

Eric Goosby, MD

Director, Center for Global Health Delivery, Diplomacy and Economics

Michelle Hsiang, MD, MS

Director of Research, Malaria Elimination Initiative

Teresa Kortz MD, MS

Director, IGHS Affiliate Program

Michael Lipnick, MD*

Director, IGHS Affiliate Program

Doruk Ozgediz, MD, MSc

Director, Center for Health Equity in Surgery and Anesthesia

Michael Reid, MD

Director, Center for Pandemic Preparedness and Response

George Rutherford, MD

Acting Executive Director, Institute for Global Health Sciences; Director, Center for Global Strategic Information and Public Health Practice

Jaime Sepulveda, MD, DSc, MPH

Executive Director, Institute for Global Health Sciences; Haile T. Debas Distinguished Professor

Rebecca Silvers, DNP, MSN

Director, Center for Global Nursing

Allison Tatarsky, MPH

Director, Malaria Elimination Initiative

Dilys Walker, MD

Director, Center for Maternal, Newborn and Child Health

Kelly Young, MA

Deputy Director, Global Strategic Information

Paul Wesson, PhD

Associate Director for Science

IGHS administration

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Director of Program Development and Strategy

Kemi Amin*

Director, Communications

Melissa Bacina

Director, Staffing and Strategic Operations

Inez Bailey, MS

Director, Education Strategy and Operations

Alden Blair, PhD, MS

Associate Director, Master of Science Program

Jess Celentano, MS

Deputy Director, Global Health Delivery and Diplomacy; Chief Operations Officer, UCSF Pandemic Initiative for Equity and Action

Ingrid Chen, PhD, MS

Associate Director, Master of Science Program

Sun Yu Cotter, MPH

Deputy Director, UC Global Health Institute

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Susan Hsieh

Director, Communications

Georgina Lopez

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Senior Executive Assistant to the Director

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Associate Director, PhD Program

Hannah Park*

Deputy Director, Maternal, Newborn and Child Health Research Cooperative

Karen White Horn, MPH, MBA

Chief Technical Officer, UCSF Pandemic Initiative for Equity and Action

Ellyn Woo

Director, Finance Management

UCSF Leadership Council for Global Health

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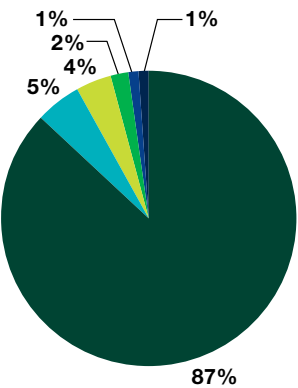
Diede van Lamoén

Founder and Chief Executive Officer, Commure

*Left position during 2022

Financials

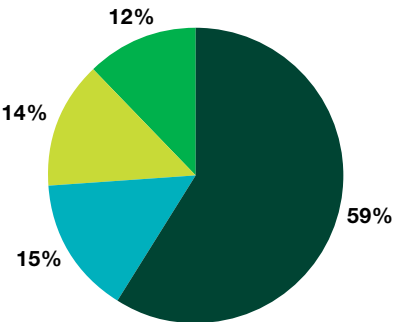
Fund sources



Total: \$93,573,896

- Sponsored projects
- Gift/endowment income
- Campus and core funds
- Tuition and fees
- Indirect cost recovery
- Other

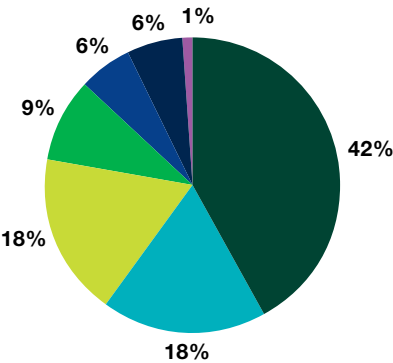
Fund uses



Total: \$93,020,360

- Personnel costs
- Facilities and administration
- Other non-payroll
- Subawards

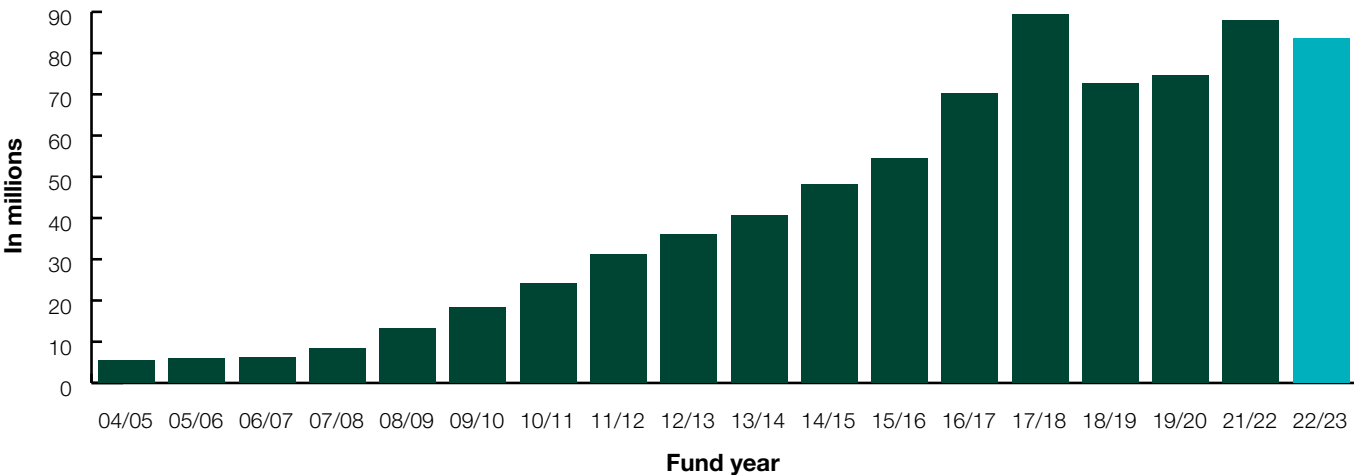
Major funders of sponsored projects



Total: \$99,893,820

- Centers for Disease Control and Prevention (CDC)/California Department of Public Health
- President's Emergency Plan for AIDS Relief – PEPFAR (CDC)
- California Department of Public Health
- Bill & Melinda Gates Foundation
- National Institutes of Health (NIH)
- Other
- HRSA/USAID

Sponsored projects expenditures



Data on this page reflects in-year project expenditures, July 1, 2022–June 30, 2023. June 2023 numbers are projections.

Donors

We are grateful to the individuals, families and organizations that provided generous support to help us advance IGHS programs and research in 2022.

Individuals and families

Over \$100,000

Priscilla Chan and Mark Zuckerberg
Carl Kawaja and Gwendolyn Holcombe
Maribelle Leavitt and Stephen Leavitt

\$10,000–\$99,999

Barbara Bakar
Nasi Jazayeri
Nikolajs Lapins and Denise Lapins

\$1,000–\$9,999

Sally Rankin
Jeffrey Sturchio
Mary Wilson and Harvey Fineberg

\$1–\$999

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*Listings are for the 2022 calendar year.
IGHS faculty and staff during 2022.

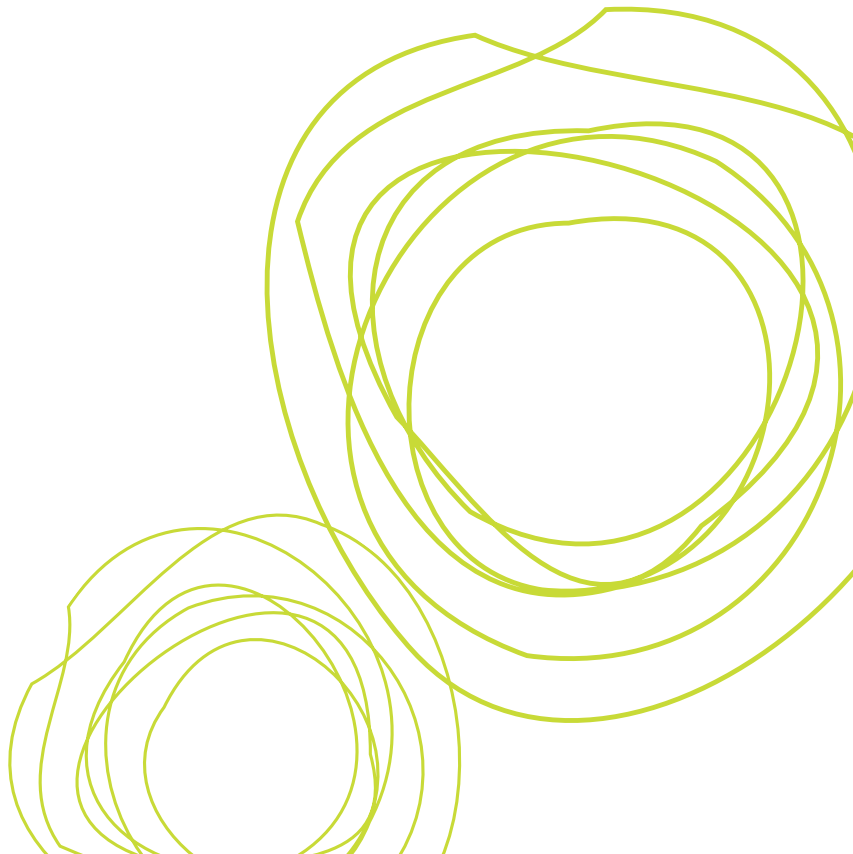


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Note that some photos are captioned and credited on the pages that they appear.

Cover: Top: Phyllis Kisa, MBChB, FCS, MMed, pediatric surgeon, urologist and CHESA leadership committee member, operates on a child at Mulago Hospital in Uganda. Photo by Joshua Gumisiriza.

Bottom left: Master's students in class. Photo by Elisabeth Fall. **Bottom right:** A malaria researcher working with the Malaria Elimination Initiative in Aceh Province, Indonesia. Photo by Paul Joseph Brown.

P4: Top: Mary Nabukenya, MBChB, MMed, is a pediatric anesthesiologist at Mulago Hospital in Kampala, Uganda and leads the Uganda National Surgical Obstetric Anesthesia Planning (NSOAP) initiative, supported by CHESA. Photo by Joshua Gumisiriza. **Middle:** Cornel Sendagire, MBChB, MMed, is an anesthesiologist at Mulago Hospital, lecturer at Makerere University and a CHESA leadership committee member. Photo by Joshua Gumisiriza. **Bottom:** A nurse and study coordinator with whom the Malaria Elimination Initiative worked in Aceh Province, Indonesia. Photo by Paul Joseph Brown.

P8: Ivan Vega. Photo courtesy of Ivan Vega.

P11: Nadia Diamond-Smith. Photo by Elisabeth Fall.

P13: Pulse oximeter in use. Photo by Wavebreak Media.

P15: Seated together at the “Equitable Global Health Partnerships” meeting in Nairobi, Kenya, November 2022 are, from left to right, IGHS partner Margaret Mukoki, Administrative Director, University of Zimbabwe – UCSF Clinical Trials Unit; LaMisha Hill, PhD, vice chair for equity, inclusion and structural change for the UCSF Department of Obstetrics, Gynecology, and Reproductive Sciences; Elizabeth Rojo, MA, program manager within the Center for Pandemic Preparedness and Response; and IGHS partner Beatrice Mushi, MD, MPH, Program Manager, Muhimbili University of Health and Allied Sciences-ORCI-UCSF Cancer Collaboration.

P20: Illustration adapted from one by Angelina Bambina via Shutterstock.

P21: Photo by Vladimir Vladimirov.

This page: Nova Wilson, MPH, CULTIVATE program manager within the Center for Pandemic Preparedness and Response. Photo by Elisabeth Fall.

Back cover: Master's student Abi Higgins working with community health worker Gerardo Vasquez from One Community Health on a mobile health clinic called La Clinica. La Clinica travels across rural Oregon and Washington improving access to care for underserved people, including those experiencing homelessness, Native Americans, migrant and seasonal farmworkers and people in isolated rural communities.

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