The Ripple Effect

The stories in this issue of Harvard Public Health demonstrate the extraordinary ripple effect that our School’s graduates are having on populations worldwide.

As you will read in these pages, the husband-and-wife team of Bill and Lori Housworth has transformed pediatric care in the most impoverished parts of Cambodia. Madeline deLone, executive director of the Innocence Project, has led efforts to use DNA evidence to exonerate innocent men and women found guilty and imprisoned in the United States—the country with the highest per capita prisoner rate in the world. In a neighborhood health clinic in Oakland, California, Kimberly Chang has made it her mission to rescue young victims of sex trafficking. And Jeremiah Zhe Liu is forging novel biostatistical methods to pinpoint the sources of air pollution in his native China, in hopes of reversing this public health crisis before time runs out.

Personally, I am honored to be one of only three deans who have graduated from the Harvard Chan School. My decision to travel to Boston from Sydney, Australia, three decades ago—as a master’s degree student—is one of the best decisions I have ever made. I enrolled here because I believed this was the greatest school of public health in the world. I have stayed because, over the years, it has only grown greater. Indeed, we are the most cited faculty in the academic literature.

My decision to travel to Boston from Sydney, Australia, three decades ago—as a master’s degree student—is one of the best decisions I have ever made.
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Challenges certainly remain: increased competition for gifted faculty, researchers, and students; a pressing need to renovate our existing facilities and construct new ones; more funding for research, so that faculty members aren’t trapped on a grant-writing treadmill; and financial aid to students, so that the best and brightest are not impeded in their determined efforts to change the world for the better.

Yet even against this backdrop, the Harvard T.H. Chan School of Public Health is riding an impressive momentum powered by generous donations from our broad community—individuals, institutions, foundations, faculty, staff, and alumni. In this issue, our annual gift report recognizes their dedication to improving health around the world. As acting dean, it is my great privilege to help ensure that the School’s collective knowledge and passion ripples out to the places in the world that need it most.

David Hunter, MPH ’85, SD ’88
Acting Dean of the Faculty
Dean for Academic Affairs
Vincent L. Gregory Professor in Cancer Prevention
Harvard T.H. Chan School of Public Health
A disheartening encounter with a young patient in a California health clinic convinced physician Kimberly Chang, MPH ’15, that medical professionals play a key role in protecting victims of coerced sex.
PARENTS’ CHEMICAL EXPOSURES MAY AFFECT THEIR CHILDREN

Parents’ exposure to chemicals found in common household items such as paints and plastic bottles may affect the health of their young children, according to two recent studies co-authored by Philippe Grandjean, adjunct professor of environmental health. In the first, Grandjean shows that a widely used class of industrial chemicals linked to cancer and interference with immune function—perfluorinated alkylate substances—appears to build up in infants by 20 to 30 percent for each month they are breast-fed. While he stresses that there is no reason to discourage breastfeeding, Grandjean calls for the U.S. government to require the testing of chemical substances to include possible transfer from the mother’s accumulated chemical exposure to her child.

A separate study finds that a couple’s exposure to endocrine-disrupting chemicals such as phthalates and bisphenol A (BPA) prior to conceiving may alter their child’s genetic structure and development, leading to increased risk of health issues such as cancer later in life.

An Enigma in Asthmatic Cells

Until now, scientists thought that epithelial cells, which are found in most organs, just sat motionless like cars jammed in traffic. But a new study shows that in the lungs of people with asthma, these cells “scramble around like there’s a fire drill going on,” says Jeffrey Fredberg, professor of bioengineering and physiology at Harvard T.H. Chan School of Public Health. Although why these asthmatic cells move so vigorously is still unknown, the new finding may be a step toward developing new treatment options for asthma. The discovery may also have implications for other processes in the body in which epithelial cells play a prominent role, such as wound healing and cancer.

Racism in the Doctor’s Office

Clinicians are not immune to the negative beliefs about race that are deeply ingrained in U.S. culture, says David R. Williams, Florence Sprague Norman and Laura Smart Norman Professor of Public Health, in a viewpoint article published August 11, 2015, in the Journal of the American Medical Association. Williams noted that even unconscious attitudes can lead to “biased treatment recommendations for black and other minority patients, as well as poorer quality patient-doctor communication.” However, eliminating racial and ethnic disparities in health isn’t just the job of the health care sector, Williams argues—it’s the job of society as a whole.
One or Two Drinks Per Day Linked To Increased Cancer Risk

While light to moderate drinking is associated with minimally increased risk of overall cancer, women’s risk of developing alcohol-related cancers, particularly breast cancer, may be elevated, according to a recent study by researchers from the Harvard Chan School and Brigham and Women’s Hospital. Male smokers who are light to moderate drinkers also have higher risk of alcohol-related cancers, which include colorectal, oral, liver, pharynx, larynx, and esophageal cancers, the report concludes. Previous studies have shown health benefits of moderate drinking, including reducing heart disease and type 2 diabetes risk. “Our study reinforces the dietary guidelines that it is important not to go beyond one drink per day for women and two drinks per day for men,” says lead author Yin Cao, research fellow in the Department of Nutrition.

Antidepressants and Bone Fractures in Women

The antidepressants known as selective serotonin reuptake inhibitors (SSRIs) have frequently been used off-label to treat hot flashes, night sweats, and other symptoms of the menopausal transition. More recently, a low-dose formulation of an SSRI was approved for this indication. But research has uncovered a potential risk with these drugs. Analyzing data from more than 137,000 women, researchers at Harvard T.H. Chan School of Public Health, Northeastern University, and the University of North Carolina found that women were 76 percent more likely to suffer a fracture one year after starting treatment, and the risk remained high over time. “These findings suggest that shorter duration of treatment might mitigate the risk of developing excess fractures,” said first author Yi-han Sheu, a doctoral student in the Harvard Chan Department of Epidemiology.

CLEAN POWER PLAN PROMISES HEALTH BENEFITS

President Barack Obama’s proposed Clean Power Plan—which calls for reducing carbon emissions from power plants by nearly one-third of the 2005 level by 2030—promises health benefits such as fewer asthma attacks and heart attacks if implemented. Jonathan Buonocore, a research associate in the Center for Health and the Global Environment and co-author of a study in the May 2015 issue of Nature Climate Change, agrees. Buonocore notes that the proposed standards could boost health by slowing climate change, and thereby reduce the number of extreme storms and heat waves, which can lead to water and food shortages and deaths. Boosting air quality and reducing ozone levels could lead to fewer premature deaths, heart attacks, asthma, and stroke, says Buonocore.
Consumers Drowning in Sea of Health Information

While health information is more widely available than ever, most consumers have difficulty accessing and using it to make appropriate decisions and take needed action, researchers Howard Koh and Rima Rudd write in a *Journal of the American Medical Association* editorial published online August 6, 2015. Barriers to clear health communication include complex math concepts and the use of scientific terms and jargon, as well as complicated intake forms, discharge instructions, and insurance applications. All of these can lead to misunderstandings, difficulties navigating the medical care system, and poor health outcomes. Koh, the Harvey V. Fineberg Professor of the Practice of Public Health Leadership, and Rudd, senior lecturer on health literacy, education, and policy, call on health care providers to be proactive in making their information easy to understand, supporting dialogue with patients, and involving patients in key decisions. The authors describe an “arc of health literacy” over the past two decades that “bends toward population health,” offering the hope that someday all people can fully realize their health potential.

Outstanding in their Fields

Twenty-two Harvard Chan faculty members are included on Thomson Reuters’ 2015 list of the most highly cited researchers in science and social sciences. Faculty cited in multiple fields include Frank Hu, David Hunter, Rafael Irizarry, Peter Kraft, JoAnn Manson, and Walter Willett. Harvard Chan faculty cited in social sciences include Francesca Dominici, Miguel Hernán, Ashish Jha, Ichiro Kawachi, Nancy Krieger, James Robins, Joel Schwartz, SV Subramanian, Tyler VanderWeele, David Williams, and Antonella Zanobetti. Those cited in clinical medicine include Nancy Cook, Majid Ezzati, and Meir Stampfer. Joseph Sodroski and Bruce Walker were cited in microbiology. Approximately 3,000 researchers worldwide were dubbed highly cited, meaning they ranked in the top 1 percent of citations for their subject field and year of publication.
Q: How has your MPH degree influenced your daily work as a doctor? And did studying the large social, political, and economic forces behind individual health make you more or less optimistic in your role as a clinician?

A: When I was at the School, my practicum was to assess the teen pregnancy issues at Cambridge Rindge and Latin High School’s health center. They wanted to expand their reproductive health services and to distribute a variety of contraceptives—which was very controversial from a school perspective, a city perspective, and a parent perspective. The practicum was to advocate for the health center. Using the tools we learned at the School, I and two other physicians made the argument that expanded reproductive health services would be beneficial in terms of the students’ physical health, mental health, and economic potential. The expanded services became policy.

Later, I worked in an urban inner-city practice at Boston Children’s Hospital. I had learned at the School how poverty shapes children’s health—not only the risk of malnutrition, but in not having safe places for children to exercise, obesity rates, and violence in the home. Today, I try to spend more time with my patients discussing issues besides their medical needs: how their environment affects them, how they’re doing in school. I understand more about what other factors are in my patients’ and their families’ lives. Sometimes when physicians are concerned that a patient is “noncompliant,” they may not understand all the forces that are impacting that family.

My MPH track also involved health communication. That’s something all physicians want to do better. I learned how to craft public service announcements and have utilized that in my practice to try to explain—one patient at a time—medical issues such as asthma, necessary immunizations, and violence risk. I learned how to speak to patients in a way they could understand.

The School gave me tools such as epidemiology and biostatistics. I learned how to critically review the literature. I appreciated the courses in health policy and disaster management.

As a physician, I am always hopeful. The MPH has made me more hopeful.
A former postdoctoral fellow with the Harvard T.H. Chan School of Public Health AIDS Initiative, virologist Iain MacLeod in 2014 cofounded Aldatu Biosciences, which provides sensitive and cost-effective diagnostics to detect drug resistance in antiretroviral treatments for HIV. The first drug-resistance test designed specifically for use in Africa, it can be stored at room temperature and provides results in two hours—compared with current methods that require refrigeration and take two to three days. In 2014, Aldatu Biosciences won the Harvard University’s Deans’ Health and Life Sciences Challenge and was later awarded $1.5 million by the National Institutes of Health to develop its diagnostic method. MacLeod spoke recently with Harvard Public Health editor Madeline Drexler.

Q: What can your product do that current tests for HIV drug resistance cannot?
A: Think of the HIV genome as a lock for which you’re given two keys. One of the keys works when there is drug resistance, and the other key works when there is no drug resistance. The problem is that with HIV, the lock is always changing. What our test does is essentially pick the lock and give you a master key that can rapidly determine whether the virus is drug-resistant.

Q: How exactly does it work?
A: We strip out all of the secondary, non-resistance mutations in HIV—we actually change the HIV genome to match the test. Then we can sensitively detect the single nucleotide changes associated with resistance.

Our test is based on a technology known as PANDAA, for Pan-Degenerate Amplification and Adaptation. It’s a new way of doing a very old and very common molecular biology technique known as real-time polymerase chain reaction, or qPCR, which is the mainstay of modern genomics. Researchers use qPCR to amplify genetic sequences in a sample so that they can tell whether a particular pathogen is present. One of qPCR’s benefits is that it’s highly sensitive—it can detect a single nucleotide or base pair change within the gene of a pathogen or a human cancer. But that sensitivity falls flat when there are other mutations around, such as in a highly mutable virus like HIV.

Q: You turned a familiar technology inside out.
A: Yes. Even now, half of the scientific community doesn’t believe that our test works.

Q: Why are they skeptical?
A: Because we intentionally violated every single design principle for qPCR. Everything we’re doing goes against more than a quarter century of rules that don’t take into account subsequent scientific developments. PANDAA takes all these advances and bundles them together.

The problem today is that researchers have been too busy looking for big data and big genomic answers. Traditional HIV drug-resistance testing uses standard DNA and RNA sequencing. You get information for huge regions of the genome, but only about 1 percent of that information is clinically informative.

We call PANDAA “focused genotyping.” It’s designed to get resistance information for six different discrete positions on the HIV genome—the six mutations that confer drug resistance in patients starting World Health Organization
With ambitious new HIV treatment guidelines issued by the World Health Organization, “You’re putting people on drugs because politically it sounds great,” says Iain MacLeod. “But at the end of the day, you’re not doing anyone any good if the drugs aren’t working.”

Q: As you roll out this test, who are your target populations and what are your main scientific questions?
A: Aldatu’s initial target will be first-line failures of the entire adult population in Botswana receiving antiretroviral therapy. With a health economist at Harvard Chan, we will gather real-world metrics on the impact of resistance testing on the health care system.

And with Christopher Rowley, a research associate at Harvard Chan, we’re going to do pretreatment resistance testing for pregnant women in Botswana, because they were actually the population that inspired PANDAA’s development. When a Botswana Harvard AIDS Institute study started in 2010, about 4 percent of women who were coming into antenatal clinics had resistance. It’s now up to 10 percent. We’re talking about one in 10 women who have been put on drugs to prevent mother-to-child transmission—and the drugs are probably not going to work. We hope to follow the pregnant women who are tested and, if they have resistance, are switched to the correct antiretroviral drugs, to see whether they are less likely to transmit HIV to their infants.

Q: This past fall, the WHO issued guidelines to immediately start drug treatment for anyone diagnosed with HIV—potentially, nearly 40 million people globally. How will this affect drug resistance?
A: I think the new guidelines are the best approach for stemming the spread of the epidemic, but I also think it’s foolhardy not to put in place the correct diagnostics for drug resistance. There is no single mention of the word “resistance” in their plan to get everyone on treatment and virologically suppressed. You’re putting people on drugs because politically it sounds great. But at the end of the day, you’re not doing anyone any good if the drugs aren’t working. Year on year, both transmitted and acquired resistance to HIV antiretrovirals is increasing worldwide.

Q: You and cofounder David Raiser named your company Aldatu, which is a Basque word. What does it mean?
A: Dave and I didn’t want to go with a science-sounding name, because everyone does that. So we looked at words that meant “adapt,” because what PANDAA does is adapt qPCR for HIV drug-resistance testing. “Aldatu” not only means “change” but also, in a more poetic translation, “to become something different.” Creating a startup company was never in my five-year plan. I was going to be an academic scientist, and Dave was going to be a management consultant. The word “Aldatu” refers to the novel technology, what it does to the HIV genome when we’re running the test—and how this whole experience has changed us.
Hilarie Cranmer, MPH ’04

Hilarie Cranmer is an emergency physician, researcher, and educator working to advance practice standards for humanitarian responders. She has participated in the response to major humanitarian disasters, serving in the field during the 2004 tsunami in Indonesia, the 2010 earthquake in Haiti, and hurricanes Katrina and Rita in the U.S. and providing technical expertise for international medical corps during the 2014 Ebola outbreak in West Africa. As director of education and humanitarian studies at the Harvard Humanitarian Initiative, Cranmer designed an innovative training program that culminates in a simulated-disaster field experience. She also founded the Global Women’s Health Fellowship at Brigham and Women’s Hospital, is the first director of global disaster response at Massachusetts General Hospital (MGH)’s Center for Global Health, and serves as vice chair of the World Association of Disaster and Emergency Medicine. Cranmer is an assistant professor at Harvard T.H. Chan School of Public Health and Harvard Medical School and a clinical faculty member in the Department of Emergency Medicine at MGH.

Jonathan Javitt, MPH ’84

Physician and entrepreneur Jonathan Javitt has spent his career pushing the frontiers of big data to advance patient care and health outcomes. While still a resident, he helped build the first PC-based electronic medical records system. After serving as a faculty member at Johns Hopkins University, he worked for the federal government on some of the first data analysis projects using insurance claims. In 1993, he was appointed by President Bill Clinton to lead an initiative to incorporate data analytics and electronic medical records in health reform. In subsequent years, Javitt founded several health technology startups that went on to be acquired. During the George W. Bush administration, he put big data solutions to work in biodefense and drug surveillance. He founded Telcare, a company that pioneered the use of cellular devices for the monitoring and care of chronic illness. Most recently, he founded NeuroRx, a startup pharma/med-tech company that aims to introduce the first effective treatment for suicidal crisis in bipolar depression.
Royce Moser, Jr., AB '57, MD '61, MPH '65
During a career spanning nearly five decades, Royce Moser served as a combat flight surgeon and helped train numerous graduate students in aerospace medicine and occupational health. Moser began his career as a physician in 1961. He served 23 years in the U.S. Air Force, with his final position as commander, USAF School of Aerospace Medicine. He then embarked on a second career in academia at the University of Utah School of Medicine. A full professor, Moser was director of the Rocky Mountain Center for Occupational and Environmental Health. He is author of a health management text, lead author of a state medical-disaster response plan, and a contributor to aircraft accident studies that will help prevent future accidents. He served as vice president for medical affairs at the American College of Occupational Medicine and was president of the Aerospace Medical Association. An enthusiastic member of the School’s alumni community, Moser served in various leadership positions from 2003 to 2013, including as president of the Alumni Association.

Three other awards recognize achievements in public health practice, innovation, and professional service at various career stages.

LEADERSHIP IN PUBLIC HEALTH PRACTICE
Mosoka Fallah, MPH ’12
From humble beginnings in Monrovia, Liberia, Mosoka Fallah went on to pursue humanitarian work and then graduate studies in the U.S. Months before the 2014–2015 Ebola epidemic in Liberia and two neighboring countries, Fallah returned to Monrovia to develop a public health certificate program for midlevel health workers aimed at reducing maternal and child mortality. Fallah also used the opportunity to construct a clinic catering to women and children in Monrovia’s slums. When Ebola struck, Fallah enlisted community leaders to work with him to contain its spread by tracing contacts of infected people and fostering trust. Fallah is currently a consultant with a USAID-funded project working with Liberia’s Ministry of Health and Social Welfare to develop a training program for community health officers. He also is a visiting scientist in the Department of Global Health and Population at the School and a member of the Harvard Global Health Institute and London School of Hygiene and Tropical Medicine Independent Panel on the Global Response to Ebola.

PUBLIC HEALTH INNOVATOR
Kyra Bobinet, MPH ’08
As a physician, social entrepreneur, and public health advocate, Kyra Bobinet sees the gap between what people say they want and what they actually do as the greatest barrier to improving public health in the 21st century. In 2014, she started engagedIN, a firm that uses neuroscience research to help the wellness and health care industries promote behavior change and health engagement. Previously, she had served in several roles at Aetna, where she developed technology products to help seniors live independently at home, and led clinical efficacy studies in mind-body stress reduction and metabolic syndrome. Bobinet has held leadership roles in health care and founded and directed a nonprofit organization for at-risk, detained youth. She teaches at Stanford School of Medicine and is the author of *Well Designed Life: 10 Lessons in Brain Science & Design Thinking for a Mindful, Healthy, & Purposeful Life*.

EMERGING PUBLIC HEALTH PROFESSIONAL
Pride Chigwedere, SD ’08
As a physician in Zimbabwe, Pride Chigwedere watched his AIDS patients die for lack of antiretroviral (ARV) drugs. At the School, Chigwedere wrote a thesis linking South African President Thabo Mbeki’s delay in launching an ARV program in that country to more than 330,000 deaths and at least 35,000 babies born with HIV infections that could have been prevented. The paper received international attention when published, and Chigwedere was hired by UNAIDS to review progress toward reaching ARV targets in 21 African countries. This work became the basis for policies at the African Union Ministers of Health Meeting and the Africa Common Position to the UN General Assembly High-Level Meeting on AIDS. He went on to become a senior adviser to the African Union. Chigwedere has also worked with McKinsey & Company as a consultant to pharmaceutical companies and global health institutions, primarily in the areas of business strategy and medical affairs.
A Case of Human Trafficking

A disheartening encounter with a young patient convinced physician Kimberly Chang, MPH ’15, that medical professionals can play a key role in protecting victims of coerced sex and labor.
Above: A mural in the neighborhood of Asian Health Services, in Oakland, California.

© Leah Fasten
Kimberly Chang was fresh out of medical residency in 2003 when a 14-year-old girl stumbled into her exam room at Asian Health Services in Oakland, California. Reeking of marijuana, with bloodshot eyes and bruises all over her body, the girl asked to be checked for sexually transmitted diseases (STDs).

Chang, MPH ’15, diagnosed several STDs in the teen—and, with a sinking realization, also determined that her patient was being forced into sex, addicted to drugs, and getting beaten up regularly. Over the next few years, Chang would see the scenario repeated again and again among her mostly poor, immigrant patients.

“Back then, I referred to them as ‘child prostitutes.’ That was so bad of me,” Chang says, cringing at the implicit blame in that term. “But we didn’t have the right language, and I didn’t have the awareness.” Over time, as her own understanding grew and as the effects of the Trafficking Victims Protection Act of 2000—the first comprehensive federal law to address human trafficking—filtered down to the clinic, Chang redefined these patients as victims, forced by poverty or isolation into a life of servitude, often trading sex for money or drugs.

Yet she continued to view her job as primarily treating their medical problems—until the day a young teen girl arrived at the clinic, acutely ill. She had a high fever, a racing heart rate, and a rash all over her body. She’d lost 30 pounds in three months. But she refused to go to the hospital because she feared she’d be arrested on a previous warrant for prostitution.

Chang spent the entire evening negotiating with her. The girl was willing to drive only with her “purchaser”—a man who bought unprotected sex from her three times a week. For two hours, Chang tried to persuade the man to drop the girl off at the emergency room. They never made it, and it took another day before Chang and her colleagues tracked down the girl through her MySpace page and community contacts. This time, Chang personally arranged for someone to drive her to the hospital, where she spent two months recovering.

Chang is propelled by the belief that human trafficking should not be a law enforcement but rather a public health issue. “How could I make the health care system stronger, so that it could go toe to toe with the criminal justice system?” she says.

“But guess what happened when she got out?” Chang asks, still incredulous. “She was sent to jail.” Although the teenager was essentially an abused child, the police and courts considered her a criminal.

That 2008 crisis became the catalyst for all that followed in Chang’s career. She evolved from physician to physician-activist to—bolstered by her new master’s degree from the Harvard T.H. Chan School of Public Health—policy advocate. Today, she is propelled by a strong belief that human trafficking should not be a law enforcement but rather a public health issue.

TEACHING PATIENTS THEIR RIGHTS
Chang grew up in Honolulu, Hawaii, in an ethnically Chinese family. Only recently did she learn that her great-grandmother, born in Vietnam, was kidnapped by pirates and sold into slavery in Hong Kong before escaping and starting a family in Hawaii as a plantation worker. “Given the work that I’m doing now,” Chang observes, “I thought that was an interesting connection.”
As a young child, Chang would watch her mother, a speech pathologist, work with children with cerebral palsy. “That care and compassion made a big impact,” she says. At age 12, she set out to be a doctor, calculating to the exact year when she would begin her training as a physician and proceeding straight through college, medical school, and residency before landing at Asian Health Services as a family doctor.

Many of her teen patients came in high on drugs and physically battered. She learned to speak with them bluntly yet sympathetically, to identify who was being forced into sex, and to care for them without judgment. She also made a point of teaching them their rights. In the case of adult patients working as domestic help, for example, she’d explain: “It’s not OK for your employer to hold your passport and stop you from leaving the country.”

Chang was soon promoted to director of a satellite clinic of Asian Health Services. The site served 10 Asian refugee communities but had to turn down many more for lack of language abilities and staff. “It bothered me when I thought about who gets access and who doesn’t. Where is health equity in this?” she says. “I felt I needed to acquire the policy tools to be able to elevate the issues of immigrant and refugee health and of trafficking in the health care, community health, and public health arenas.”

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That quest brought her to Harvard Chan through the Commonwealth Fund Mongan Fellowship in Minority Health Policy. There, Chang met people who, like her, were working for populations shut out of mainstream culture and medicine. Her driving goal: to turn human trafficking into a frontline health issue. “How could I make the health care system stronger, so that it could go toe-to-toe with the criminal justice system?” she recalls. “Harvard Chan has given me a platform to make practical changes and reach more patients—not just through my health center but through every health center that wants to take on this issue.”

Commonwealth Fellowship program director Joan Y. Reede, MPH ’90, SM ’92, notes that Chang stood out for her compassion, her creativity—and her impatience at the slow pace of change. “Kim is an extraordinary individual who does not recognize how extraordinary she is,” Reede says. “She hadn’t realized her full potential when she arrived, and over the course of the year she had an awakening that you can make a difference—not by aiming low, but by aiming high.”

At Commencement, Chang received the School’s Dr. Fang-Ching Sun Memorial Award for her commitment to vulnerable populations. According to Reede, “It comes out of a deep awareness of the responsibility that accompanies the title of physician—to take care of everyone—and an understanding that the system has that responsibility as well.”

**LOOKING UPSTREAM**

With MPH in hand, Chang is back at her clinic in Oakland, where she continues to see patients part time. In collaboration with the Association of Asian Pacific Community Health Organizations, she’s also putting into action a policy brief she wrote while at Harvard Chan for the Health Resources and Services Administration, part of the U.S. Department of Health and Human Services (HHS). In line with that effort, she hopes to collaborate with HHS to create pilot models at federally qualified health centers for step-by-step protocols for trafficking victims, from outreach to long-term chronic care, providing the medical roadmap she wishes she’d had when starting out as a community doctor.

As befits a newly minted public health professional, Chang is also looking upstream at original causes. She believes the first step to stop trafficking at its source is to treat it as a disease. “I see this as community surveillance,” she says. “We talked to the Cambodian elders about this problem, and they started looking out and noticing that, oh, their daughters aren’t just going out and having fun. They’re coming home with bruises.”

Although Chang’s patients were typically trafficked by men outside the family—pimps and boyfriends, for example—it’s not uncommon for people to traffic their own family members for economic reasons. Targeting the poverty that leads these families to such desperate measures is critical, Chang says. So is persuading them...
to reassess what may have become commonplace—in the exam room, in schools, at community gatherings. “We need to change the social norm,” she says, “and redefine what communities consider acceptable.”

In the complex world of trafficking, a victim today may become a recruiter tomorrow. Chang contends that helping young people avoid the trade, or get out early, can slow the problem downstream. “By reducing the number of victims,” she says, “you can reduce the number of traffickers.”

On a more systemic level, Chang urges public health leaders to join initiatives against human trafficking. “At the moment, most of these are run by criminal justice,” she says. “There’s a scarcity of health care and public health in there.”

**LIFE AFTER TRAFFICKING**

Looking back at her most disturbing cases, Chang has seen that the right treatment and policies can change lives. The first 14-year-old girl who came in high and bruised? Chang treated her STDs, encouraged her to leave the sex trade, and wrote her a letter of support to get into a health assistant training program. Now in her twenties and in a stable relationship, the young woman has a new outlook on life. “Her main challenge today,” notes Chang, “is college algebra.”

But not all stories from the clinic have happy endings. Chang lost touch with the 15-year-old patient who went to jail for prostitution. She heard the girl became pregnant and was still engaged in sex work. Yet such setbacks don’t discourage Chang.

“I have the privilege of being asked the question, ‘How do you not get demoralized?’ My patients don’t have that privilege,” she explains. “I don’t get demoralized because I have the power to change things. If I don’t use that power, who will?”

Karen Brown is a public radio reporter and freelance writer based in Western Massachusetts who specializes in health and mental health issues.

To watch a video or hear a podcast of Kimberly Chang and other Harvard Chan students, go to http://hsph.me/students-videos and http://hsph.me/students-podcasts.
A CALLING IN CAMBODIA

BILL AND LORI HOUSWORTH UPROOTED THEIR YOUNG FAMILY FROM LOUISVILLE, KENTUCKY, AND MOVED TO SIEM REAP, CAMBODIA, TO CULTIVATE TOP-QUALITY MEDICAL CARE IN ONE OF ASIA’S MOST IMPOVERISHED AREAS.

By sunrise at Cambodia’s Angkor Hospital for Children (AHC), the crowd of people waiting for care had packed the waiting room and spilled out into a grassy courtyard. Many had arrived the previous night, after traveling hundreds of miles by car, motor scooter, and even oxcart to reach this hospital in the bustling city of Siem Reap, a few miles from the 12th-century Angkor Wat temple complex. Mosquito nets, borrowed from the hospital, hung over benches that people had pushed together for makeshift beds. As the morning light grew stronger, some families migrated to the hospital’s kitchen, where they cooked rice, vegetables, and a bit of fish (all donated by the hospital) into a breakfast porridge.

At 6:30 a.m., the nurses started making their way through the crowds, triaging patients. Within half an hour, it was 90 degrees Fahrenheit, and the noise had become so clamorous that one of the nurses needed a bullhorn to call out the names of those who were next in line to be seen by a doctor. The hospital’s executive director, Bill Housworth, MPH ’06, began making rounds. Tall, with short-cropped gray hair and prominent features, and walking briskly in his favored cowboy boots, Housworth paid a visit to each of the hospital’s departments.

continued
He started with the neonatal intensive-care unit, which was always full with half a dozen babies on ventilators and full life support, a level of care available nowhere else in Cambodia. Next, Housworth would check on the inpatient ward, asking the doctors and nurses there how their patients had fared overnight. Each of that department’s 40 beds was filled with a child sweating through bouts of pneumonia, receiving intravenous fluids for waterborne diarrheal illnesses, or recovering from surgery to remove cancerous tumors or repair congenital heart defects.

Known here as Dr. Bill, Housworth had moved to Cambodia from Louisville, Kentucky, with his wife, physician Lori Housworth, MPH ’06, and three small kids (a fourth would be born in Cambodia). While Lori, whose round face often manages to look both cheerful and steely-eyed, held no official title at AHC, her presence was felt everywhere—from mentoring the hospital’s young doctors and nurses to consulting on complex cases.

Bill led Angkor Hospital for Children from 2008 until earlier this year, when he handed the job over to Cambodian leadership and the family moved on to another hospital posting in a more impoverished area of northeastern Cambodia.

In both locales, the couple’s immediate priority has been to provide high-quality medical care to a nation in which nearly a third of the population lives on less than $2 a day, about 40 percent of children are malnourished, and the infant-mortality rate is more than five times higher than it is in the United States. And they say their time at Harvard T.H. Chan School of Public Health prepared them for a larger mission: to empower Cambodians to achieve the same high level of pediatric medicine nationwide.
BUILDING A PREMIER PEDIATRIC HOSPITAL

When the Japanese photographer Kenro Izu came to Cambodia to photograph Angkor Wat temples in the mid-1990s, he was so moved by the many children he met who were stunted by malnutrition, disfigured by birth defects, and mutilated by land mines that he committed himself to building a pediatric hospital for Cambodia. He started a nongovernmental organization (NGO) called Friends Without a Border, which raised money for a dedicated medical facility.

AHC opened its doors in 1999 as a small outpatient facility. It has grown into Cambodia’s premier pediatric hospital, with units dedicated to emergency care, inpatient treatment, neonatal intensive care, physical therapy, and surgery, among others. It is also Cambodia’s only pediatric teaching hospital, training the country’s next generation of doctors and nurses.

The most common ailments here—tuberculosis, malnutrition, cholera, and insect-borne tropical diseases such as malaria and dengue fever—are often linked with poverty and a lack of basic amenities, such as clean water. Yet many children come here with complicated needs: heart surgery, long-term cancer care, or antiretroviral treatment for HIV/AIDS. Every day, about 450 new patients, ranging in age from newborns to teenagers, arrive at AHC, where the care is free for those who cannot pay.

“To be able to serve and to see the world through the eyes of people who have been through more than we can imagine, who have suffered more than we can imagine—for us, it’s been a huge blessing.” – Bill Housworth, MPH ’06

continued
“To be able to serve and to see the world through the eyes of people who have been through more than we can imagine, who have suffered more than we can imagine—for us, it’s been a huge blessing,” says Bill. “The strange thing is that you will never fit in again where you come from. And that’s OK. We don’t completely fit in in Cambodia or back in the States. But in exchange, we’ve had an experience that is deeper than words can describe.”

A SENSE OF DOOM

One recent evening, while driving back to Siem Reap from a medical conference in the city of Battambang, a Cambodian colleague remarked to the Housworths, “You see that sunset you expatriates think is so beautiful? For us, the older Cambodian generation, even the most beautiful of sunsets still bring us a sense of doom, for that is when the killing always began.”

From 1975 to 1979, Cambodia endured the genocidal rule of the Khmer Rouge, a radical regime that tried to impose a Communist, agrarian-based society and killed millions, specifically targeting doctors and other educated people, whom they suspected were “counter-revolutionary.” Years of civil war had preceded the Khmer Rouge rule, and while a Vietnamese invasion toppled them from power, the Khmer Rouge persisted as an insurgency well into the 1990s. Cambodia still suffers the legacy of that terror, rampant destruction, and mass murder. It is one of the poorest Southeast Asian nations, with the lowest levels of literacy and life expectancy and highest rates of infant mortality.

When the fighting ceased, there were only a few dozen doctors in the entire country who had not fled or been murdered. Hospitals had been leveled; medical supplies were virtually nonexistent. The public health fallout from years of devastation includes tens of thousands of children.
and adults maimed by the land mines and unexploded bombs that remain hidden in the countryside, rampant posttraumatic stress, and a childhood malnutrition rate of 40 percent.

The Khmer Rouge’s bloody legacy also left a less-visible mark on Cambodia’s public health, says Bill: it sowed a pervasive mistrust. “If you lived through something like the Khmer Rouge—where your survival depended on lying, and you knew that everyone else was lying—that mindset lives on,” he says. This deep unease keeps medical staff from different hospitals from communicating about a patient’s medical history. It also deters Cambodians from seeking routine medical care, even for ailing newborns. As a result, the essence of public health—preventing diseases before they take hold—is undermined.

A MARRIAGE ROOTED IN ADVENTURE

The Housworths didn’t know about AHC when they first visited Cambodia in 2001. They came for a short stint of volunteering with an NGO focused on clean water and sanitation. They had married a year earlier, following a courtship that began during their medical residencies at the University of Louisville Hospital.

“To do this kind of work, you have to be adventurous. That was the quality that initially drew us together,” says Lori. Cambodia was just the most recent in a series of international volunteering trips the Housworths had made, individually and as a couple, often to clinics and disaster-relief efforts in impoverished places such as Zambia, Zimbabwe, and Mozambique.

These overseas assignments taught the couple that the grief of a parent over a dying child transcends borders—the only difference being that in the developing world, the children often don’t stand a chance of survival.

“We’ve both always had the desire to live our lives outside the box,” says Lori. “Bill is the visionary, and I am good at laying out the details of a plan to make it happen.”

Their first trip to Cambodia convinced them that if they wanted to have a lasting impact, their physician training wasn’t enough. “The medical challenges in Cambodia were really public health challenges,” says Bill. Most Cambodians lived in rural areas without reliable

In the inpatient ward, a nurse changes an IV.
access to clean water, electricity, or routine medical care. Like many of the places the Housworths had volunteered in, Cambodia relied heavily on NGOs and couldn’t train its own doctors and nurses in sufficient numbers, because the medical and educational infrastructure had been gutted by the Khmer Rouge.

So the Housworths shifted their goal from delivering front-line care to helping developing nations build their own robust health care systems. That led them, in 2004, to Harvard Chan. They moved their young family into a tiny Beacon Hill apartment and focused on humanitarian studies and international health. Supporters from their evangelical church in Louisville covered their tuition.

LEARNING LEADERSHIP AT HARVARD CHAN
Bill and Lori say what made their education at the School unique was how it taught them leadership skills—not just to understand disease from a public health perspective but also to work with NGOs, funders, and government officials to improve conditions. “Lots of public health schools can teach you epidemiology and statistics,” says Bill. “But only a place like Harvard can combine that hardcore knowledge with the worldly wisdom that allows you to step out and accomplish something.”

At Harvard, he learned how donor funding and donor control work in the public health sphere. Bill quotes a biblical phrase to explain what he means. “You must be wise as a serpent, yet innocent as a dove,” he says, “which means that to make the right thing happen for the people you are there to serve, you have to understand that others may not have the best motives. On the other hand, you personally have to have the best motives. You have to keep your own motives pure, even when working with the power structures around you.”

For example, some of the outside medical institutions that partnered with AHC pushed for high-end diagnostic tests that weren’t needed at the hospital. Other institutions offered what Bill calls “quid pro quo arrangements” that clearly benefited them more than AHC. And occasionally, foreign medical researchers tried to skirt the ethical restrictions of their home countries by testing unproven
treatments at AHC or sought Cambodian patient data for their own research while offering little funding or training for AHC staff in return.

“Setting priorities for the organization from the Cambodian leadership perspective, and sticking to those priorities despite outside pressures to drift, were some of the most important things we did,” Bill says.

A year after graduating, the Housworths learned about the executive director opening at AHC, and Bill decided to apply. The decision wasn’t easy. Both Lori and Bill had well-paying jobs in Louisville hospitals. They also had three young children. Most of their medical colleagues thought the idea of moving halfway around the world was reckless.

A CHOICE TO NOT BE SAFE

Bill understood the doubts. He felt them himself. “My wife has always had more faith than me,” he says. “I remember the night that I finished my last shift in the emergency room in Louisville. I went over to our little house that we were giving up in order to take some final objects and boxes out of it. I was there, alone, late at night. I remember falling to my knees in the upstairs bedroom that didn’t have any furniture in it anymore and crying. I cried hard, thinking, ‘What am I giving up? Why am I relinquishing a successful practice, security, and a known future for something that is very, very risky—careerwise, safetywise, and possibly from my children’s perspective?’”

But for Lori, the choice was obvious. “We could play it safe, put our children in the best schools, and maintain our comfort and security. Or we could step out in faith and try to make a difference. I kept remembering a mother I had met in Cambodia. She had been removed from her shanty along Lake Tonle Sap and transported to a relocation area with no water and no sanitation. She lived in a tent in a dry, dusty field. One day she brought me her baby, who was sick with pneumonia, to see if I could help. Her face stayed in my mind. Certainly she and her family were not ‘safe.’ In the end, we did what we were called to do.”

Once the couple began working in Cambodia, Lori continues, the everyday risks became more apparent: “A snake in the kitchen, dangling power cords everywhere, filthy water flooding our neighborhood during the seasonal monsoons, a man raising crocodiles in the backyard of the house we were renting. You quickly realize that life is not fully under your control. But that’s true no matter where you are.”

CONFRONTING CULTURAL TABOOS

Among her responsibilities, Lori oversaw the hospital’s sexual abuse clinic. Child sexual abuse is epidemic in Cambodia, yet Cambodian physicians are uncomfortable talking about it. That reticence reflects not only a taboo around the problem itself but also the lack of rule of law in Cambodia, which causes physicians to be worried that their own practice or reputation could become quickly impugned by becoming involved in sexual abuse cases. Sometimes, such cases involve powerful families, leading to a “tit-for-tat accusation game,” in which kin of the accused claim that clinicians are taking money from the accusers or are simply incompetent, says Lori. Cambodia is also a popular destination for sex tourists who target children. And many cases of abuse involve older children, often teenagers, who harm younger relatives when left on their own by parents who must travel long distances, sometimes out of the country, to find work.

Lori recalls a 7-year-old girl whose mother was away working in Thailand and who was left in the care of her grandmother for months at a time. The grandmother also cared for a teenage grandson whose parents had died in an accident.

“They lived in a tiny hut, and the grandson and the 7-year-old slept in the same bed. And this is where the abuse occurred,” Lori says. “So many medical problems we see stem from difficult social situations born of dire poverty. Addressing the immediate medical needs is always tied to addressing the underlying social challenge.”

With the help of several engaged donors, the Housworths established the first hospital-based social-work program in Cambodia, training social workers and clinicians to spot and refer sexual abuse cases. In turn, AHC became a nationally recognized center for the detection and prevention of sexual abuse.

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RAISING THE STANDARD OF CARE
During the Housworths’ tenure, AHC added a cancer care center and an ophthalmology center. The hospital also opened a much-needed heart surgery unit, after the Housworths realized that a large number of Cambodian children with easily mended congenital heart defects were going untreated, suffering prolonged illness, and frequently dying. In 2008, when the Housworths arrived, the hospital was able to diagnose heart conditions in patients but couldn’t provide the corrective surgery.

With the assistance of donors and hospitals in Singapore, Australia, and the United States, the Housworths built a treatment program for congenital heart disease. At first, all the operations were performed by visiting foreign surgeons. But by 2013, Cambodian surgeons were doing open-heart surgery unassisted—more than 100 operations per year.

The Housworths have also devoted much of their work to setting up systems—such as mortality reviews and transparent audits of hospital finances—as models for other Cambodian medical institutions, despite a culture where hiding mistakes for fear of blame and harsh retribution was common.

In 2011, AHC opened a satellite clinic on the grounds of a Cambodian government hospital, in a poor province about 20 miles from Siem Reap. The clinic became the government hospital’s de facto pediatric ward, treating more than 1,000 children a month. It is also a springboard for the hospital’s community health development project, which trains village volunteers to improve local knowledge of nutrition, sanitation, and hygiene and distribute needed supplies such as water purification filters.

GOING ABROAD FOR SPECIALIZED TRAINING
Every year, the hospital also sends a handful of doctors and nurses abroad for specialized training. In 2014, that group included Prak Manila, a registered nurse and the chair of AHC’s local board of directors. Manila was born in Phnom Penh in 1970, the daughter of two nurses. The Khmer Rouge killed two of her brothers, and the rest of the family narrowly escaped.

Manila started working at AHC in 1999. “At the time, 60 percent of the staff were foreigners and there were no Cambodians in leadership,” she says. Today, the only foreigners working at AHC are visiting surgical specialists.

In 2011, AHC sent Manila, initially trained as a midwife, to Bangkok, Thailand, to earn her bachelor’s in nursing, and then again in 2014 for a two-year master’s program in nursing administration. More recently, Manila’s work has focused on training nurses in community clinics and government hospitals rather than direct patient care, helping carry out the vision of AHC as a force for bolstering Cambodia’s homegrown health care system.

“Dr. Bill is a great leader,” Manila says. “He empowered people. He encouraged people to take risks. I’ve become a more creative thinker and more independent because of him. He motivated me to be a leader.”

CEREMONY AND SENSITIVITY
The Housworths, in turn, have been transformed by Cambodia. “I’m an emergency room doctor,” says Bill. “By nature, I’m kind of gruff, and I’m usually thinking about what the solution is or what the next move is. But in a Buddhist culture, and really everywhere in Cambodia, ceremony is very important, and so is being sensitive to what another person is feeling.”

The Housworths have devoted much of their work to setting up systems—such as mortality reviews and transparent audits of hospital finances—as models for other Cambodian medical institutions.
For example, he says, “I wear cowboy boots and I move fast. That shows that I value time and doing things.” But when his good friend Thir Kruy, the secretary of state for Cambodia’s Ministry of Health, asks Bill to join him for dinner, they have lingering conversations about the challenges facing Cambodia. “Kruy doesn’t value time as much as he values relationships,” says Bill. “When I slow down and talk to him in a relaxed setting, that’s when we get things done.”

THE NEXT CHALLENGE
At the end of each day at AHC, families of patients whom the staff could not treat settle in for a night in the courtyard, cooking dinner in an outdoor kitchen and lying on mats under hospital-provided mosquito nets. “Some of them like sleeping in a place like this even better than their own house,” says Manila. “When I walk through there, I can feel a sense of comfort and happiness.”

The Housworths’ ultimate goal was always to help AHC transition to a fully Cambodian staff providing world-class pediatric care. And under their leadership, as the hospital’s training programs took hold, the number of foreign doctors and specialists dwindled. In 2013, Friends Without a Border at last handed over hospital operations to a Cambodian NGO.

This past February, the Housworths moved on to a new challenge: replicating the AHC model in northeast Cambodia, the poorest region of the country. With the support of the Cambodian Ministry of Health, they aim to create a pediatric ward at the hospital in Kratie, a provincial capital on the Mekong River, not far from Cambodia’s border with Laos. There, says Bill, “the neonatal mortality is five times higher than it is in Phnom Penh. It’s 40 times higher than it is in a place like Singapore.”

Once again, the Housworths’ plan is to train, educate, and build up a system of compassionate care that can eventually be handed over to Cambodian doctors and nurses. “So many times, wealthy international donors look at Cambodia and they see it as a poor place that simply needs a handout,” Bill says. He concedes it could take another 10 years for the Kratie facility to become self-administering. “But Lori and I see ourselves here long-term. We believe in Cambodia and Cambodians.”

Chris Berdik is a Boston-based science journalist. Follow him @chrisberdik.
Calvin Johnson almost didn’t make it out. Imprisoned for life in Georgia for a rape he did not commit, he is a free man only because of a chance discovery. A summer intern walking through a parking lot at the back of the Clayton County district attorney’s office happened to notice a box marked “Evidence” and wondered why it was next to the trash. The box included the “lost” evidence that Johnson and his legal team at the Innocence Project had been seeking for many years. Johnson spent 16 years in prison before being exonerated based on that DNA evidence.

Marvin Anderson, sentenced to 210 years in prison in Virginia for a rape he did not commit, was freed only because a crime lab analyst—contrary to policy—had saved some of the physical evidence from the case instead of destroying it. Nineteen years later, when the evidence was discovered and tested, DNA analysis excluded Anderson as the perpetrator. He had spent 15 years in prison and four years on parole fighting, alongside the Innocence Project, to have his conviction overturned.

Johnson and Anderson are two of the lucky ones—the 333 wrongfully convicted individuals who have been exonerated in this country through DNA evidence. The Innocence Project represented defendants or provided significant assistance in 177 of these cases.

A Matter of

continued
Conviction

As Executive Director of the Innocence Project, Madeleine Delone works to free wrongfully convicted people from prison using DNA evidence.
Since 2004, Madeline deLone, AB ’81, SM ’84, has been executive director of the Innocence Project, which includes a team of lawyers and law students who work pro bono to free innocent people from prison using DNA evidence. Her particular focus is people “deprived of their liberty and freedom,” as she phrases it in her lawyerly way—and especially those unjustly imprisoned.

Her passion for the job, you might say, is in her DNA. DeLone comes from a long line of Philadelphia Quakers committed to social justice. Her great-great-grandmother was a suffragette who tied herself to the White House fence and went on a hunger strike for women’s right to vote. Her grandmother insisted that people leave her house if they used racial epithets. Her parents worked in education. “In my family, there was a strong sense that every human being was valuable and important,” says deLone, “and it was the job of people who had much to give much back to others.”

PRISON AS A PUBLIC HEALTH PROBLEM
The United States, with just 4.4 percent of the world’s population, houses 22 percent of the global prison population. It also has the highest per capita prisoner rate in the world, at 716 per 100,000 people, or some 2.2 million individuals behind bars. Mandatory minimum sentences, the criminalization of many behaviors, “three strikes and you’re out” statutes—these and other policies enacted in the 1970s and ’80s have caused prison populations to swell by 700 percent over the last 40 years.

Before she worked in the criminal justice system, it had never occurred to deLone that a significant number of people who were serving time were innocent. Calvin Johnson, Marvin Anderson, and the others freed since 1989 with the help of the Innocence Project represent just the tip of the iceberg of wrongfully convicted people. If, as conservative estimates suggest, 1 percent of people in prison in the

Conservative estimates suggest that 1 percent of the 2.2 million individuals in U.S. prisons are innocent. That means at least 22,000 people are behind bars for crimes they did not commit.

An exuberant Rickey Dale Wyatt (center) walks out of the Dallas, Texas, courthouse a free man, after serving nearly 31 years in prison for a rape he didn’t commit—as proved by DNA evidence obtained and tested by the Innocence Project. Wyatt is flanked by his Innocence Project staff attorney Jason Craig (left) and Innocence Project Codirector Barry Scheck (right).
United States are innocent, that would mean that 22,000 people are behind bars for crimes they did not commit. Many experts think the percentage is realistically more like 2.5 to 5 percent—meaning that some 55,000 to 110,000 wrongfully convicted people are serving time.

The fallout hurts not only individuals but communities as well. “Mass incarceration is one of the great public health challenges of our times,” notes the Vera Institute of Justice in a 2014 report titled On Life Support: Public Health in the Age of Mass Incarceration. The millions of people who cycle through the nation’s courts, jails, and prisons experience chronic health conditions, infectious diseases, substance use, and mental illness at much higher rates than the general population. Large-scale imprisonment, the report further notes, “has stretched the social and economic fabric of communities, contributing to diminished educational opportunities, fractured family structures, stagnated economic mobility, limited housing options, restricted access to essential social entitlements, and reduced neighborhood cohesiveness. In turn, these collateral consequences have widened the gap in health outcomes along racial and socioeconomic gradients.”

The personal costs are largely hidden. One mother never celebrated birthdays or holidays during the 20 years her son was in prison before being exonerated; there was nothing to celebrate, she explained. Some families spend enormous resources trying to stay in contact with their loved ones, who often are assigned to facilities far from the family’s home. Sometimes families aren’t able to continue visits over decades, and loved ones drift apart. Children, especially, can feel abandoned. When people are released from prison, the rebuilding and healing can take years—or never happens at all.

The scenarios are all the more tragic when a person has been imprisoned for a crime he or she did not commit. (See “Causes of Wrongful Conviction,” page 33.)

PROVING INNOCENCE: A FORMIDABLE CHALLENGE

Proving one’s innocence while behind bars is daunting. One of the surest ways is to present DNA evidence that was not considered at the trial. But, says deLone, in more than 90 percent of cases of serious violent crime—for example, drive-by shootings—no DNA evidence exists. Cases in which the perpetrator’s DNA is often present are those involving rape or murder. The effort to track down this evidence and proceed through myriad legal motions is painstaking and can go on for years. Sometimes evidence has been lost or destroyed, and an innocent person is never exonerated. The Innocence Project closes nearly 25 percent of the cases it takes on because the exculpatory genetic evidence is never found.

“Whenever we get someone out of prison, I think about how old they were when they went in and how old they are...
now,” deLone says. “And I may compare that to my own family. Some people didn’t get out until they were 30, but they were imprisoned when they were 17—at that time, about the same age of my kids. Or they went to prison in 1981, when I got out of college, and they are just coming out now.”

These empathic calculations sustain her. “Every time someone gets out,” says deLone, “no matter how hard the work seems or how frustrating some of the battles are, I can’t imagine anything more important than helping the next person get out and preventing the next person from going in.”

**“THE ONLY STUDENT CRAZY ENOUGH FOR THIS JOB”**

DeLone found her way to prison work through two Harvard schools. After studying biological anthropology at Harvard/Radcliffe colleges and planning to be a doctor, she shifted her focus and came to the Harvard T.H. Chan School of Public Health, where she studied health policy and management. Courses on the epidemiology of mental illness led her to start thinking about people who were institutionalized, whether through psychiatric hospitalization or criminal incarceration.

She worked most closely with health systems expert Marc Roberts, professor in the Department of Health Policy and Management, who passed away in 2014. Knowing of her work with Roxbury Youthworks, which helped young people in the inner city through alternatives to incarceration, Roberts informed her of a job in the Department of Juvenile Justice in New York City, overseeing health care for kids in juvenile detention. “He said I was the only student he’d ever met who was crazy enough to think that this would be a good job,” she remembers. “It was not a time when many people in public health were focusing on criminal justice. But I thought it sounded like the most interesting and important job imaginable.”

After working with incarcerated adolescents, deLone went on to become the administrator of a 24-hour clinic in one of the jails on Rikers Island in New York that housed 2,500 men. A year and a half later, however, the anger and fear that pervaded the jail environment every day wore her down, and she left to continue work on prison health improvement from outside the jails. Eventually, deLone went to law school, becoming first a litigator for children’s rights, and later working as a staff attorney at the New York Legal Aid Society’s Prisoners’ Rights Project.

Then she heard about the Innocence Project, a young nonprofit that needed a leader to help it grow. She was already a believer. “When we as a society lock people up, we have an obligation to try to minimize the harm that comes from that act,” she says. “It’s even more critical to take a person out of that situation who has actually done nothing wrong.”

**A PUBLIC HEALTH APPROACH TO PRISON REFORM**

Drawing on her Harvard Chan experience, deLone has adopted a public health approach to both improve life for prisoners and prevent innocent people from being incarcerated in the first place. Volunteering for years on the prison health committee of the American Public Health Association, she edited the third edition of the association’s *Standards for Health Services in Correctional Institutions*. Determined to weave international human rights principles into the updated standards, she and the committee pored over treaties, conventions, and other international documents and standards to see how they could be applied to U.S. prisons, particularly to address issues raised by prison violence and solitary confinement.

More recently, in her leadership role at the Innocence Project, she has sought to bring the rigor of public health research techniques to forensic science, which in many ways remains unvalidated. While fingerprint evidence might seem irrefutable, for example, there are some cases of innocent people being convicted in which faulty fingerprint evidence contributed to a wrongful conviction. Juries unaware of the dearth of scientific backing behind many forensic disciplines may believe shaky evidence to be fact, increasing the likelihood of wrongful convictions. DeLone believes that public health epidemiologists and biostatisticians can help improve forensic science in the criminal justice system by strengthening study design and analyses, and that others in the public health community can work with those in the criminal justice system to help apply principles of quality improvement and learning from error to the field.

**FIRST DAY OF FREEDOM**

After losing years or decades to wrongful incarceration, exonerees emerge into a world that’s utterly changed. Although justifiably angry when first imprisoned, at some point, observes deLone, many come to some sort of peace
with the situation, refusing to permit anger to eat them from the inside.

Indeed, by the time of their release, most exonerated individuals have forgiven the people involved in their imprisonment—even those whose mistaken eyewitness identification ensured their conviction—and just want to get on with their lives. Frequently, they are driven to make sure that what happened to them doesn’t happen to anyone else. “They become tremendous advocates for the reforms that will prevent wrongful convictions,” says deLone. “There is no more powerful voice than the voice of the exonerated.”

As joyful as it is, however, an exoneree’s release can also be bittersweet. “There’s something amazing and wonderful about welcoming someone home, and at the same time something unbelievably horrible about the error and the amount of time they spent away,” says deLone. She worries about the wrongfully convicted people who don’t have that sustaining inner strength, the people the Innocence Project may never find because they have given up.

Upon each prisoner’s release, the Innocence Project team sets up a videoconference with the exoneree, who is usually accompanied by an Innocence Project lawyer and social worker and often the law student who most recently worked on the case. “When the exoneree calls in,” says deLone, “the room bursts into applause, and it goes on for as long as people can clap. You think somehow you would get used to it. I’ve probably been here for 75 or 80 of these exonerations and peripherally involved in a number more, and it never gets old. It takes my breath away every time.”

Jan Reiss is assistant director of development communications and marketing at Harvard T.H. Chan School of Public Health.

CAUSES OF WRONGFUL CONVICTION

Eyewitness misidentification: 72 percent
Unvalidated/improper forensics: 47 percent
False confessions/admissions: 28 percent
Informants/snitches: 16 percent

Contributing causes based on Innocence Project data of the 333 DNA exonerations.

GOVERNMENT MISCONDUCT
Some wrongful convictions are caused by honest mistakes. But in many cases, the overriding goal of law enforcement officials and prosecutors is to secure convictions. DNA exonerations have exposed official misconduct at every level and stage of a criminal investigation.

COMMON FORMS OF MISCONDUCT BY LAW ENFORCEMENT OFFICIALS INCLUDE:
• Employing suggestion when conducting identification procedures
• Coercing false confessions
• Lying or intentionally misleading jurors about their observations
• Failing to turn over exculpatory evidence to prosecutors
• Providing incentives to secure unreliable evidence from informants

COMMON FORMS OF MISCONDUCT BY PROSECUTORS INCLUDE:
• Withholding exculpatory evidence from defense
• Deliberately mishandling, mistreating, or destroying evidence
• Allowing witnesses they know or should know are not truthful to testify

INADEQUATE DEFENSE LAWYERS
A review of the 333 DNA exonerations has revealed numerous instances of incompetent and overburdened defense attorneys at the trial and appellate level, some of whom were literally asleep or drunk on the job.
Blue Sky Scenario

Jeremiah Zhe Liu, SM ’15, PhD ’20, is creating new biostatistical methods that may help reverse the devastating effects of air pollution in his native China.
On calm days, an acrid fog descends over Taiyuan, China, the hometown of Jeremiah Zhe Liu. Tucked into the northeastern corner of the nation, this industrial city rises from a landscape that is otherwise quiet and agricultural—a bit like Iowa, Zhe Liu says—except for the presence of huge coal mines and steel plants that employ many of Taiyuan’s 3.5 million inhabitants.

While these sites are economic assets for Taiyuan, the cloud of coal dust, waste gases, and smog they create is so dense that respiratory disease is an accepted fact of life. “It’s something we considered normal growing up,” says Zhe Liu, SM, ’15. “It was weird not to have some sort of lung disorder, because the air was so bad.”

STARTING WITH STATS
With his mother’s encouragement, Zhe Liu launched his academic career in public health by studying statistics and computer science at the University of Iowa. “She taught me that if you know the technical methods, then the substantive part is a lot easier to learn,” he says. In the process, he discovered his talent for mathematical analysis—and first learned about the Six Cities study, the groundbreaking 1993 research from the Harvard T.H. Chan School of Public Health that connected air pollution to mortality risk throughout the U.S., paving the way for stronger federal regulations on fine particulate matter. It shifted his direction as a scholar.

Having just earned his SM degree from Harvard Chan last May, Zhe Liu is now working toward his PhD here in 2020, forging advances in biostatistics to reach his goal of undertaking research similar in ambition to the Six Cities study.

BROKEN DATA
Although data is easy to access in our digital world, finding information that overlaps in time, space, sampling parameters, and so on isn’t so simple. Zhe Liu is chipping away at one of the field’s toughest methodological problems, says his adviser, Brent Coull, professor of biostatistics.

“Say you want to map air pollution in the Greater Boston region. You might find plenty of particle sensors installed on rooftops downtown but only a scattered few out in the surrounding suburbs. To complicate matters, not all of those sensors may have been active at the same time. They may not have been operated by the same organizations. They may not have even been able to count the same-size particle. The result: a mountain of fragmented data. How do you make sense of it all?”

Many researchers get around the problem by starting fresh and laying down their own monitoring campaigns for new studies. But that’s expensive and eats up lots of resources. “If we can leverage existing data, it provides a more cost-effective way of getting at larger health questions,” Coull says.

“I thought blue skies like those I saw in picture books were just a fantasy until I stepped off the plane at JFK. It made me determined to help save my countrymen from a torture they weren’t even aware of.” —Jeremiah Zhe Liu, SM ’15, PhD ’20

Throughout his childhood, whenever friends or family members wheezed and hacked, his mother—a public health specialist—would quietly remind him of the connection between these health disorders and the pollution surrounding their community. It wasn’t until he came to the United States in high school, however, that those lessons really hit home.

“I thought blue skies like those I saw in picture books were just a fantasy until I stepped off the plane at JFK,” he says. “The air smelled so different, and I kept wondering, why is there no coal dust on the streets? That’s when I realized how bad it was in my hometown. It made me determined to help save my countrymen from a torture they weren’t even aware of.”

“Before Six Cities, air pollution research was limited to single sites. No one had tried to link multiple cities to do a national-level assessment before,” he says. “I was struck by the scale and ambition of the project,” and, he adds, the fact that it was made possible primarily by the use of innovative statistical methods.

Zhe Liu became determined to master techniques like these and put them to work conducting similar studies in his own country, which is home to many of the world’s most polluted urban areas. In 2014, only eight of China’s 74 biggest cities met the government’s own air quality standards. In the 2014 Environmental Performance Index, China ranked 176th out of 178 nations in air quality.
“Jeremiah is on the cutting edge of this technique.”

**POLLUTION NEVER DIES**
That air pollution devastates human health is settled science. Zhe Liu’s goal is to refine a method that will pinpoint the specific causes and sources of pollution-related disease, which could help policymakers calculate the costs and benefits—to both public health and the overall economy—of reducing those exposures.

“We know that fine particulate matter or PM 2.5”—particles 2.5 microns or less in diameter—“harms respiratory health,” he explains. “What we're trying to do is tease out the components of PM 2.5 into different pollution signatures: which are emissions from highways, which from nearby factories, which from heating oil in old buildings. If you know the source of the pollution, that gives you a priority target.”

In his own lifetime, Zhe Liu saw the sources of pollution shift in his hometown. “The local economy relied on heavy industry and coal mining. But as time went on, the coal started to run out and heavy industry died—but the impact from car emissions and construction sites went up,” he says. “Pollution never dies, but the sources change.”

He doesn’t underestimate the cultural or political obstacles to translating his research into policy. “From my perspective, the only interest of the Chinese government—the only way for it to justify its existence—is to stimulate the economy at an unbelievable speed,” he says. “It will be a major challenge to implement environmental policies unless you’re able to translate public health benefits into economic benefits.”

If he were the country's air quality czar, Zhe Liu adds, he would first restrict road traffic, in part by encouraging bicycle use. “But is that a realistic policy? Would people be willing to give up the pride and convenience associated with a new car? Would government be willing to go against the interests of the market? I’m not sure.”

**IMAGINING PRISTINE SKIES**
As he describes his work, Zhe Liu exudes a quiet confidence, occasionally taking long pauses to find just the right word, obviously comfortable with the silences and even the imponderables. “My fear is that China has already missed its chance and that there’s no turning back,” he concedes. “For a polluted city to recover a healthy atmosphere, the financial investment is almost unthinkable.”

But if China’s authorities do finally commit to solving the pollution crisis, he says, that, too, would be almost unthinkable. For a moment, Zhe Liu imagines Taiyuan with pristine air. “It would remove the physical and mental shackles that people endure for a lifetime. They would be saved from a life in which they are destined to suffer lung disease, beginning in infancy; in which children can’t play outside because parents worry about them breathing too much dirty air; in which young people can’t enjoy long walks with their love; in which adults must stay inside after work watching TV, to avoid the harmful air outside; in which so many die from pollution-related heart or lung conditions, starting in their 50s,” he says. “And the sky would be blue.”

*David Levin is a Boston-based science journalist. He can be reached through his website at www.therealdavidlevin.com.*

To watch a video or hear a podcast of Jeremiah Zhe Liu and other Harvard Chan students, go to [http://hsph.me/students-videos](http://hsph.me/students-videos) and [http://hsph.me/students-podcasts](http://hsph.me/students-podcasts).
The Harvard T.H. Chan School of Public Health continues to pursue its strategy of revenue diversification and expense management on the path to returning to a balanced budget. In fiscal year 2015, revenues totaled $338 million, with endowment income and education revenue continuing to grow. Although sponsored research support was slightly lower than anticipated, a record-setting number of proposals submitted, as well as an increase in awards received from the National Institutes of Health, foster optimism about future growth. Total expenses rose by less than 1 percent.

The most notable financial event during fiscal year 2015 was the announcement of the $350 million naming gift from the Morningside Foundation.

**FUNDRAISING HIGHLIGHTS**

Fiscal year 2015 was another record-breaking fundraising year, with a total of $424.6 million raised. Excluding the $350 million naming gift—an unrestricted endowment gift that may not be spent, but will generate income for the School beginning in fiscal year 2016—the School has raised a total of $321.5 million toward its Campaign goal of $450 million. So far, we have raised the following amounts across our Campaign themes: $89.6 million for Old and New Pandemics; $79.4 million for Poverty and Humanitarian Crises; $78.3 million for Failing Health Systems; and $74.3 million for Harmful Physical and Social Environments. Faculty and staff giving increased by a remarkable 83 percent in fiscal year 2015, bringing in more than $1.6 million. Gifts from 1,349 alumni brought the alumni giving rate to just over 10 percent. Gifts to financial aid totaled $3.2 million. And during this fiscal year, 381 new donors joined the ranks of supporters.
Our supporter lists—including a complete list of alumni donors to the School—are available online at hsp.harvard.edu/campaign/honor-roll-of-donors/
Dear friends,

This issue of Harvard Public Health celebrates our alumni and highlights the extraordinary “ripple effect” we see in public health, where every new graduate and every new discovery has the potential to touch the lives of thousands—even millions—of people.

There is a similar multiplier effect for philanthropy at the Harvard Chan School. This was remarkably clear in fiscal year 2015, as we saw transformative gifts of recent years come to fruition in exciting ways, from the launch of new degree programs that are reshaping public health education to the construction of new classroom spaces to the announcement of the first five seed grants made from the McLennan Family Fund’s Dean’s Challenge Grant Program, which went to faculty members pursuing innovative lines of research in the biology of the Ebola virus, as well as the connections between race, ethnicity, and public health.

We are immeasurably grateful for the generosity that made these and many other programs possible, and for the outpouring of support that made this another record-breaking year in fundraising at the School.

The historic naming gift from the Morningside Foundation of alumnus Gerald Chan and his brother Ronnie Chan was not the only transformative gift we received in FY15. A few of the other game-changing gifts include a $10 million gift from an anonymous donor that will promote advances in research, education, and policy to improve the lives of crisis-affected youth in the Middle East and North Africa; a $2 million bequest from Edward C. Green to support visiting fellows within the Takemi Program in International Health; a $1.25 million gift from Fred Weintz, Jr. to celebrate the memory of his late wife, Betsy Weintz, by providing special recognition to major humanitarian leaders; and a $1 million bequest from alumni Michael and Katharine Morley that established an endowed fellowship fund for international students at the School.

In addition, a longtime friend of the School, Deborah Rose, gave $1 million to honor the leadership of Julio Frenk, who stepped down this past August to become president of the University of Miami. Her gift will ensure that two of Dean Frenk’s flagship initiatives—the doctor of public health and the Ministerial Leadership in Health programs—receive much-needed support as the School embarks on a new era with a new dean.

I was honored to take over as vice dean for external relations this year, and I am delighted to be working with Acting Dean David Hunter, who is himself an alumnus of the School. As we look ahead to the unfinished business of the Campaign for the Harvard T.H. Chan School of Public Health and recommit to the broad public health imperatives that are the true goals of our Campaign, I thank you for your generosity.

Your vision and your support are helping to create a healthier world and a stronger, more innovative, and more globally connected School.

With my warm regards,

Michael Voligny
Vice Dean for External Relations
Leadership Council Annual Meeting
From Cells to Cell Phones

The annual summit of the School’s Leadership Council on October 29 and 30 explored the role that communication plays in improving lives across the globe. The keynote presentation featured former Massachusetts Governor Deval Patrick and the School’s work on “swarm intelligence” during crises, including the 2013 Boston Marathon bombings. Faculty sessions focused on communicating with the public about health threats, the use of mobile phone data in infectious disease research, and how to harness small behavioral nudges to influence health decisions.

From left: Leonard Marcus, codirector, National Preparedness Leadership Initiative and lecturer on public health practice; Acting Dean David Hunter, MPH ’85, SD ’88; Barry Dorn, SM ’04, faculty member, National Preparedness Leadership Initiative and lecturer on public health practice; former Massachusetts Governor Deval Patrick, AB ’78, JD ’82, LLD ’15; and Jonathan Lavine MBA ’92, Board of Dean’s Advisors member and Campaign co-chair.

Volunteer Leadership Award recipient and Leadership Council Executive Committee member Barrie M. Damson, AB ’56 (left), and student Emily Gao, SM ’16, the Volunteer Leadership Award Scholarship Recipient, with Acting Dean David Hunter.

Leadership Council Member Eugene Mickey, MPH ’82, with wife Sue Mickey (left) and daughter Ethel Mickey.

Leadership Council members Holly Hayes and Carl Stern, Jr., AB ’68.

Leadership Council members James Rand IV (left) and Gail Rand (center), with Douglas Dockery, SM ’74, SD ’79, John L. Loeb and Frances Lehman Loeb Professor of Environmental Epidemiology and chair, Department of Environmental Health.
Fellowship Celebration

On April 8, the Fellowship Celebration honored the School’s most generous supporters of financial aid. Individuals and organizations that made gifts of $10,000 or more to student aid in the past year, and donors who have established endowed financial aid funds in the past, met School leaders as well as the students who benefit from their extraordinary contributions.

From left: Feiby Nassan Tawadros, SD ’18, Benjamin Greeley Ferris, Jr., Fellow; Selma Gicevic, SD ’18, Prajna Scholar; Aditi Krishna, SD ’17, Dillon Family Fellow and recipient of student support from the Julie E. Henry Fund for Maternal and Child Health.

From left: Michael M. Donatelli, AB ’79, JD ’81; John Connolly, SM ’15, SD ’20, Mike M. and Evelyn B. Donatelli Fellow; Lana Awad, SM ’16, Mike M. and Evelyn B. Donatelli Fellow; Evelyn Donatelli.

Joseph D. Brain, SM ’62, SM ’63, SD ’66, Cecil K. and Philip Drinker Professor of Environmental Physiology, Department of Environmental Health; Helen Cho, AB ’10, PhD ’19, Joseph D. Brain Fellow.

From left: Karen Levy, AB ’89, JD ’92; Peter Banks, AB ’57; Julia McNabb-Baltar, MPH ’15, Banks Fellow.

From left: Yvette Efevbera, SM ’11, SD ’18, past Dillon Family Fellow; Paula Ivey Henry, SM ’95; Snowden Henry.

Oluwafemi Ojo, MPH ’15, Wanda Lane Buck Fellow; Oye Olukotun, MPH ’83, who established the Buck Fellowship.
T.H. Chan Portrait Unveiling

Harvard T.H. Chan School of Public Health kicked off the celebration of the first Commencement under its new name on May 27 with the unveiling of a portrait of the late T.H. Chan. Chan’s family established The Morningside Foundation, which made the transformational naming gift in September 2014. Members of the School’s community packed Rosenau Atrium in the Kresge Building to watch former Dean Julio Frenk unveil the portrait with the help of painter Everett Raymond Kinstler.

Leadership Council Regional Event

Breaking the Cycle: Mothers, Children, and Malnutrition

Wafaie Fawzi, MPH ’89, SM ’91, DrPH ’92, Richard Saltonstall Professor of Population Sciences and chair of the Department of Global Health and Population, discussed the innovative ways the School is helping break the cycle of malnutrition for the world’s most vulnerable families in Sub-Saharan Africa and Asia. The San Francisco event was hosted by Roger L. Barnett, MBA ’91, chairman and CEO of Shaklee Corporation.
Alumni Weekend
Overcoming Health Disparities: Achieving Health Equity

Some 130 alumni returned to the School on October 2 and 3 to reconnect with former classmates, network, and learn more about current research in public health. Physicians Cheryl Whitaker, MPH ’94, and Eric Whitaker, MPH ’93, presented the opening lecture on health disparities and health care. Other speakers included Yvette Roubideaux, AB ’85, MD ’89, MPH ’97, former senior adviser to the secretary for American Indians and Alaska Natives, U.S. Department of Health and Human Services. See page 10 for this year’s alumni award recipients.

Anthony Dias, MPH ’04, immediate past president of the Alumni Association, passed the gavel to incoming president Sameh El-Saharty, MPH ’91.

Yvette Roubideaux, AB ’85, MD ’89, MPH ’97, with Elaine Hart-Brothers, MPH ’79.

Mark Clanton, MPH ’90.

From left: John Whyte, MPH ’93; Eric Whitaker, MPH ’93; Anders Seim, MPH ’88; Cheryl Whitaker, MPH ’94.
Inaugural Luncheon of the 1913 Society
The Most Influential Investment

On June 11, the inaugural event recognizing individuals who have created a planned gift or a bequest for the School featured a keynote address by 1913 Society Chair Barry Bloom, Harvard University Distinguished Service Professor and Joan L. and Julius H. Jacobson Professor of Public Health. Bloom discussed investing in the School through legacy giving to help effect cures for and solutions to major health problems, including infectious diseases such as Ebola and tuberculosis. Society members Stephen Kay, AB ’56, MBA ’58, and Michael Voligny offered opening remarks.

Karen Lee Sobol, AB ’70, MAR ’74, (left), with William Hsiao, MPA ’72, PhD ’82, K.T. Li Research Professor of Economics.

Stephen Kay, AB ’56, MBA ’58.

Lucian Leape, MD ’59, adjunct professor of health policy (left), with Maurice Keenan, MPH ’77.

Richard Menschel
Carnegie Medal of Philanthropy

Longtime supporter of the School Richard Menschel, MBA ’59, was honored along with his brother Robert with a Carnegie Medal of Philanthropy. They were among eight recipients recognized by Carnegie Corporation of New York, and the other members of the Carnegie family of institutions, for visionary philanthropy embodying the spirit of Andrew Carnegie.

For more than 20 years, Menschel and his wife, Ronay, have made the School one of their top philanthropic priorities. Their support includes a $12.5 million gift to establish the Transforming Public Health Education Initiative, which helped the School update its master’s degree program for health professionals and create a new doctor of public health degree.

Richard Menschel, MBA ’59 (left), with former Harvard Chan Dean Harvey Fineberg, AB ’67, MD ’71, MPP ’72, PhD ’80; and Ronay Menschel.
Individual Donors

Individual donors provide critical support toward the Harvard Chan School’s mission of promoting powerful ideas for a healthier world. Gifts of all levels from alumni and friends provide crucial support for student scholarships, faculty research initiatives, innovations in educational strategies, equipment purchases, the renovation and upgrade of our facilities, and more. The following list recognizes individuals who made contributions, including gifts, pledges, and payments on prior-year pledges, of $250 and above.

$10,000,000+
Anonymous

$5,000,000–$9,999,999
Theo A. Kolokotrones
Wendy E. Kolokotrones

$1,000,000–$4,999,999
Anonymous (2)
Eric Clow
Fong W. Clow, SM ’86, SD ’89
Edward Crocker Green, PD ’02
Mala Gaonkar *
Matthew McLennan
Monika McLennan
Richard L. Menschel *
Ronay A. Menschel *
Katharine E. Morley, MPH ’10
Michael G. Morley, SM ’11
Deborah Rose, SM ’75 *
The Ülker Family
J. Frederick Weintz, Jr. *

$500,000–$999,999
Anonymous
Judith Benfari
Robert C. Benfari, SM ’67
Ellen Feldberg Gordon
John C. Hansen, Jr.
Estate of Theodore Montgomery, MPH ’55
Ben Tao
Katie Vogelheim
Jeffrey C. Walker

$250,000–$499,999
Anonymous
Congrong Chen
Jeffrey A. Choney
Pamela Dippel Choney
Albina du Boisrouvray
E. Robert Fernholz
Luisa T. Fernholz

$100,000–$249,999
Anonymous
Amy M. Brakeman
Ed Brakeman
Katherine States Burke
T. R. Burke
Judith Carson
Russell L. Carson
Lawrence H. Cohn
Roberta L. Cohn
Jim Cunningham
Evelyn Byrd Donatelli
Mike M. Donatelli
Domenic J. Ferrante
Molly Ferrante
Harvey V. Fineberg *
Sarah B. Glickenhau
Seth M. Glickenhau
Gustave M. Hauser
Mary Reveille Paci *
Pattharawalai Phichalai, MPH ’14
Claire B. Stampfer
Meir J. Stampfer, MPH ’80, DPH ’85
Dianne W. Stuart
James M. Stuart
Antonia Trichopoulos
Suzanne C. Walker
Nathalie Wong
Stephen R. Wong

$50,000–$99,999
Joel Altstein
Peter W. Choo, MPH ’91,
DPH ’96 *
Stephanie S. Choo *
Prudence Siltor Crozier *
William M. Crozier, Jr. *
James B. Crystal
Michael S. Feldberg *
Julie Y. Hahn
Bayard Henry *
Julie E. Henry, MPH ’91 *
Nan M. Laird
Mary Reveille Paci *
Pattharawalai Phichalai, MPH ’14
Claire B. Stampfer
Meir J. Stampfer, MPH ’80, DPH ’85
Dianne W. Stuart
James M. Stuart
Antonia Trichopoulos
Suzanne C. Walker
Nathalie Wong
Stephen R. Wong

$25,000–$49,999
Raymond G. Chambers
Barrie M. Damson *
Samuel A. Forman, MPH ’77,
SM ’80 *
Yulika E. Forman
Joyce C. Gibson, SM ’72, SD ’74
Steven H. Gibson
Ralph M. James
Stephen B. Kay
Nyla Medlock
Yoko Murai

$10,000–$24,999
Anonymous (6)
Christine Allen *
Lynne Berkowitz
Roger S. Berkowitz
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Phyllis D. Collins *
Deirdre P. Connelly
Kenneth H. Cooper, MPH ’62 *
Millie Cooper
Howard Cox *
Joan P. Curhan *
Ronald C. Curhan *
George Danis
Stuart Davies
Estate of Harriet Epstein
Barbara Field
Molly Finn *
Dorothy J. Ganick, SM ’67 *
David G. Golden

* individuals who have made a gift for five or more consecutive years
† deceased

continued
My late wife, Betsy, and I have been passionate about supporting higher education—and in particular, humanitarian causes—for many years. We’ve seen the importance of this work firsthand through our son Eric, a doctor who spent three years working with AmeriCares, a global disaster relief organization. He’s gone on 51 relief missions to 20 countries.

“Our support for the Harvard Chan School was not something we had planned. Instead, it unfolded organically after Betsy met Dr. Jennifer Leaning. We were inspired by Dr. Leaning’s work and subsequently provided seed money for the FXB Program on Complex Humanitarian Emergencies. Later, our funding helped establish the Harvard Humanitarian Initiative. This award in Betsy’s memory will support faculty members like Dr. Leaning who help train future humanitarian leaders—and it will honor humanitarian visionaries who make their greatest impact during times of crisis.”

J. FREDERICK WEINTZ, JR., MBA ’51

—WEINTZ’S GIFT WILL ESTABLISH
THE ELISABETH B. WEINTZ HUMANITARIAN AWARD
Hai Meng
Shaw McDermott
Hope C. McDermott
Michael McCarten, MPH '99
Maria E. Mazorra, SM '79 *
Carol I. Master, SM '81, DPH '89 *
Nancy J. Marr, SM '89, DPH '87 *
JoAnn E. Manson, MPH '84,
Jennifer Mammen
Peter L. Malkin *
Isabel W. Malkin *
Xihong Lin
Elizabeth K. Liao *
Chuanyuan Li, SD '93
Kathleen S. Lehmann
John W. Lehmann, MPH '88
Jay Won Lee, MPH '07
Hee Ja P. Lee
Lucian L. Leape *
Amy A. Adome, MPH '04
Theodor Abelin, MPH '63 *
Amy A. Adome, MPH '04
Continued
The Harvard T.H. Chan School will always have a special place in our hearts because we attended at a really formative time in our lives. Leslie and I were both fortunate enough to attend the School on fellowships, and we would like to do our part in helping future students have that same opportunity. We are strong supporters of public health—both at the Harvard Chan School and other institutions. I worked for many years at the U.S. Centers for Disease Control and Prevention, and I recognize the importance of the School’s mission. Public health is a direct, cost-effective way to make the world a healthier place.”

—DR. PHILIP GRAITCER, MPH ’72

The sense of community at the Harvard Chan School has always been impressive. We had our first daughter while we were studying at the School, and our obstetrician was actually a professor in the Department of Global Health and Population.

Like Philip, I’m committed to supporting public health, but I also believe in supporting education in general—I’ve devoted my career to public education, and I’m passionate about the School’s work in the area of maternal health. I hope that our gifts, in addition to helping students, will also help support the School’s faculty, who are such an important part of this incredible community.”

—LESLIE GRAITCER, SM ’72

Leslie and Philip Graitcer are Yearly Contributors to the Annual Fund.
LESLIE AND PHILIP GRAITCER ARE YEARLY CONTRIBUTORS TO THE ANNUAL FUND.

—LESLIE GRAITCER, SM '72

Winter 2016
Institutional Partnerships

The School gratefully acknowledges the invaluable support of its many corporate, foundation, and institutional donors and sponsors. Through their engagement, these organizations are helping to improve the health of people around the world. The following lists recognize organizations that provided gifts, pledges, payments on prior year pledges, and grants of $1,000 and above, or made matching gifts to the School.

$350,000,000+
Morningside Foundation

$10,000,000+
Bill & Melinda Gates Foundation *

$5,000,000+
Anonymous

$1,000,000–$4,999,999
Anonymous (2)
Bloomberg Philanthropies
Blue Cross Blue Shield of Massachusetts
Charina Endowment Fund, Inc. *
The Children’s Investment Fund Foundation
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American Heart Association, Inc. *
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John D. and Catherine T. MacArthur Foundation *
JDIF International
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Ambrose Monell Foundation *
New Venture Fund
Peterson Center on Healthcare Rx Foundation
United Technologies Corp.
The William & Flora Hewlett Foundation

$25,000–$499,999
Aetna Foundation, Inc.
American Diabetes Association *
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Association of American Medical Colleges
Clinton Foundation HIV/AIDS Initiative
Ellison Medical Foundation *
The Joyce Foundation
W. K. Kellogg Foundation
National Multiple Sclerosis Society
PATH
Pew Charitable Trusts
Prostate Cancer Foundation
Risk Management Foundation
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$100,000–$249,999
Anonymous (3)
43 for Kids Foundation
ASISA
Breast Cancer Research Foundation *
California Walnut Commission
Cure Alzheimer’s Fund
Flight Attendant Medical Research Institute
Footwear Association Charity Event, Inc. *
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Tuberous Sclerosis Alliance
World Health Organization

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Andrew McDonough B+ Foundation
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Cronin’s and Colitis Foundation of America
Damon Runyon Cancer Research Foundation
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Nunatsiavut Government
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Pharmaceutical Research and Manufacturers of America
PriceTravel Holding
Produce for Better Health Foundation
Project Bread - The Walk for Hunger, Inc.
Revolution Foods
Ophelia Fund
Rothberg Family Charitable Foundation for Children’s Disease
The Canary Fund of RSF Social Finance
The green building movement has made great strides in energy and water savings. But energy represents just 1 percent of a building’s true operating cost; 90 percent of the cost comes from the salaries and benefits of the people inside the building. While there is extensive research on the influence of common indoor pollutants on workers’ health, fewer studies have investigated the effects on cognitive function and decision-making performance. To discover whether green buildings can improve people’s productivity, we needed new, cutting-edge research. That’s why we turned to the Harvard Chan School. United Technologies is supporting research by Joe Allen and Jack Spengler that fills important knowledge gaps about the relationship between green buildings and their occupants.

“From our unique perspective as the world’s largest provider of building technologies, we’ve seen demand for this kind of data from building designers for years. We know that better data will drive better decisions for buildings. The results of the research by Drs. Allen and Spengler suggest that a healthier indoor environment significantly improves employees’ cognitive function and decision-making performance, particularly in crisis response, information usage, and strategy.

“This research and its subsequent field tests have the potential to accelerate the global green movement, proving that green buildings provide important benefits beyond increased energy and water efficiency. We are currently working with the investigators on a second phase of this research, which takes the study out of a lab and tests the findings in existing buildings across a variety of climates in the U.S. We expect to have results within a year.”

—JOHN MANDYCK, CHIEF SUSTAINABILITY OFFICER, UNITED TECHNOLOGIES CORP.
1913 Society

The 1913 Society honors individuals who have created a planned gift or a bequest for the Harvard T.H. Chan School of Public Health. In addition to commemorating the year the School was founded, the 1913 Society recognizes the vital role our supporters have played over the past century and the role they play today in ensuring the School’s continued success.

Anonymous (12)
Donald L. Abramowitz, SM ’82
Joanne H. Allport, MPH ’87
Nelson K. Aweh III
Joan R. Baer and Arthur Bugs Baer
Amy C. Barkin, MPH ’76
Judith Benfari and Robert C. Benfari, SM ’67
Terry M. Bennett, MPH ’69
Eugene P. Berg, Jr.
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William A. Burgess, SM ’51
Annette B. Burke and Joseph A. Burke, SM ’72
Deanna L. Byck, SD ’98
Howard E. Cheney, SM ’60
Fong W. Clow, SM ’86, SD ’89, and Eric Clow
Prudence Silvor Crozier and William M. Crozier, Jr.
Joan P. Curhan
Joan Selig Damson and Barrie M. Damson
Mary Kerr Donaldson
Mike and Evelyn Donatelli
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Sumner L. Feldberg
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Niki Friedberg and A. Alan Friedberg
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Olive W. Holmes
Lilli Schwenk Horning
Robin C. Herman and Paul F. Horvitz
Howard Hu, MPH ’82, SM ’86, SD ’90
George B. Hutchinson, Jr., MPH ’60
Joan L. Jacobson and Julius H. Jacobson II
Nancy Johnson and G. Timothy Johnson, MPH ’76
Nancy Elliott and Paul T. Johnston
Marion A. Jordan, SM ’77
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Dyann F. Wirth and Peter K. Wirth
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Anthony J. Zangara, MPH ’62

† deceased
The School has one of the most meaningful and positive missions of all the professional schools at Harvard University. Students come from all over the world and many have huge financial burdens, so I hope that our gift will allow them to focus on their studies. I find it admirable that an individual would travel so far to go to school and to really work hard to make the world a better place. I particularly favor the School’s focus on women’s health throughout the world and especially in underdeveloped countries. Since I cannot be on the front lines, this is my way of contributing to excellence in learning at the Harvard T.H. Chan School of Public Health.”

—JUDITH BENFARI

I taught at the School from 1967 until 1994. During my early years, Harvard President Nathan Pusey would come over to greet the new students and faculty, and he always said that the School of Public Health had the most positive and lasting effect of any of the schools at Harvard. That stuck with me and gave me a great sense of satisfaction. It also gives me satisfaction to support students at the School, especially those in behavioral sciences and intervention programs, which were my specialties. Harvard Chan students have a different sense of community—an understanding of what it means to contribute through cooperation and collaboration.”

—ROBERT C. BENFARI, SM ’67

The Benfaris are members of the 1913 Society. Their gift will establish the Judith and Robert C. Benfari Fellowship.
Named Fellowships and Financial Aid Funds

Financial aid for students remains the greatest fundraising priority for Harvard T.H. Chan School of Public Health. The School is extremely grateful to our donors who have established and contributed to the following named fellowships and financial aid funds, which serve as leadership examples for student financial support. Funds created in fiscal year 2015 are highlighted in bold.

Helen Thayer Adams Scholarship
Andelot Scholarship
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Barry R. and Irene Tilenius Bloom Fellowship
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Joseph D. Brain Fellowship in Environmental Health
Wanda Lane Buck Fellowship
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Dillon Family Fellowship in Population and Development Studies
Dillon Family Fellowship in Population and International Health
Mike M. and Evelyn B. Donatelli Fellowship
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Myron E. Essex Fellowship for Students from Africa
Sumner L. Feldberg Fellowship
The Benjamin Greely Ferris, Jr. Fellowship in Environmental Epidemiology
Harvard-Thai Ministry of Public Health Fellowship
Harvey V. Fineberg Fellowship in Cancer Prevention
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Julie E. Henry Student Support Fund for Maternal and Child Health
Hesed Africa Scholarship
George B. Hutchinson Financial Aid Fund
Nan Laird Financial Aid Fund
Leadership Incubator Fund
A.G. Leventis Fellowship for Nigerian Students
Bernard Lown Fund in Cardiovascular Health
Lukitsh Family Fellowship
Karuna Majumdar Fellowship Fund
Walter F. Mazzone Financial Aid Fund
The Jere Mead Fellowship
Nyla Medlock Occupational and Environmental Medicine Fellowship
McLennan Family Fellowship
Joseph M. Miller Financial Aid Fund
Dr. Theodore A. Montgomery Scholarship
Dr. Katharine E. Morley and Dr. Michael G. Morley Endowed Fellowship
John Bruce Nichols and Margaret L. North Nichols Memorial Scholarship
Nutrition Fellowship (in honor of Dr. Walter Willett)
Paci Family Fellowship Fund in Public Health
David H. Peipers Fellowship
Margaret D. Penrose Scholarship
Pharmacoepidemiology Scholarship
Muriel K. and David R. Pokross and Joan P. and Ronald C. Curhan Doctoral Student Support Fund in Nutrition
The Prajna Chair’s Scholarship in Public Health Nutrition
Donald and Sue Pritzker Scholarship
Bernard and Gloria Salick Fellowship in Public Health
Joel E. and Joan L. Smilow Fellowship
Leonid Sergius Snegireff Fellowship
Mortimer Spiegelman Fellowship in Demographic Studies
Irene M. and Fredrick J. Stare Nutrition Education Fund
John F. and Virginia B. Taplin Fellowship
Dimitrios Trichopoulos Memorial Fund
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Gohar and Valad Valadian Fund
Wei Family Biostatistical Fellowship Fund
Thomas H. Weller Fellowship
Dr. Charles F. Wilinsky Award Fund
Edwin Bidwell Wilson Memorial Fund
Herbert S. Winokur, Jr. Fellowship in Public Health
I believe that as a global citizen, it is my responsibility to give back. We established the Congrong Family Fellowship Fund to provide much-needed financial aid to graduate students from China. Its purpose is to give talented people a platform and an opportunity so they will not be limited by economic conditions.

“I believe in the long payback period of social service, and I have seen firsthand the impact of the Harvard T.H. Chan School of Public Health. William Hsiao, K.T. Li Professor of Economics, helped China build an innovative, low-cost medical insurance pilot system, which has helped expand health care coverage to 90 percent of the country’s population. I want our Fellowship students to have this kind of impact, to become China’s public health scholars—experts and managers who apply their knowledge to support public health undertakings that will promote health, prevent disease, and prolong lives.”

—CONGRONG CHEN

CONGRONG’S GIFT ESTABLISHED THE CONGRONG FAMILY FELLOWSHIP.

Yang Fang, DrPH ‘18 (left), Congrong Family Fellowship recipient, with Jason Zhao, son of Congrong Chen, Harvard College class of 2018, at a recent luncheon at Harvard Chan.
n working with former dean Julio Frenk ever since the Dean’s Trip to Mexico in March 2010, I have found him to be a visionary leader who inspires and encourages others to take the leap and do great things themselves.

“After reviewing the degrees previously awarded by the School, Julio decided to better align them with those of other schools of public health by replacing the ScD with the PhD and by adding a new DrPH degree that emphasizes public health practice. He also established the unique Ministerial Leadership in Health Program, through which ministers of health and finance from 40 countries have already come to the School to share solutions to mutual problems and to participate in intensive training programs with senior faculty.

“To honor Julio and to help ensure that his work continues at the School, I support the Julio Frenk Legacy Fund with contributions to two of his signature initiatives: the Julio Frenk Doctor of Public Health Fellowship Fund, which provides financial aid for students of the DrPH degree, and the Julio Frenk Fund for Ministerial Leadership in Health, which helps continue that program.

“Contributing to these funds is one way I can show my support for Julio’s initiatives and also express my confidence in the depth of the current administration, the faculty, and the deans of the future.”

—DEBORAH ROSE, SM ’75
MEMBER, LEADERSHIP COUNCIL
Tribute Gifts

Tribute gifts offer a meaningful way to advance the work of the School while also recognizing a beloved family member, friend, or colleague. Individuals who were honored or memorialized with a tribute gift in fiscal year 2015 are listed below.

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Barry R. Bloom
Joseph D. Brain, SM ’63, SD ’66
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Brian MacMahon, SM ’53
Edward S. Murray
Dimitrios V. Trichopoulos, SM ’68
Elizabeth M. Whelan, SM ’68
Marvin Zelen

Nan Laird, PhD ’75, the Harvey V. Fineberg Research Professor of Public Health, was among those honored with tribute gifts this year. She is pictured here with her husband, Joel Altstein, at her retirement celebration on May 1, 2015.
Faculty, Staff, and Faculty Emeriti

We thank all members of our Harvard Chan community for their work to make a healthier world.
The following list recognizes our faculty and staff who made gifts of any amount to support the School.

Anonymous (2)
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Ellen M. Zane *

* individuals who have made a gift for five or more consecutive years
My wife, Claire, and I contributed to the Dimitrios Trichopoulos Fund, which is designed to support students in the Department of Epidemiology, in memory of Dimitrios. He had an enormous impact on me as both a teacher and a friend, and he mentored a whole generation of scholars across the globe. It was a joy and a privilege to be able to help get that fund started to serve as a memorial for Dimitrios and to support students the way I was supported. Many former students have gone on to become faculty here and all over the world. We need to nurture that next generation of teachers and scholars.

“I’m happy to say that the second fund we supported was my idea. Claire and I made our contribution to start a nutrition fellowship because of my deep respect for Walter Willett. This coming year, Walter will have completed his first quarter-century as chair of the Department of Nutrition. He has done what we all come to the School to do: change the world. So this seemed like a great way to express our gratitude and honor him with the sort of gift that is closest to his heart, which is supporting students for their training.

“For me it’s very personal. I benefited so much from my years here as a student and as a faculty member, and I’m in a position to give back. Giving is a way of being engaged in the whole enterprise. You’re buying in, in a very real sense, to the ideals and the values that the School seeks to exemplify—helping the world become a better place.”

—MEIR J. STAMPFER, MPH ’80, DPH ’85 PROFESSOR OF EPIDEMIOLOGY AND NUTRITION, PICTURED WITH CLAIRE STAMPFER
believe that we are in a unique and exciting moment in public health and a pivotal moment in time for our School, where we have a confluence of three remarkable factors: seasoned, outstanding faculty; the brightest public health students in the world; and a revolution in technology that can help improve public health. Mobile technology, big data, and innovations in medical startup companies are revolutionizing the way we approach patient care, community care, and global health care.

“I want to be very hands-on, not only as an alumnus and as an ophthalmologist on the front lines of prevention of blindness, but also in my philanthropic endeavors—what I call catalyst philanthropy. It would be wonderful to have more alumni be hands-on and also realize that they can influence change for the better now—in this unique moment—rather than wait for the future. As alumni, we have a responsibility to be ambassadors for our School, no matter where we are in the world. Being a catalyst means using our bonds to the School to help promote its work here and abroad. Even if you can’t commit to a specific project, be an ambassador. Promote the global good. Promote our great School’s name. Promote our incredible faculty and our amazing students.”

—SRINIVAS M. SASTRY, MPH ’90
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The School is tremendously grateful to our many volunteers who, in partnership with faculty members and staff, are helping to advance the field of public health. We thank the following individuals for their commitment to the Harvard Chan School and their service as volunteers. The members listed are those active at the time of publication.

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IT PAYS TO GIVE AWAY YOUR 401(k)

For physician Hasi Majumdar Venkatachalam, MPH ’68, making a bequest to the Harvard T.H. Chan School of Public Health through a 401(k) beneficiary transfer was a clear choice. With this generous contribution, she avoids federal, state, and local income taxes on the plan and leaves a legacy that will support future scholars at the Harvard Chan School.

To honor the memory of her mother, Dr. Venkatachalam created the Karuna Majumdar Fellowship Fund with a 401(k) beneficiary designation, which will be part of an endowment to provide tuition and fees in perpetuity to Harvard Chan students.

“I owe a lot to Harvard. It was a wonderful and very rich experience for me. I hope this fellowship will help deserving candidates with limited resources attend the Harvard Chan School and put the knowledge they gain to good use in service to others.”

—Hasi Majumdar Venkatachalam, MPH ’68

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<td>January 25–29 (Part 1) and May 2–6 (Part 2); Leadership Strategies for Information Technology in Health Care</td>
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<td>April 11–15; Radiation Safety Officer Training for Laboratory Professionals</td>
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