Launching the Second Revolution in Global Health
RISING TO THE CHALLENGE

A CALL TO ACTION
Rising to the Challenge: The Campaign for Johns Hopkins will raise unprecedented levels of support to attract, sustain, and further empower the people of Johns Hopkins—our students, faculty, and researchers—who through their work improve the lives of millions around the world. Together with our philanthropic partners we will:

ADVANCE DISCOVERY AND CREATIVITY
through support of our exceptional faculty and researchers. Their innovative work drives the development of new knowledge, new forms of expression, and new ways to save lives and improve health, and furthers progress across our core disciplines in science and technology, the humanities and arts, and public health and medicine.

ENRICH THE STUDENT EXPERIENCE
by investing in scholarships and fellowships, inspirational spaces for collaborative learning and social opportunities, and new programs that will enhance student-faculty interactions, ensure diversity on campus, link learning in the classroom to life after graduation, and strengthen connections between our students and our surrounding communities.

SOLVE GLOBAL PROBLEMS AS ONE UNIVERSITY
by creating new cross-disciplinary solutions in crucial areas such as sustaining global water resources, revitalizing America’s cities, advancing individualized health, understanding how we learn and teach, and attacking the root causes of global health problems.

THE FIRST REVOLUTION
IN GLOBAL HEALTH:
APPLYING THE BASIC SCIENCES
In the 20th century, Johns Hopkins led an effort to apply basic sciences—biochemistry, pathobiology, microbiology, and immunology—to health problems around the world. The impact was revolutionary. We pioneered the chlorination of water supplies, discovered vitamin D and heparin, laid the groundwork for polio vaccines, and developed crucial advances such as vitamin A therapy to reduce childhood mortality and oral rehydration to treat childhood diarrheal diseases.

As valuable as these advances continue to be, today we face deeper, more complex, and more widespread problems whose solutions will require a second revolution—one in which we bring together a still wider range of disciplines in our work.

THE SECOND REVOLUTION:
ATTACKING THE ROOT CAUSES
Today’s global health problems are formidable and spreading, including cancer, infant mortality, malaria, diabetes, HIV/AIDS, obesity, and cardiovascular disease. At Johns Hopkins, we possess many of the capabilities needed to take on these multi-faceted problems. We have built long and intensive partner relationships with health care organizations such as sustaining global water resources, discovered vitamin D and heparin, laid the groundwork for polio vaccines, and developed crucial advances such as vitamin A therapy to reduce childhood mortality and oral rehydration to treat childhood diarrheal diseases.

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Help For Families
Brutalized By War
Pigs for Peace, a non-profit microfinance program in the Democratic Republic of Congo co-founded by Nancy Glass, PhD, a School of Nursing professor and associate director of the Center for Global Health, collaborates with Congolese partners to test methods for helping women and their families brutalized by war. The program lends families an asset with a strong return on investment—pigs—and provides training and veterinary support in breeding them. Families return the pigs and repay the program with two piglets, keeping others for food or selling them to pay for school, food, and health care.

A REVOLUTION IS AT HAND—WITH YOUR HELP

Root Causes of Global Health Problems
- Poverty, lack of education and employment opportunity, gender inequality, discrimination, and human rights violations threaten the health and well-being of millions.
- Weak public institutions and failing health markets lead to growing health inequality, counterfeit medicines, and drug resistance.
- Mega-cities are expanding explosively; diet change, unhealthy air, water, and housing, poor infrastructure, and violence are the new urban health challenges.
- Trends in aging, obesity, non-communicable diseases, and injuries are outpacing the changes needed in prevention, treatment, and financing of health care, while millions of the poor remain vulnerable to under-nutrition and infectious diseases.
WHY JOHNS HOPKINS MUST TAKE THE LEAD

For nearly 30 years, Robert Gilman, MD, Bloomberg School professor, has helped lead Peru’s battles against tuberculosis, diarrhea, and other diseases and built a sustainable network of trainees to carry that work into the future.

Such long and intensive involvement in a country’s health problems defines the Johns Hopkins approach to global health. In Peru, Uganda, Bangladesh, Nepal— in more than 100 countries around the world—when Johns Hopkins comes to help, that help will be measured in decades of deep involvement and in close relationships with everyone from ministers of health to poor children on the street.

FACULTY LEADERSHIP, FROM DISCOVERY TO IMPLEMENTATION

Johns Hopkins faculty members have a rich history of life-changing discovery in global health, ranging from Lasker Award recipient Alfred Sommer (vitamin A), to Abel Wolman (water chlorination), the Sack brothers (oral rehydration for diarrhea), Nobelist Peter Ager (malaria), Robert Black (zinc for diarrhea), Robert Bollinger (medical education), and Sheila West (trachoma). Equally important is our core strength in large, population-based programs in which innovations are tested in remote, resource-limited settings. For example, in collaboration with the Bangladesh Ministry of Health and Family Welfare and supported by a grant from the UBS Optimus Foundation, Alain Labrique, SPH ’99 (MHS), ’07 (PhD), director of the university-wide mobile health (mHealth) program, is using mobile phone and database technologies to improve monitoring of pregnancies and optimize neonatal and postpartum care. Labrique has also developed locally made technologies for measuring newborns and other essential tasks.

SUCCESS IN LEVERAGING FUNDING—1:7

Great ideas often start as small insights that must be cultivated, tested, refined, and scaled up. At Johns Hopkins, we have demonstrated a remarkable capacity to recognize worthy ideas, find start-up funding for them, and turn them into high-impact programs. For example, for every dollar our Center for Global Health has invested in early-stage projects, we have secured seven dollars in subsequent grants from funding sources such as the National Institutes of Health and U.S. Agency for International Development. This exceptional record attests to the quality of our ideas, our understanding of the grant process, and our leadership in the field of global health.

AN EDUCATIONAL PROGRAM THAT SERVES THE WORLD

At every level, Johns Hopkins is inspiring, training, and placing young people in disciplines of value to global health. Graduate students in medicine, nursing, and public health, as well as medical residents, have numerous opportunities for global health research projects. Since 2007, a scholarship program has supported master’s degree studies for 57 people, 22 of whom are international students. And in countries around the world, research labs, educational programs, and care centers are staffed by local people trained by Hopkins leaders.

At the undergraduate level, highly respected majors such as Public Health Studies and Biomedical Engineering prepare students to attack global health issues from different perspectives. Public Health Studies requires students to have hands-on experiences with public health professionals across the country and around the world, and publishes a journal to promote undergraduate research. Students in Biomedical Engineering’s Center for Bioengineering Innovation and Design, backed by support from Medtronic, design, build, and test medical devices for developing countries.

Improve Cognition, Improve a Nation

Working in field sites in Nepal for over 20 years, Joanne Katz, Keith West, and Parul Christian have monitored the growth of children from birth into adulthood. In multiple studies they have investigated the link between early childhood micronutrient supplementation and cognition and development later in life. Recently, their studies have shown that micronutrient supplementation during pregnancy improved cognition and motor functioning among school-aged children. Katz notes that, “As newborn and childhood mortality decreases, childhood development is an increasingly important contribution to the country’s human resources—allowing it to become a stronger, healthier, and wealthier country.”

The Global Reach of Johns Hopkins

Led by the Johns Hopkins Center for Global Health—the first center of its kind—Johns Hopkins operates an extensive range of programs across its campuses and around the world:

• 34 centers and institutes are involved in global health programs.
• 666 active global health projects are in progress in 101 countries, involving 405 faculty members.

Alfred Sommer: “Foreign Friend” to the World

By discovering that oral, high-dose vitamin A could reduce childhood deaths by 34% in developing countries, and do so effectively, quickly, and cheaply, Alfred Sommer, MD, SPH ’73 (MHS), dean emeritus of the Johns Hopkins Bloomberg School of Public Health, created what the World Bank describes as the most cost-effective of all health interventions. Sommer’s additional contributions, over decades of work in several countries, range from disaster relief to smallpox vaccination to blindness prevention to standardization of care. Recently the government of Bangladesh recognized Sommer as a “Foreign Friend” for supporting refugees during the Liberation War there and working to control the smallpox epidemic that followed.

LENGTH AND DEPTH OF IN-COUNTRY PARTNERSHIPS

For nearly 30 years, Robert Gilman, MD, Bloomberg School professor, has conducted research and training on site in Peru, in close partnership with Cayetano University. “Science...is about solving problems,” states Gilman. “To do that, you have to understand the problem. I’ve found the best way to understand the problem is to be surrounded by it.” He has helped lead Peru’s battles against tuberculosis, diarrhea, and other diseases and built a sustainable network of trainees to carry that work into the future.

Each long and intensive involvement in a country’s health problems defines the Johns Hopkins approach to global health. In Peru, Uganda, Bangladesh, Nepal—in more than 100 countries around the world—when Johns Hopkins comes to help, that help will be measured in decades of deep involvement and in close relationships with everyone from ministers of health to poor children on the street.

THE JOHNS HOPKINS GLOBAL HEALTH INSTITUTE

• Travel is supported for an average of 150 students per year from across the university.
• Faculty pilot grants return high yields. Recently, 55 faculty members won $50,000 grants, and 24 of these went on to submit 51 grant applications to government funding sources. Of these applications 20 were funded, yielding $8.8 million in new support.
• Thousands of foreign trainees from our partner countries have returned home to build research capacity and partnerships with Johns Hopkins that span decades.

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PHOTO BY SIKAT MOJUMDER

COURTESY: ALFRED SOMMER

THE JOHN Hopkins GLOBAL HEALTH INSTITUTE
LAUNCHING THE SECOND REVOLUTION IN GLOBAL HEALTH

Obesity, sedentary lifestyles, and other factors have made diabetes a worldwide epidemic. More than 347 million people have the chronic disease, which damages the heart, blood vessels, eyes, kidneys, and nerves, and is responsible for nearly four million deaths each year—80 percent of them in developing countries—plus enormous disability, suffering, and social and economic loss.

Here in the United States, Johns Hopkins has established one of the nation’s top diabetes research, education, and clinical programs, engaging endocrinologists, ophthalmologists, geneticists, child health experts, and many others to advance our knowledge of the disease, train new experts, and provide outstanding care. If we could achieve even some of our U.S. program’s success in developing countries, we could do much to prevent and treat diabetes and improve life for millions of people.

We believe this is possible—for diabetes and other global problems—if we understand the root causes and key stakeholders, locally and internationally, and bring to bear a range of new disciplines never before engaged at a high level of collaboration.

RADICALLY EXPANDING AND UNITING OUR DISCIPLINES

One reason the Hopkins U.S. diabetes program succeeds is that it makes full use of the nation’s economic, technological, infrastructure, communications, and social resources. To achieve success in nations where such advantages do not exist, for diabetes and the full range of health challenges, we must build solutions that not only solve medical problems but also compensate for resource deficiencies. This means using innovative, multidisciplinary, scalable approaches, devised and implemented by people specially trained and supported to do so.

Take just one aspect of the diabetes problem, early diagnosis, which is crucial to successful care. To help nations lacking appropriate resources, we will need biomedical engineers to design new diagnostic devices; business thinkers to create new models for low-cost device production and distribution; social and political strategists to help nations foster widespread acceptance in communities; and health educators and communicators to help local partners achieve successful adoption.

That’s an enormous and complex undertaking—and exactly the type of mission the Johns Hopkins Global Health Institute is prepared to take on, for a host of problems.

We will bring together the full range of Hopkins experts from across the university; public health partners from around the world (many of whom we trained); large groups of brilliant and enthusiastic students working on campus and on site; and leaders of foundations and corporations who share our goals. Together we will define the specific resource deficits we face in each setting and the unique yet intertwined contributions our united disciplines can make, from medicine to business, from engineering to public policy.

We will create technological and social innovations and work with partners to test, refine, and implement them at scale. Together we will solve major health problems even where appropriate resources do not exist—anywhere in the world.

THE JOHNS HOPKINS GLOBAL HEALTH INSTITUTE

David Serwadda: Preventing HIV in Uganda

One of the first researchers to identify AIDS in Uganda was David Serwadda, SPH ’91, a Ugandan academic, scientist, and researcher. The Ugandan principal investigator for the NIH-funded “Trial of Male Circumcision for HIV Prevention,” Serwadda has demonstrated the efficacy of circumcision in lowering male HIV acquisition by 60 percent. He has also been instrumental in the project’s scientific design and management and provided critical liaison with the local community, the Ugandan Ministry of Health, and international agencies, including UNAIDS, the WHO, and the World Bank. Serwadda maintains close ties with Johns Hopkins, sharing grants and helping build a better future for Ugandans.

Eliminating Blinding Trachoma

Affecting some 84 million people each year, trachoma is the world’s leading infectious cause of blindness. Spread via flies, clothing, bedding, and other means, trachoma causes scarring of the upper eyelid that turns eyelashes inward to rub against and blind the cornea. In collaboration with the World Health Organization (WHO) and foundation, corporate, and academic partners, Sheila West, PhD, SPH ’90, El-Maghraby Professor of Preventive Ophthalmology at the Wilmer Eye Institute, is running clinical trials in Tanzania, Ethiopia, and Niger to improve known effective trachoma treatments, focusing on surgery and antibiotics. Her goal, and the WHO’s, is to eliminate blinding trachoma by 2020.
BUILDING THE SOLUTIONS PIPELINE

Based on our long experience in researching, developing, and implementing global health solutions, we will establish through the Global Health Institute a pipeline that produces new ideas, strategies, technologies, and policies to solve major health problems, and engages at every level not only our established faculty experts but also students, from undergraduates to medical residents. The pipeline will comprise:

THE SOLUTIONS TEAM: A group of leading faculty members and students who, drawing on the latest research and their contacts around the world, evaluate global health problems, target those we are best positioned to solve, and identify resource deficits to be overcome.

SEED GRANT PROGRAM: An annual process in which the Solutions Team solicits and reviews competitive proposals for solving the identified problems. The Solutions Team then awards seed grants to enable Project Teams to produce findings sufficient to procure next-phase funding from government, foundation, and corporate sources.

PROJECT TEAMS: Groups of faculty members and students from at least two Johns Hopkins schools or divisions who develop proposals and execute work funded by seed grants. Project Teams go on site to field-test concepts at small scale, collect data, and define sustainable scale-up options.

IMPLEMENTATION TEAMS: Groups of faculty and students from at least two Johns Hopkins schools or divisions who, in concert with local partners, go on site to scale up project team solutions, collect data to evaluate and report results, and plan next steps.

Of the Global Health Institute’s $100 million funding goal, $60 million will be devoted to supporting the solutions pipeline.

PRODUCING TOMORROW’S GLOBAL HEALTH EXPERTS

The Global Health Institute will involve Johns Hopkins students at every stage along the solutions pipeline, greatly enriching their educational experience. Undergraduates will contribute through immersion and exchange programs, overseas research projects conducted with local partners, and studies mentored by Hopkins faculty. Travel grants for graduate students will support direct learning about research conduct and the nuances of global health research and practice in resource-poor settings. Medical students will have several options: completion of their first-year summer scholarly project requirement in a developing country; rotations in overseas sites such as Guatemala, India, and Uganda; and new opportunities for clinical experience in low-resource settings. Public health students will both learn about and support global health projects through placements in community research activities, public health advocacy programs, government health departments, public health and clinical laboratories, policy agencies, and international health organizations. This extensive set of educational opportunities will create a pathway to leadership for tomorrow’s global health experts.

Our students’ pivotal contribution will be their involvement in multidisciplinary projects and implementation teams that work together to solve global health problems. Alongside faculty members and on-site international colleagues, our trainees will contribute their energies, ideas, and motivation to our problem-solving efforts. Their infusion of fresh insight will catalyze innovation.

Of the Global Health Institute’s $100 million funding goal, $20 million will be devoted to educational enrichment for our students.

JOIN US IN THE SECOND GLOBAL HEALTH REVOLUTION

The Johns Hopkins Global Health Institute will solve some of the most complex and challenging problems the world faces. It calls for the establishment of an intensive multidisciplinary solutions pipeline unlike any seen before and the engagement of every level of Hopkins student to produce future leaders. For the pipeline to produce new solutions, and for our students to play a part that will shape them forever, we need your support. We invite you to join us as a vital partner in achieving the life-changing possibilities we envision. Help us create the second revolution in global health and bring a better life to people around the world.

Perinatal Screening at $.005/Test

To help address 5.6 million preventable perinatal deaths, a team of Center for Bioengineering Innovation and Design students working with Jhpiego, a nonprofit affiliated with Johns Hopkins, developed a kit that allows community health workers in rural areas to deliver crucial screening tests at a cost of about a half a cent per test.

The kit uses pens that contain reagents which are applied to a piece of filter paper. Urine from the woman being tested is then applied to the paper to detect early signs of eclampsia, malnutrition, gestational diabetes, and urinary tract infections. Further development and refinement to bring the kit to market is ongoing.
To take on the enormous challenges of improving health throughout the world, the Johns Hopkins Global Health Institute seeks the support of generous people who share our dedication. There are a number of ways to play a part.

**LEARN AND SHARE**
Visit [rising.jhu.edu](http://rising.jhu.edu) to learn more about the institute, hear directly from faculty and students engaged in research around the world, and engage with others who are passionate about global health. Share your thoughts with us and help spread the word through your professional and personal networks.

**MAKE A GIFT**
The Johns Hopkins Global Health Institute can succeed only through philanthropy, as funds to attract luminary professors and students and support their programs cannot be obtained through the standard research funding channels. Please contact our development officers, who stand ready to guide you in exploring gift opportunities and planning and structuring gifts in ways that answer your goals and ours.

**Mobilizing Across the University**
Collaboration across disciplines defines the very nature of the Global Health Institute, whose institutional home is the Johns Hopkins Center for Global Health, itself a cross-disciplinary enterprise. Participants in the institute are:
- Applied Physics Laboratory
- Berman Institute of Bioethics
- Bloomberg School of Public Health
- Carey Business School
- Johns Hopkins Medicine
- Krieger School of Arts and Sciences
- Nitze School of Advanced International Studies
- School of Education
- School of Nursing
- Whiting School of Engineering

**CONTACT US TODAY**
To pursue any of these options, please contact:
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**Reducing HIV Transmission from Mother to Child**
A decade ago, transmission of HIV from mothers to infants occurred about 700,000 times a year worldwide, usually through the birthing process or breastfeeding. In the U.S., use of multiple antiretroviral drugs (including AZT) during pregnancy reduced transmission to fewer than 50 cases per year—but at a cost too high for developing nations. Johns Hopkins researchers showed through clinical trials in Uganda that the antiretroviral drug nevirapine was 47 percent more effective than AZT, reduced infant infection from 25 to 13 percent, and cost only a few dollars. The now-standard regimen has prevented more than 300,000 HIV infections in newborns worldwide.

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**Global Health Institute**
**Major Philanthropic Priorities**

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<tr>
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