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ALSO INSIDE

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Cancer looms in the developing world



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The Association of Schools of Public Health recently embarked on a campaign entitled "This Is Public Health," because many people outside the profession don't understand what public health is and how it affects their daily lives. In this issue of the *Review*, we use the campaign logo and accompanying text so readers can easily share with friends what public health's mission is and how HSPH contributes to the field. To learn more about the "This Is Public Health" campaign, go to www.thisispublichealth.org/.

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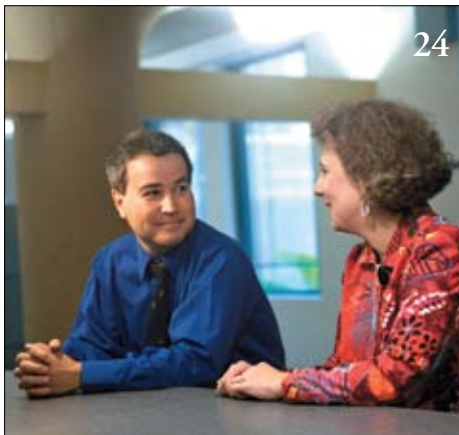
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Image credits: top left, Sean McCabe; top right, Tony Rinaldo; all others, Kent Dayton/HSPH

THE SHADOW EPIDEMIC

Malignancies are on the rise in developing nations.

*by Julio Frenk, MD, MPH, PhD
Dean, Harvard School of Public Health*

While it's well known that cancer is a leading cause of death and disability worldwide, what is less recognized and understood is the significant growth of cancer in the developing world. Only two decades ago, the percentage of new cases was similar for developed and developing regions. Today, 55 percent of new cases arise in developing nations—a figure that could reach 60 percent by 2020 and 70 percent by 2050.

Unless a shift in mindset occurs—with those committed to global health investing more in cancer information, prevention, screening, and treatment—the number of new cancer cases worldwide will grow from around 12 million today to 15 million in 2020, with much of that growth occurring in developing nations.

According to the most recent World Health Organization (WHO) estimates, in 2004 there were 7.4 million cancer deaths worldwide, representing around 13 percent of total deaths. More than 70 percent of those deaths occurred in low- and middle-income countries.

PUBLIC HEALTH SUCCESSES SET STAGE
Why is cancer increasing in the developing world?

Ironically, successes in other realms of public health are partly behind this shift. Gains made against infectious diseases and increases in child survival beyond age 5 now make it possible for people in developing countries to live long enough to suffer the noncommunicable diseases associated with age. Yet infectious diseases remain serious threats, creating a double burden of ill health.

In low- and middle-income countries, the high incidence of malignant tumors related to communicable diseases, such as the human papilloma virus (HPV), reflects a dearth of reliable systems for disease control and screening services. By contrast, the increasing incidence of lung, breast, and colorectal cancer is largely the result of demographic and lifestyle changes, including longer life expectancy and accelerated urbanization, which in turn leads to reproductive patterns (pregnancy at older ages, low prevalence of breastfeeding) and lifestyles (tobacco consumption, high calorie intake, alcohol abuse) associated with several forms of cancer.

A COMPREHENSIVE VIEW OF GLOBAL HEALTH

The global health agenda remains focused primarily on communicable diseases and the traditional identification of international health with infectious disease control. We need, however, to adopt a more comprehensive view. First, the separation between communicable and noncommunicable diseases is not as clear-cut as it was once thought. According to WHO, one-fifth of all cancers worldwide are caused by chronic infections produced

by agents such as HIV, HPV, hepatitis B virus, and *Helicobacter pylori*.

In addition, noncommunicable diseases and injuries are increasingly prevalent in the developing world. Problems only of the poor—such as common infections, undernutrition, and maternal deaths—are no longer the only problems of the poor. Impoverished groups also suffer the highest rates of many chronic ailments, such as cardiovascular diseases, cancer, and mental disorders. “Healthwise, the Northern Hemisphere and the Southern

Hemisphere outside of sub-Saharan Africa are more alike than different,” says Barry R. Bloom, former Harvard School of Public Health dean.

FALSE DILEMMA CREATES BARRIERS

Today’s alarming cancer statistics stand in stark contrast to an equally alarming lack of awareness, both locally and globally. Sadly, a false dilemma has created barriers to action. Screening procedures for cancer are considered too difficult and costly to implement. Some experts

continued

STATISTICS PAINT A CHANGING CANCER PICTURE

Women

- Breast, cervical, stomach, lung, and colorectal cancers are the most common cancers among women in developing nations.
- Breast cancer now surpasses cervical cancer as the number one cause of cancer-related deaths in all but the poorest nations of the world. Developing countries account for 45 percent of the 1 million new cases of breast cancer diagnosed each year, and 55 percent of deaths.
- In Latin America, two countries, Uruguay (83 per 100,000 women) and Argentina (75 per 100,000 women), have already reached breast cancer incidence rates similar to those of Canada (96 per 100,000 women), which are among the highest in the world.
- Cervical cancer, now a rare disease in rich nations, causes more than 200,000 deaths annually in developing countries.

Men

- Lung, stomach, liver, esophageal, and colorectal cancers are the most common cancers in men in developing nations.
- While rich countries are witnessing a decline in new cases of lung cancer (a result of broad antismoking campaigns), low- and middle-income nations—the focus of billion-dollar tobacco industry publicity campaigns—are experiencing the opposite trend.
- Developing countries’ share of new lung cancer cases increased from around 30 percent in 1980 to more than 50 percent in 2007.
- In China alone, smoking prevalence in the general population is 31 percent. In adult Chinese men, smoking prevalence may be reaching 70 percent.
- Liver cancer is also increasing among men in poor countries. More than 80 percent of the new cases of this disease occur in developing nations, with sub-Saharan Africa and Southeast Asia showing the highest rates worldwide. It comes as no surprise to learn that in these same regions, hepatitis B virus infection, which affects the liver, is endemic.

Statistics: From Disease Control Priorities Project (DCPP), the American Cancer Society and the World Health Organization. Latin America breast cancer statistics from paper entitled “Tendencias del cáncer de mama en América Latina y el Caribe” by Rafael Lozano and colleagues [*Salud Publica de México* 2009;51(supplement 2):S147-S156]. Tobacco consumption in China prevalence statistics from paper entitled “Chinese physicians and their smoking knowledge, attitudes, and practices” by Yuan Jiang and colleagues [*American Journal of Preventive Medicine* 2007;33(1):15-22]. Breast cancer in developing countries statistic from Porter P. “Westernizing Women’s Risk? Breast Cancer in Lower-Income Countries” [*The New England Journal of Medicine*, 2008: 358;213-216].

argue that it is unethical to screen, because treatment is unaffordable for the vast majority of the population. Finally, observers ask: Why tackle cancer when so many are ill and dying from communicable diseases and the backlog associated with underdevelopment?

In middle-income countries, access to screening and treatment for cancer tends to be limited to affluent populations and to the minority of insured persons. Even in upper-middle-income countries, where noncommunicable diseases now account for the largest proportion of the burden of disease, cancer rarely appears at the top of the health agenda.

Why is cancer absent from the global public health agenda?

To address the health needs of the developing world, we need health reforms that take into account the reality of the disease burden these nations face. In the case of the recent Mexican health reform, for example, two separate financial funds were created—one to address catastrophic health problems, including cancer in children and cervical and breast cancer in adults, and another for community health encompassing prevention and screening procedures for noncommunicable diseases, including several forms of cancer.

SPREADING INFORMATION, CHANGING ATTITUDES

Information will play a key role—in risk assessment, provision of services, training, academic research, and policy implementation. Information will also be critical to confront the cultural resistance that stymies the fight against cancer. In many developing countries, it is not uncommon for women with breast cancer to be considered diminished in their femininity. Concerned about the possibility of being abandoned by their



BREAST CANCER: A PERSONAL STORY

The recent recognition of breast cancer as an “unforeseen public health priority” in Mexico and many parts of the less-developed world formed the basis of an April 14 event hosted by Dean Julio Frenk and his wife, Dr. Felicia Marie Knaul, a Harvard-trained economist who was diagnosed with breast cancer in 2007 in Mexico.

One way in which she has coped with her diagnosis, Dr. Knaul says, has been by plunging into research and advocacy on breast cancer, with the active support of her husband, who is the former minister of health in Mexico. Together, they have helped shed new light on the previously unrecognized toll of breast cancer among the poor in Mexico and other less-developed countries.

Knaul, born in Canada, said that she and Frenk had believed the common public health myth that breast cancer is primarily a disease of wealthy women and developed countries. In the developing world, cervical cancer has garnered much more attention because of a long history of causing death and disability, particularly among the poor.

But this assumption was shattered when Knaul and others dug into the statistics and found that cervical cancer mortality had peaked in 1990, declining rapidly thereafter due in large part to improved screening and treatment, while deaths from breast cancer have steadily risen.

“In fact, breast cancer is striking women at all socioeconomic levels in all developing and, especially, middle-income countries,” said Knaul, senior economist at the Mexican Health Foundation and founder of “Cáncer de mama: Tómatelo a Pecho” (Breast Cancer: Take it to Heart). Dr. Knaul was named Director of the Harvard Global Equity Initiative and Associate Professor of Medicine and Social Medicine at Harvard Medical School this spring.

See the webcast of the April event at:

www.hsph.harvard.edu/administrative-offices/deans-office/panels-on-public-health-priorities/

spouses when discovered ill, many decide not to look for care—or, if they do, to reject proper treatment.

Fortunately, governments in developing nations are becoming more aware of the cancer threat. In 2005, the 58th World Health Assembly passed a resolu-

tion calling on member states to intensify action against the disease by developing and reinforcing cancer control programs. Efforts to support research on cancer in developing countries, though still meager, are also increasing. A major breakthrough was the approval of a \$50 million grant from the Bill & Melinda Gates Foundation to create the Alliance for Cervical Cancer Prevention.

Breast cancer is also being recognized as a major public health challenge. Recent efforts include the creation, by the Fred Hutchinson Cancer Research Center with support from Susan G. Komen for the Cure,

of the Breast Health Global Initiative in 2002. Working with Dana-Farber and Brigham and Women's Hospital, HSPH is also highlighting breast cancer in developing countries as a challenge to women's health and global equity.

CANCER BELONGS IN THE GLOBAL HEALTH AGENDA

To place cancer on the global health agenda, we must expand the United Nations' Millennium Development Goals to include health targets related to noncommunicable diseases common in low- and middle-income countries, such as hypertension, diabetes, and the most prevalent malignancies. We also have unprecedented opportunities in today's five revolutions in health: life sciences, telecommunications, systems thinking, knowledge management, and human rights.

In this spirit, it would be useful to invoke the words of the Nobel laureate Amartya Sen at the International Symposium on Human Security, held in Tokyo in 2000:

"We live in a world that is not only full of dangers and threats, but

also one where the nature of the adversities is better understood, the scientific advances are more firm, and economic and social assets that can counter these menaces are more extensive. Not only do we have more problems to face, we also have more opportunities to deal with them."¹

Let this keen awareness of the challenges, tempered by the realistic optimism offered by current opportunities, inspire the crucial work needed to face the global epidemic of cancer.

This article is based on remarks made by Dean Frenk at the Dana-Farber/Harvard Cancer Center on April 7, 2009. Octavio Gómez-Dantés provided valuable input.



SPECIAL NOVEMBER EVENT ON BREAST CANCER

A special three-day program entitled "Breast Cancer in the Developing World: Meeting the Unforeseen Challenge to Women, Health, and Equity"—sponsored by the Harvard Global Equity Initiative, Dana-Farber Cancer Institute, and HSPH, among others—will be held November 3–5 at Dana-Farber's Jimmy Fund Auditorium and Harvard Medical School's Joseph B. Martin Conference Center. Please visit the conference website for complete venue and registration information. This event is free and open to the public.

www.hsph.harvard.edu/breastandhealth/

¹ Amartya Sen. "Why human security." Unpublished text presented at the International Symposium on Human Security in Tokyo, July 28, 2000.

Mr. Water in His Element



JOHN BRISCOE OFFERS BOLD, UNORTHODOX IDEAS FOR MANAGING SCARCE WATER IN THE DEVELOPING WORLD.

What do people in developing nations understand about water that people in wealthy nations do not?

"They understand the absence of it," says John Briscoe, newly appointed Professor of the Practice of Environmental Health at HSPH. If it doesn't rain, women who haul water for their families must walk vast distances to fetch it. Without rain, the lights go out in hydropowered locales. Lack of sanitary facilities in schools deters girls from an education. Indian farmers unable to drill into dwindling aquifers even commit suicide. "Water is not taken for granted," Briscoe says. "People live with insecurity at every turn."

That insecurity has preoccupied him for nearly four decades—first in his native South Africa, then in a remote village in Bangladesh and in newly independent Mozambique, then as a teacher at the University of North Carolina and as a policymaker and practitioner at the World Bank, and now at Harvard (where he holds a joint appointment with the School of Engineering and Applied Sciences, as the Gordon McKay Professor of Environmental Engineering). Briscoe has studied water from every conceivable angle: how it's captured, contaminated, diverted, dammed, piped, poeticized, regulated, ritualized, squandered, sanitized, fished, and fought over.

**THIS IS PUBLIC
HEALTH.**

Clean water is a timeless defense against death and disease. As safe and reliable water runs out in impoverished nations, experts must find ways to reverse the trend.

continued



The Itaipu hydroelectric power station in Brazil is the largest in the world.

Over a long career focused on the developing world, he has taken stands that are politically unfashionable. Pointing out, for example, that the United States and Europe have developed 80 percent of their hydro-power potential, but Africa only 2 percent, he has strongly defended the need for large dams in poor countries. And while elected leaders have praised his support for these investments, critics in nongovernmental organizations (NGOs) in the West counter that such projects wreak both environmental and human devastation. Despite such sharp disagreements, Briscoe has gained the reputation of being one of the world's most knowledgeable experts on water management.

"To a lot of economists, he's Mr. Water: the most far-sighted,

There is a "profound moral hazard," Briscoe says, when rich countries dictate to developing nations what services they can and cannot have.

thoughtful, deeply thinking person in the field," says former HSPH Dean Barry R. Bloom, who brought Briscoe to the School from the World Bank in Brazil this past January. "You can make energy, though it may not always be economical. But you can't make water—you either have water or you don't. Bringing someone here who is not only knowledgeable theo-



John Briscoe (right) with Roger Revelle, co-founder of the Harvard Center for Population and Development Studies. Both Revelle and Briscoe worked on water issues in Pakistan, India, and Bangladesh during their careers.

Top, ©Julio Etchart/PANOS; bottom, Lincoln Chen; opposite, Getty Images

retically, but also about managing water resources, was the best bargain I could imagine.”

FROM RADICAL TO INSIDER

Briscoe’s conversation dashes in one direction, then another—a cascade of words, befitting his specialty. He went to school in Kimberley, South Africa, a diamond-mining city in the arid center of the country. Drought was a perpetual worry.

After earning his doctorate in environmental engineering at Harvard, Briscoe in 1976 found himself at the Cholera Research Laboratory in Fatepur, Bangladesh, doing field work in water demand, the health impact of water use on cholera, and the political economy of rural energy. He was, by his own

description, a “self-righteous young socialist-ecologist,” radicalized by having grown up under apartheid.

Briscoe’s experience in Fatepur—a village perched on an island where the braided branches of the world’s second-largest river system merge—altered his life course. Malnutrition and disease were rife. Life expectancy was less than 50 years. Briscoe, trained as an engineer, had been inexplicably hired as an epidemiologist.

Twenty-one years after Briscoe’s first stay in Fatepur, he returned to the village. The flood control and irrigation infrastructure that he had emphatically opposed in the late 1970s—on the grounds that it would harm poor people and the environment, and fell short of

true revolutionary change—was a reality. Far from being harmed, poor residents were better off in every way. The steady water supply had spurred a growing market for agricultural labor, which in turn lifted people out of destitution. The better-off villages could now buy hand pumps for drinking water and eat more nutritious food and install latrines. Women’s life expectancy had increased by two decades in just 20 years.

“They got three crops a year instead of one,” says Briscoe. “They became better off—and lo and behold, they didn’t die so often.” The dramatic progress vividly confirmed the view he had acquired after decades on development issues, namely that the

continued

Harvard Water Security Initiative



With growing threats to their water security, many nations are exploring new ways to safeguard drinking water and food, generate energy, and sustain economic growth. As part of this effort, the Harvard

Water Security Initiative is stimulating world-class research by faculty and students across many disciplines—including history, anthropology, climate change studies, environmental research, biology, business, government, engineering, and public health. Their goal: to enable policymakers to better understand today’s water threats and to mobilize a full range of tools for countering them. Under the leadership of Professor John Briscoe of HSPH and the School of

Engineering and Applied Sciences (SEAS), the University is initially forging collaborations among Harvard and Massachusetts Institute of Technology scientists and researchers in six countries: Australia, Brazil, Mexico, Pakistan, South Africa, and the United States. The Initiative is also engaging with a growing number of private companies involved with water issues. And partnerships are being established on specific water security issues with nations in which Harvard faculty and students are engaged. The Initiative’s mission is to build knowledge and train a new generation of scholars—undergraduates, doctoral students, post-docs, and young faculty—to address this looming global crisis. To aid this effort, HSPH and SEAS will be raising funds to support faculty, research, and scholarships for undergraduates and graduate students.

For more information, contact Monique Bertic in the HSPH Office for External Relations at mbertic@hsph.harvard.edu or (617) 384-8987.

basics—economic growth, infrastructure, and agriculture, with water critical to all—are incalculably important to people who are poor.

In 1988, Briscoe joined the World Bank. By 1996, he had risen to senior water advisor, responsible for overseeing a multibillion-dollar portfolio of water resources, irrigation, hydropower, sanitation, and environmental projects. Ironically, his appointment came at a time when the Bank had been scaling back large infrastructure investments. A strong proponent of such projects in

has strong professional and personal ties—starting with Pakistan, South Africa, Brazil, and Australia.

He will also open a “waterspace” in which faculty and students will bring various tools to the water security challenge. As he sees it, the expertise will flow in both directions—with politicians and policymakers from abroad teaching Harvard faculty about the political realities of change, and Harvard and its partner researchers boring down into knotty research questions.

The partnerships will focus

will happen when Himalayan glaciers recede and potentially disappear, feeding less water to the Indus River, the nation’s lifeline.

A third avenue will explore how to mitigate risk. It will include biologists (to propagate new varieties of crops more resistant to water stress), financiers (to craft better crop and rainfall insurance mechanisms), institutionalists (to study how institutions influence how water is shared and utilities regulated), and public health specialists (to protect populations as



4 Countries, 4 Water Challenges

INDIA Sacred Ganges River, severely polluted, needs cleanup

BRAZIL Amazon deforestation threatens farming, hydropower

PAKISTAN Receding Himalayan glacier cuts meltwater to vital Indus River

YEMEN Unregulated extraction has depleted groundwater in this arid nation

poor nations, Briscoe cut a controversial but successful path, culminating in what he terms “the best job in the Bank”: country director for Brazil. “There were many things I did not agree with in the Bank. But it was an environment in which you could argue for change, and sometimes achieve it. For me to be at that table with our partners in developing countries, rather than writing an article for a journal, was a tremendous privilege.”

HARVARD’S WATER MISSION

What lured Briscoe to Harvard was the chance to translate his frontline experience into useful interdisciplinary research and training. He plans to forge partnerships with countries where he

on a handful of themes. One is “context”—the history, anthropology and religion of a region—and how it shapes the way governments deal with water. India’s Ganges River, for example—repulsively polluted, despite its sacred status—has recently been targeted for clean-up by holy men in the pilgrimage site of Varanasi. “In a country where Ganga is a sacred river,” Briscoe says, “it turns out to be a very important mobilizing force.”

A second avenue of research will ask about external threats to a nation’s water supplies. Brazil’s leaders, for example, must understand how deforestation in the Amazon rainforest will alter the rains in the plains, which may in turn undercut farming and threaten the nation’s hydropower capacity. Pakistan’s leaders must anticipate what

environmental conditions change).

A fourth avenue will look at how water shortages will affect public health, the economy, the environment, and migration.

Briscoe foresees “general principles” arising from these research collaborations—widely applicable ideas such as how nations can provide incentives for people, farmers, and industry to use water more efficiently, or which crops work best in differing water conditions. The partnerships could also generate knowledge to help resolve international water issues—such as the threatened 1960 water-sharing treaty between India and Pakistan, which currently divides up between the two nations exclusive use of the western and eastern waters in

the Indus system of rivers. “Harvard has enormous brand recognition in those countries,” he says. “We could act as a neutral party, bringing ideas to the table, helping stimulate debate.”

VALUING WATER

To all these activities, Briscoe carries the conviction that management and infrastructure are equally essential. “Once you have something, you don’t value it,” he laments. “Nobody in the United States likes a dam, for example. But every one of us has 6,000 cubic meters of water in storage because of

their own imagined idea of how they would have developed if they hadn’t developed the way they had developed, but with the models that they now have. So California should never have had dams? It’s nonsense. And it’s saying to other countries: ‘We’re going to deny you exactly what we used to develop.’ That’s deeply resented and quite intellectually suspect.”

Early this year, Briscoe discussed water issues with administrators at a large philanthropic foundation: “They said, ‘Two billion people don’t have sanitation. This is a failure of the sani-

them,” says Cash. “John comes out of the world of trying to make something work. That involves not just engineering, but anthropology and economics and political science. Yes, he’s probably going to shake things up. Good. My guess is that, in the process of doing it, he will also have to defend his own positions.”

Briscoe relishes the intellectual give-and-take. Quoting the Harvard historian David Blackbourn’s recent book on land and water in Germany, he noted, “In water, any solutions are always provisional. There is no point



“They said, ‘Two billion people don’t have sanitation. This is a failure of the sanitation sector.’ I said, ‘Not really. To me, it’s a failure of economic prosperity.’”

—John Briscoe

dams. People here are worried that infrastructure in developing nations will have a negative impact on the environment. But try a blackout for a day. Try a couple weeks of blackout, and then see how you think about major power infrastructure.”

He concedes that apprehensions about environmental and social effects of dams “are valid and have to be addressed, mainly because affected people should be the first beneficiaries of any dam.” But there is a “profound moral hazard,” he adds, when rich countries dictate to developing nations what services they can and cannot have. The U.S. and Europe “are looking to

tation sector.’ I said, ‘Not really. To me, it’s a failure of economic prosperity. Because those two billion people also don’t have energy, transport, jobs, education. I mean, they’re *poor*. We have to address their problems of poverty and their demands and priorities—not impose what we think they should and should not have.”

Richard Cash, Senior Lecturer on International Health at HSPH, and a colleague of Briscoe’s back in Bangladesh in the 1970s, sees Briscoe fitting in well at the School and Harvard, although his views at times may seem impolitic. “At a university, we have the luxury of not having to solve problems—but rather to analyze

at which the United States or Pakistan or any country is going to have definitively solved its water problems.”

With that long view, Briscoe remains both an optimist and a realist. “In some places, the glass is almost full. In other places, it’s five minutes to midnight. Or five minutes past.”

Madeline Drexler is a visiting scientist at HSPH and guest editor of this issue of the Harvard Public Health Review. Her work has appeared in the New York Times, Boston Globe, and many national publications. She is the author of Secret Agents: The Menace of Emerging Infections.



Public health takes aim at sugar and salt

Food Fright

The war on obesity and other lifestyle ills has opened a new battlefield: the fight against sugar and salt. It may be a fight for our lives.

In the last few years, evidence has mounted that too much of these appealing ingredients—often invisibly insinuated into beverages, processed foods, and restaurant fare—harms health.

Research at the Harvard School of Public Health and elsewhere, for example, has tied sugary drinks to an epidemic of obesity in the United States. The average 12-ounce can of soda contains 10 teaspoons of sugar, and the average teenage boy consumes nearly three cans of sugary drinks a day. Is it any wonder that about two-thirds of Americans are now overweight or obese?

Obesity, in turn, raises the risk of type 2 diabetes, heart disease, arthritis, and certain cancers. Meanwhile, studies have linked salty diets to high blood pressure, which increases the risk of heart attacks and strokes, the first and third leading causes of death in the United States.

At HSPH, the Department of Nutrition is helping to lead the charge for healthier consumer fare. In April, at a widely covered video press conference, the department's faculty publicly challenged beverage makers to create a class of drinks with 70 percent less sugar—a partial reduction that could lower obesity and diabetes rates within a year, they believe. On the salt side, experts estimate that cutting average sodium consumption by one-half could prevent at least 150,000 deaths annually in the United States.

Bolstering this two-pronged public health campaign has been a shift in national political philosophy. “The previous administration believed that market forces solved everything and that regulation was off the table. But market forces, left alone, damaged the economy,”

THIS IS PUBLIC HEALTH.

With rates of obesity and other chronic illnesses skyrocketing, public health experts are exploring new ways to promote food industry change. Their strategies range from refining our taste buds to imposing taxes on soft drinks.

continued

says Walter Willett, Chair of the Department of Nutrition and Fredrick John Stare Professor of Epidemiology and Nutrition. “That also applies to the food supply and health. Market forces don’t promote a healthy diet—in fact, they do exactly the opposite. We made a lot of progress on trans fat. Now the biggest issue, outside of too many calories, is the huge amount of sugar and salt.”

As in many recent public health campaigns, New York City has been ahead of the pack. Its “Healthy Heart—Cut the Salt” program, now a nationwide effort by a coalition of health organizations and public agencies, works with food industry leaders on a voluntary framework to cut salt in their products. “New York City created a market for trans-fat-free foods, and it will create a market for lower-sodium foods,” Willett predicts. In May, President Barack Obama picked Thomas R. Frieden, New York City’s health commissioner, to direct the U.S. Centers for

Disease Control and Prevention (CDC), installing a fierce advocate for lowering salt and taxing sugary beverages in a position to bring about change.

SPOONFULS OF SUGAR

In the School’s current battle plan, the prime target is sugar in sodas, fruit juices and other cloying drinks. Here’s why:

- *Downing just one 12-ounce can of a typical sweetened beverage daily can add 15 pounds in a year.*
- *In children, one sweetened beverage a day fuels a 60 percent increase in the risk of obesity—and American teenaged boys drink almost three times that much.*
- *This April, an HSPH study linked sugary drinks to increased risk of heart disease in adults. Scientists have long known that sugar reduces the “good” HDL cholesterol in the blood. Consistent with this effect, the April study showed that it wasn’t just weight gain that raised heart disease risk, but sugar itself—eating an otherwise healthy diet or being at a healthy weight only slightly diminished the risk.*
- *In 2004, the Nurses’ Health Study found that women who had one or more servings a day of a sugar-sweetened soft drink or fruit punch were nearly twice as likely to develop type 2 diabetes as those who rarely imbibed these beverages.*

As a dietary enemy, sugar is cleverly camouflaged, because it is dissolved in liquid. A typical 20-ounce soda contains 17 teaspoons of sugar. “If people thought about eating

17 teaspoons of sugar, they’d become nauseated,” Willett says. “But they are able to drink it right down and go for another.” While we normally balance a big meal by taking in fewer calories later, that compensation doesn’t seem to occur after guzzling soft drinks—possibly because fluids are not as satiating as solid foods, or because sweet-tasting soft drinks whet the appetite for high-carbohydrate foods.

Willett and Lilian Cheung, lecturer in the Department of Nutrition and editorial director of The Nutrition Source website (www.thenutritionsource.org), urge people to choose drinks far lower in sugar and calories: options such as water, tea, seltzer with a splash of juice, coffee with one lump of sugar.

“If we can shift the present American norm back to a lower expectation of sweetness, people will adjust their palates, particularly the younger population,” says Cheung.

PASS (UP) THE SALT

Almost 80 percent of the salt in the American diet comes not from the salt shaker, but from processed or restaurant foods. According to the U.S. Department of Agriculture, in 2005 and 2006, the average American on a 2,000-calorie-per-day diet devoured more than 3,400 mg of salt per day (mg/d). That’s substantially more than current dietary guidelines, which recommend that adults in general consume no more than 2,300 mg/d—about a teaspoon.

Several years ago, the National Institutes of Health’s Dietary Approaches to Stop Hypertension-



The Congressional Budget Office estimates that a three-cent tax on every 12-ounce soft drink could yield \$24 billion over the next four years—money that could help pay for overhauling the nation’s health care system, according to *The Wall Street Journal*.

Sodium clinical trial (DASH-Sodium), led by HSPH's Frank Sacks, professor of cardiovascular disease prevention, found that the biggest blood-pressure-lowering benefits came to those eating at the lowest sodium level tested, 1,500 mg/d. For those prone to high blood pressure, people over 40 and African Americans—groups that together represent nearly 70 percent of the population—the CDC likewise advises no more than 1,500 mg/d.

That 1,500 mg/d threshold would require cutting sodium in processed and restaurant foods by about 80 percent. Though it may sound drastic, the goal is more urgent than ever.



Most Americans should eat no more than 1,500 mg of sodium per day. That goal would require removing 80 percent of sodium from processed and restaurant foods.

In 1982, the U.S. Food and Drug Administration (FDA) called on the food industry to voluntarily reduce sodium levels in processed foods—yet sodium consumption has steadily drifted upward. By 2000, men were eating 48 percent more salt than they

did in the early 1970s, and women 69 percent more.

REFINING THE AMERICAN PALATE

To wean ourselves from excess sugar, the Department of Nutrition's challenge uses

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WHAT OTHER COUNTRIES HAVE DONE



Over the past three decades in Finland, deaths from heart disease and stroke have both fallen 75 to 80 percent. As sodium intake has dropped 42 percent, and the Finnish population has made other healthy changes, life expectancy has risen more than 10 percent. By contrast, in the 1960s, Finland suffered the highest heart disease rates in the world. To grapple with the problem, its government launched measures to improve the production and marketing of health foods, passed salt labeling laws, held mass-media campaigns, and conducted school programs and worksite interventions.



From 1998 to 1999, food processors in New Zealand reduced sodium content in breakfast cereals by 61 percent, in bread by 26 percent, and in margarine by 11 percent—eliminating about 33 tons of salt from these products. Foods that meet government standards can use a check-mark label that makes it easier for consumers to choose healthier fare.



In its “traffic-light” labeling program, the United Kingdom designates foods as high (red), medium (yellow) and low (green) in fat, saturated fat, sugar, and salt. The country's Food Standards Agency published a set of voluntary salt reduction targets in 2006 for 85 categories of food. The U.K. program has begun to reduce average adult salt consumption.

W.H.O.

In 2007, the World Health Organization, citing conclusive evidence that excess sodium causes hypertension, called for worldwide reformulation of processed and prepared foods with the lowest possible sodium content.



Fast Facts on Sugar and Salt

Sugar in Hiding

As a dietary enemy, sugar is cleverly camouflaged because it is dissolved in liquid. A 20-ounce bottle of a sugary soft drink contains 17 teaspoons of sugar. In August 2009, the American Heart Association recommended that women consume no more than six teaspoons of added sugar a day, and men no more than nine teaspoons.



TEN COMMONLY EATEN FOODS: HOW SALTY ARE THEY?



	SIZE	TOTAL SODIUM
Submarine sandwich, with cold cuts	1 sandwich, 6" roll	1,651 mg
Fast-food taco	1 large	1,233
Spaghetti sauce, marinara, ready-to-serve	1 cup	1,203
Soup, chicken noodle, canned, prepared with water	1 cup	1,106
Croissant	1 croissant	424
Bagel, plain	3 and 1/2" bagel	379
Corn flakes	1 cup	298
Cashew nuts, dry roasted, with salt added	1 oz.	181
Potato chips, plain, salted	1 oz.	168
Tofu, firm	1/4 block	6

Source: USDA, University of Maine Cooperative Extension

Most Americans should consume no more than 1,500 mg of sodium per day.

Eating just one or two high-sodium items can far exceed this amount.

INTERPRETING THE LABEL

Nutrition Facts	Amount/serving	%DV*	Amount/serving	%DV*
	Total Fat 6g	9%	Total Carb. 9g	3%
Serv. Size 1/2 cup (120mL) condensed soup Servings about 2.5	Sat. Fat 1.5g	8%	Fiber 2g	8%
Calories 100 Fat Cal. 50	Trans Fat 0g		Sugars 1g	
*Percent Daily Values (DV) are based on a 2,000 calorie diet.	Cholest. 5mg	2%	Protein 1g	
	Sodium 870mg	36%		
	Vitamin A 0% • Vitamin C 0% • Calcium 0% • Iron 0%			

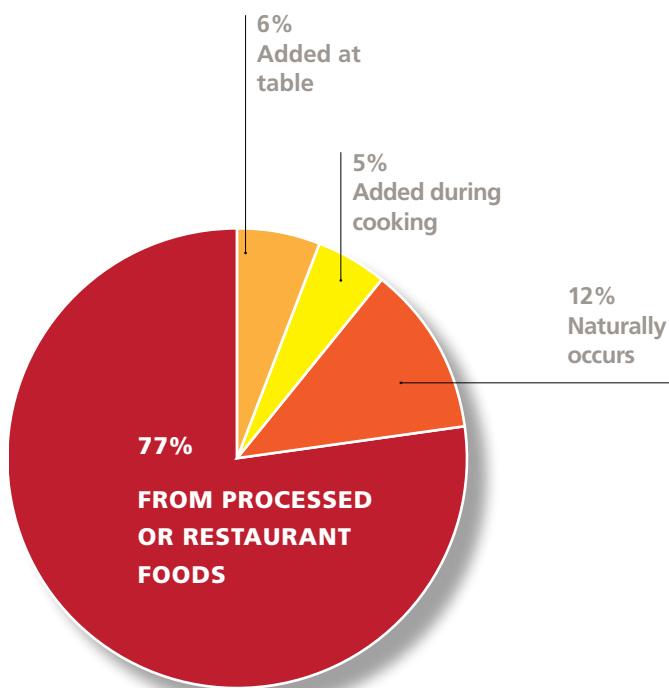
The highlighted areas illustrate the serving size, sodium content, and amount of sugar.

The number in the % Daily Value column is based on a 2000-calorie diet.

Consumers often overlook the fact that one package may contain multiple servings.

THE SALT PIE

77 percent of the average person's sodium intake comes from processed or restaurant foods.



Source: CDC

HOW SWEET IS IT?

SPOONS OF SUGAR

The HSPH Department of Nutrition has developed a chart to illustrate the sugar content of common beverages. Healthy alternatives are shown in green, less healthy alternatives to be consumed in moderation in yellow, and those to be avoided in red. Find the complete list and see how your favorite beverage compares at www.hsph.harvard.edu/nutritionsource/files/how-sweet-is-it-color.pdf.



"Market forces don't promote a healthy diet—in fact, they do the opposite."
—Walter Willett

continued from page 17

a benchmark of one gram of sugar per ounce, which equates to a 12-ounce soda that contains three teaspoons of sugar and 50 calories. “We’ve suggested that manufacturers provide an option in between high-sugar and sugar-free drinks,” Willett says, “to help people step down if they can’t go cold turkey from full sugar to no sugar.” The department is currently discussing the challenge with Obama administration officials. While Willett and others are not directly in contact with manufacturers, the challenge’s press coverage has stirred debate within the beverage industry, and several small start-ups are introducing low-sugar drinks.

The HSPH challenge further proposes that the FDA require manufacturers to label the fronts of their cans and bottles with information on total contents rather than per-serving quantities. Currently, most consumers assume that a single package of chips or bottle of soda is a single serving. Only upon close inspection do they discover that there are two or more “servings” in the package. Willett has called for an initial reduction of salt in processed foods of up to 20 percent—a change that studies show does not perceptibly affect taste.

LAUNCHING A NATIONAL CAMPAIGN

In its forceful call to action, HSPH joins a growing chorus of health experts demanding change. “New Horizons for a Healthy America: Recommendations to the New Administration,” a report issued in April by the Commission on U.S. Federal Leadership in Health and Medicine: Charting Future Directions, describes sugary beverages and salty

processed foods as “serious concerns” for the Obama administration. The Washington, D.C.-based Center for Science in the Public Interest (CSPI) has also pressed Congress and the administration to act.

Looking to economic levers to cut consumption, Willett proposes a national sales or excise tax of up to 18 percent on sodas and candy. Along with CSPI, the Department of Nutrition submitted a letter to Congress in June supporting a tax on full-sugar beverages; Willett has also testified before the Massachusetts Legislature in support of such a bill. Some of this tax could be used to subsidize healthy but relatively expensive alternatives, such as fresh fruits and vegetables. Willett would also rewrite government procurement policies to help set new industry standards. In his view, food services at military facilities, hospitals, government organizations, and schools should all phase out highly sweetened beverages in favor of low-sugar options.

And Willett has called for a ban on child-focused marketing for sweetened drinks—since children and teens drink most of their sugary calories at home. “There should be strong regulations, with real teeth in them, against advertising to children. It’s immoral—criminal, even—to have children’s health undermined for the sake of profit,” he says. To this end, Willett has also contemplated lawsuits on behalf of children: “If a child is encouraged to consume these beverages by a fast-food chain, without being warned of the consequences, and they develop diabetes, is there not some liability?”

“We will use all levers possible, as we have done for trans fat elimination,”

he adds. “Public education is central to this effort, and talking to journalists is a great multiplier of information.” A Reuters news service story on the department’s industry challenge was picked up from Canada to China, and in June *USA Today* ran a major story on the topic. Nutrition department investigators are also preparing a scientific review article for a leading medical journal about the deleterious consequences of high-sugar drinks.

The HSPH Department of Nutrition is raising funds to set up a research and information center that would conduct, compile, and disseminate studies on the health implications of sugar-sweetened beverages. The center’s mission: to educate policy makers and the public.

So far, food manufacturers have not widely reformulated their products, for fear of losing customers and getting ahead of taste trends. But other nations, such as Finland, have proven not only that palates can grow more refined when governments embark on full-scale efforts steering people toward more wholesome fare, but that population health dramatically improves when they do. (See: *What Other Countries Have Done* on page 17.)

For now, Willett intends to point public health’s artillery toward sodas and other sweetened drinks. “Going for the low-hanging fruit is the first step, and the sugared beverage area is the place,” he says. “These products are in a class with tobacco. There’s only harm, no benefit.”

Larry Hand is associate editor of the Review.

Madeline Drexler is guest editor of this issue of the Review.

With debate over unequal access to health care raging in the U.S., one place where the racial and economic divide in health is greatest is getting scant attention: the Internet.

Health websites number in the tens of millions, but most are written at a level only high school or college graduates can understand. As a result, their use by those with limited education or income is low. Among the poorest Americans, broadband Internet access has actually declined in the past year.

“You or I will go online to research a disease we’ve just been diagnosed with or check on the latest health claims regarding a favorite food. That’s just not a realistic option for the poor, many minorities, and those with limited education,” says Kasisomayajula “Vish” Viswanath, HSPH associate professor of society, human development, and health. “I’m interested in trying to understand how inequalities in communication result in inequalities in health. In terms of access to information, there are profound differences between the haves and the have-nots.” *continued*

Complexly designed websites, pop-ups, slow connections, and text written at grade levels difficult to understand can disenfranchise people from getting the health information they need.

Navigating Health on the Information Superhighway



WRONG TURNS ON THE INTERNET

Viswanath believes that such access can improve health outcomes. Cancer prevention and treatment, diabetes management, tobacco control, and stress levels could all be improved by knowledge gained from the Internet. “These are conditions that, in many cases, are preventable—or, if you have them, you can do something about them to reduce their effects on your health. But if you don’t have the information, or can’t understand the information, you can’t benefit from it to improve your chances to lead a healthier life.”

Some of the Internet stumbling blocks encountered by those with lower incomes and literacy levels are the same as those that everyone experiences from time to time: annoying pop-ups, too many choices, slow connections. “People with adequate education and resources can overcome these frus-

“In terms of access to information, there are profound differences between the haves and have-nots.”

—“Vish” Viswanath

trations,” says Viswanath. They buy a faster computer or get broadband at home. They turn on the pop-up blocker or pay someone to remove a virus that is causing problems. They can read quickly enough to pick out the best website choices from the millions Google serves up. “But for the poor and those with limited literacy, these problems are overwhelming,” he observes.

At a gathering sponsored by Discovery Communications and hosted by HSPH alumnus John Whyte, MD, MPH ’93, at Discovery in Silver Spring, MD, recently, Viswanath told a group of HSPH alumni and friends that as part of one study he is conducting, free Internet training is being provided to help the underserved obtain health information. He is also developing a simple health Web portal that enables those with limited literacy to get on the health information superhighway.

As a first step in the research study, Viswanath conducted focus groups among adults with low income and low education levels, and among minorities. He did separate usability testing of a Web portal with individual volunteers—similar to that done by sophisticated website designers for multimillion-

THE DIGITAL

DIVIDE

Seventy percent of the U.S. adult population in 2007 was online and 80 percent of them say they have searched for health information. But data from two studies—the Pew Internet & American Life Project in 2008 and HINTS, a 2005 NIH research project focused on use of the Internet for cancer information—paint a radically different story of Internet health information access among the haves and have-nots.

- Twenty-five percent of Americans whose household incomes are \$20,000 a year or less had broadband at home in 2008—down from 28 percent in 2007.
- Forty-three percent of African Americans reported having home broadband, compared with 57 percent of whites and 56 percent of English-speaking Hispanics.
- Of those whose income was below the federal poverty level (which was \$19,349.99 for a family of four in 2005 when the study was completed), only about 30 percent were using the Internet for health information. By contrast, more than 70 percent of those whose household income was three times the poverty level or higher (income over \$58,050 for a family of four) were going to the Internet for health information.
- While 30 percent of high school graduates use the Internet for health information, that figure rises to 75 percent among those with at least a bachelor’s degree.
- The most popular health website on the Internet, WebMD.com, is written at the 13th-grade level. Breastcancer.org is written at grade level 12. The National Institutes of Health’s website is written at grade level 9.
- Television remains the great health care information equalizer. Irrespective of income, about 75 percent of all individuals say they watch health news on TV.



Dr. Viswanath recently talked to HSPH alumni and friends about the disparities in digital health access at a forum sponsored by Discovery Communications at their global headquarters outside Washington, D.C.

dollar clients. Input from the usability testing led him to design the next iteration of the health Internet portal (see it at www.clicktoconnect.org).

“As a media company with more than 1.7 billion subscribers in 170 countries, we’re deeply committed to finding new ways to empower people to lead healthier lives. The issues Dr. Viswanath talked about are important to us as a company and to me personally.”

John Whyte, MD, MPH '93

Discovery Health Vice President for Continuing Medical Education



Most focus group members were using computers at school or a library, and were exploring the Web for school work or resume writing. They often relied on younger family members for help with the Internet.

BUILDING A BETTER INFORMATION HIGHWAY

With the input from the focus groups, Viswanath designed a new health Internet portal with simpler language, a two-column layout rather than three or more columns, a simple navigation system, technology that would load quickly onto older computers, and no distracting pop-ups. The website is written at grade levels 6-8. The website includes content on a wide range of health related topics, both as text and, in some cases, with access to video. The trial is currently in its fourth year.

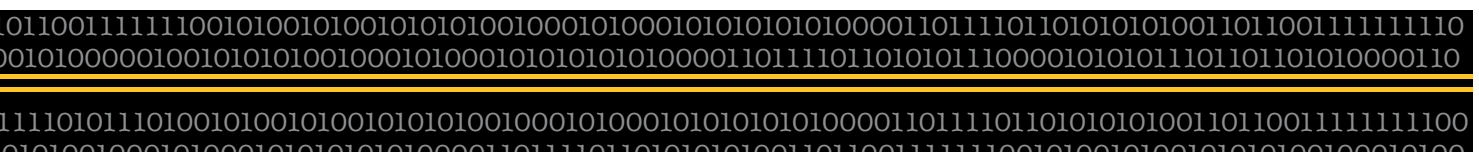
Viswanath acknowledges that, for now, training programs in Internet use will need to be offered by nonprofit groups with a commitment to the underserved. Ideally, he would like to see broader measures that guarantee equal access to Web-based health resources. Among these: subsidized cable and broadband Internet access for the poor; websites that are easily navigable by people with low literacy; consistent health information across official websites produced by government agencies and non-governmental health organizations; and widespread training on how to use the Web to acquire health information—including training offered at work.

“In the end, communications inequalities are more addressable than most of the other social factors that determine how healthy or unhealthy you will be,” Viswanath says. “Social determinants that influence health—such as social class, discrimination and violent neighborhoods—are vitally important problems, but difficult to address when compared to communication inequalities. As a society,

we should be able to develop health websites that people with limited literacy skills can use. And we should be able to find ways to provide subsidized broadband access and inexpensive computers for the poor.”

As Viswanath sees it, such equitable access to health information is rooted in democracy itself: “I think of this in terms of the Jeffersonian notion of an informed citizenry. If you don’t have information, you are acting on a lack of information or misinformation, which means you are unable to act in your own best interest.”

Julie Rafferty is senior director of development marketing and planning at the Harvard School of Public Health.



The Wrights' Stuff

On their way to school one morning, two middle-school boys skirted a crime scene where a high-schooler lay dead, shot just a few minutes earlier while waiting at a bus stop. By the time they got to their classroom about two blocks away, both boys started wheezing and coughing and used their asthma inhalers to regain control of their breathing.

This hypothetical scenario is a realistic example, say Harvard School of Public Health faculty members Rosalind and Robert Wright, of how stress in impoverished neighborhoods affects health.

And it will take more than prescription inhalers to solve the problem.

The Wrights, who are HSPH alumni, are using their combined expertise in toxicology, genetics, pulmonary medicine, and the effects of physical and social environments on health to change how medicine is practiced. Their goals are three-fold. First, they intend to document scientifically the role stressful environments play in creating medical problems that range from asthma to lead poisoning. Second, they want to get physicians talking with patients and their families about how these stressors cause and exacerbate disease. Finally, they hope to identify ways to intervene in the lives of children and adults who face the double burden of being poor and of being exposed to daily emotional distress—to help them live healthier lives.

Poor neighborhoods typically have more old and peeling lead-based paint than do more affluent locales. Already, the Wrights' research suggests that when children are exposed to significant and persistent emotional stress, the added exposure to environmental lead results in brain damage at lower thresholds than previously suspected. Their research also provides a bright counterpoint: that the complications of lead poisoning might actually be mitigated if life stresses are reduced.

The Wrights and their colleagues first proposed this effect in humans in a paper based on the study of mother-child pairs in Mexico City, published in the March 2008 issue of *Neurotoxicology*. Animal studies had previously made the association.

“As a pediatrician, it has always bothered me that the literature cites the permanency of lead poisoning,” says Robert, MPH '00, an associate professor of environmental





Couple's combined expertise forges new directions for treating asthma and lead poisoning.

health. “It makes no sense to me. Children’s brains are malleable. Why would lead cause permanent damage? My belief is that it doesn’t. We just don’t have the right intervention yet.”

COLLABORATORS IN WORK AND LIFE

As researchers, the Wrights often appear as co-authors on papers that break new ground. Common phrases in their published work include “no previous study” and “has not been studied among children.”

They met while both were attending medical school at the University of Michigan. Both plunged into clinical practice—Robert in pediatrics and Rosalind in pulmonary medicine. “We never went into medicine thinking we’d

be doing anything comparable to our public health work,” says Rosalind, MPH ’96, an assistant professor of environmental health. “But listening to our patients, it was quite clear that the numerous social stressors they were dealing with affected our ability to provide good care

continued

THIS IS PUBLIC HEALTH.

Some diseases attack certain groups more than others. The Wrights are deciphering the complex roots of asthma and lead poisoning, which disproportionately strike the urban poor.



The Tar Creek Superfund site in northeast Oklahoma is a public health nightmare. Between 1891 and the 1970s, mining companies extracted millions of tons of lead and zinc from below its surface. Robert and Rosalind Wright design interventions that could reduce the effects of toxic metal exposures in children living in the area. High iron levels from mining wastes turn the water orange.

and improve their health. That is what drew us to public health.” Both taught at the Harvard Medical School before coming over to the School of Public Health, and now hold joint appointments.

The professional collaboration developed gradually, as work-related conversations around the house kept revealing common threads. “I was studying the impact of metals such as lead on child development,” says Robert. “Roz had all these articles around the house on stress and brain development. The biological similarities between the two mechanisms we were studying were striking, and it just seemed to me there had to be a relationship.” When a medical literature search turned up nothing, it inspired a joint mission in public health. Both still see patients on a part-time basis, applying the results of their research directly in the clinic—Robert at Children’s Hospital and Rosalind at Beth Israel Deaconess Medical Center.

THE ASTHMA-VIOLENCE LINK

The Wrights are part of a small but growing movement of physicians incorporating environmental considerations

“Psychological stress disrupts the same biological pathways as does breathing in air pollution or tobacco smoke.”

—Rosalind Wright

into treatment of diseases and conditions. If scientific progress could be measured on a scale of 1 to 100, Robert says, the field is currently at 10 to 12. Research on asthma and lead poisoning have made the most headway.

Investigators have already linked physical factors such as air pollution, allergens, tobacco smoke, dust mites, and cockroaches to a greater risk of asthma and to more severe asthma. But that research, Rosalind says, only partially explains why asthma is concentrated in high-risk groups such as the urban poor. In a paper published in *Clinics in Chest Medicine* in 2006, she proposed that a “violence and urban asthma paradigm” exists in “socially toxic neighborhoods.”

An earlier paper she coauthored, in *Environmental Health Perspectives* in 2001, described four cases of Boston children in whom severe asthma attacks appeared to be triggered after they witnessed violence or were victims themselves. In a 2007 study published in the same journal, Rosalind and colleagues linked increased asthma risk to traffic-related air pollution and to exposure to violence. “Psychological stress disrupts the same biological pathways as does breathing in air pollution or tobacco smoke,” she says.

According to Rosalind, the couple’s physician colleagues were reluctant at first to start asking asthma patients and their parents about the stress in their lives. “I think the fear was that patients and families would consider the probing a violation of privacy,” she says. But once she and her fellow

specific metabolic pathways linked to asthma, colleagues in the medical community started listening,” says Rosalind. Indeed, physicians are beginning to view the myriad stressors in underprivileged neighborhoods as “social pollution” that affects risk for a wide range of diseases.

SOCIAL TOXINS BEHIND DISEASE

The couple’s research into lead poisoning shows that the combination of poverty and lead actually increases the toxicity in children. Traditionally, Robert says, physicians have considered lead poisoning untreatable; children with lead poisoning, who are usually poor, were believed destined to intellectual impairments that would prevent them from leading normal lives.

Does exposure to violence worsen childhood asthma in “socially toxic” neighborhoods?

doctors started asking the questions, it became clear that patients appreciated someone talking with them about how community and domestic violence affects their asthma and health in general. As she explains, “It validated something the patients already knew was important.”

Today, physicians more frequently screen patients for exposure to violence, both inside and outside the home. “Once we more directly connected exposure to domestic violence to asthma risk in children, and emotional stress to

“In our approach, we’re hoping to show that interventions in the social environment may be a treatment for lead poisoning,” says Robert. “We’re saying these kids may be able to overcome their lead poisoning and enjoy productive lives.” And, he adds, “If we are right that social interventions work, the applications wouldn’t be limited to lead poisoning. Other toxicants could also be treated this way.”

The Wrights’ approaches have earned them respect among other researchers conducting similar studies. Rosalind “has pioneered the concept that, in addition to physical environment pollutants affecting asthma, there is a parallel construct of social pollutants,” says Edith Chen, associate professor in the department of psychology at the University of British Columbia in Vancouver and an asthma researcher.

And the application of Rosalind’s research in the clinic, Chen says, “is happening even now. She’s raising levels of awareness among physicians about social contributors to childhood asthma.”

The same is true for Robert’s innovative studies, notes Phillip Landrigan, director of the Children’s Environmental Health Center and professor of pediatrics and community and preventive medicine at Mount Sinai School of Medicine



Exposure to lead in older urban homes still ranks as a public health threat in the U.S. The Wrights’ research may point to ways to mitigate neurological damage in children.

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**RESEARCHERS
TAP INTO A
NEW SOURCE OF
GOVERNMENT
DOLLARS.**

© Image Source

Stimulating Ideas

Scientists at the Harvard School of Public Health and around the country are hoping that a busy spring will pay off in an ample fall harvest of new research funding. The bounty could come courtesy of the American Recovery and Reinvestment Act (ARRA), more commonly known as the federal stimulus package. Flat funded for the past five years, the National Institutes of Health (NIH) received \$10.4 billion as

part of the \$787 billion package, passed by Congress and signed into law by President Barack Obama on February 17. Of that, \$8.2 billion will flow to scientific research. Faculty members from every department at HSPH quickly pulled together proposals this spring totaling more than \$72 million.

Under the stimulus package's mandate, the NIH's 27 centers and institutes can distribute the money through an array of grant programs, but will collectively support projects that stimulate the economy, create or retain jobs, and have the potential for making scientific progress in two years. The funding is divided between promising new projects, previously submitted grants that were well reviewed

but not funded due to budget constraints, and supplements to grants already under way. Funds were being awarded as the *Review* went to press.

Funding in all of the NIH's stimulus grant programs comes with more stringent reporting requirements than usual. As with all ARRA funds, there will be heightened scrutiny from public and government auditors. Researchers will be required to submit financial and scientific progress reports quarterly, rather than annually. And the government reserves the right to rescind funding if it's not being spent quickly enough. Scientific progress reports will be posted to ARRA's website.

The National Institutes of Health's one-time funding boost is expected to support promising or underfinanced research.

Among the first faculty members at the School to receive ARRA funding is I-Min Lee, associate professor of epidemiology. Her study examining the effects of physical activity on cancer patients originally fell below the NIH funding cut-off, but was given new life when more resources became available.

Like many other researchers, Lee wonders what will happen to the research generated by ARRA when the funding runs out in two years. "Everything goes through a cycle so we just keep our fingers crossed."

Amy Roeder is the development communications coordinator in the Office for External Relations at HSPH.

\$19 BILLION FOR HEALTH I.T.

The stimulus package also seeks to promote the adoption of electronic medical records through the Health Information Technology for Economic and Clinical Health (HITECH) Act. Under the act, \$19 billion will be distributed through Medicare and Medicaid payment incentives to physicians and hospitals using certified electronic health information systems in a "meaningful"—but as yet undefined—way beginning in 2011 and continuing for the next five years.

"This mechanism is smart," says Ashish Jha, associate professor of health policy and management, who published a study in March on the slow adoption of electronic health records. "If Congress had created a grant mechanism, adoption would be slower. No one is going to want to buy a system now if the government is going to pay for it later. And this way it doesn't penalize those who have already purchased systems."

The program will provide enough money to cover the systems used in most doctors' offices, although probably not enough for most hospitals, Jha says. He is optimistic that the program will spawn adoption of electronic health records, which will eventually lead to health care quality improvements and cost reductions.

For more on electronic health records, read the *Harvard Public Health Review's* "Doctoring in a Digital World": www.hsph.harvard.edu/news/hphr/fall-2008/fall08ehealth.html. Learn more about Jha's study at: www.hsph.harvard.edu/news/press-releases/2009-releases/us-hospitals-extremely-slow-to-adopt-electronic-health-records.html

\$1.1 BILLION FOR COMPARATIVE EFFECTIVENESS RESEARCH

With health care costs now exceeding 15 percent of Gross Domestic Product (GDP), the Obama administration and Congress are taking another look at comparative effectiveness research, which weighs the medical benefits, harms, and costs of treatment alternatives—such as watchful waiting, surgery, or radiation for prostate cancer.

ARRA funds totaling \$1.1 billion will be distributed between several government agencies, including the Department of Health and Human Services, which will receive recommendations on setting research priorities from a new 15-member council. Researchers will then be able to apply for funding, which will carry ARRA's stringent reporting requirements.

Milton Weinstein, Henry J. Kaiser Professor of Health Policy and Management, is cautiously optimistic that this new effort will produce results. But he's concerned that the funding effort does not explicitly mention cost-effectiveness analysis, a component of the field's research agenda used to measure the value of medical treatment. "It will be necessary for public and private payers to address cost-effectiveness to contain costs," he says. "The more effective treatment for a

particular medical condition is often the more expensive one, which means that it is possible to contain costs only by allocating resources more wisely." For example, spending money on treating high blood pressure in a large number of patients would yield greater health improvement—gains in life expectancy and quality of life—than spending the same amount of money on lung transplants for only a few people.

Weinstein does not believe that the new legislation will result in mandates for doctors and rationing of care, as some opponents fear. But it remains to be seen, he says, whether Medicare and private insurers will take comparative effectiveness research findings into account in their coverage and reimbursement decisions.

What is now known as comparative effectiveness research was developed at HSPH's Center for the Analysis of Health Practices in the 1970s, under the leadership of former dean Howard Hiatt. To learn more, read the *Review's* "Protecting the Medical Commons": www.hsph.harvard.edu/review/protecting_the.shtml.





CATCHING THE FLU BEFORE IT CATCHES THE WORLD

As a new influenza pandemic this spring set off alarms in the global health community, Harvard School of Public Health scholars helped illuminate the crisis and lead a practical response. In a widely read *New York Times* op-ed article, Dean Julio Frenk described how the Mexican government's sharp surveillance system—backed by prompt government interventions—alerted the world to the novel H1N1 virus and contained its initial spread. Professor of Epidemiology Marc Lipsitch lent his epidemic modeling skills to the U.S. Centers for Disease Control and Prevention (CDC) and published two timely scientific papers on the topic. And Associate Professor Atul Gawande teamed up with the World Health Organization (WHO) to create a concise influenza patient-care checklist for beleaguered hospitals.

Frenk—Mexico's former minister of health—praised Mexico's initial response to the epidemic. After Mexico's disease surveillance system picked up a minor but troubling trend in flu cases in April, "An immediate investigation led, within a few weeks, to the isolation and full genetic sequencing of the microbe causing the illness," he wrote in the *Times* ("Mexico's Fast Diagnosis," May 1, 2009). The charge that the government hadn't acted quickly enough, he added, "fails to take into account the real-life complexity of recognizing and responding to an unexpected public health emergency." Frenk consulted with officials in Mexico in April as the outbreak began to jump across continents. Impressed by how Mexican scientists had quickly spotted H1N1 against a background of standard seasonal flu and had promptly alerted global authorities, he wrote, "Their fast action gave other countries the warning they needed to screen for the new virus."

MODELING AN EPIDEMIC

While Dean Frenk was in Mexico, Lipsitch lent his infectious-disease modeling skills to the CDC in Atlanta. He worked with agency scientists to judge the severity and transmission rate of the virus. His collaborators included faculty colleagues and students at HSPH, and colleagues at Hong Kong University, the Netherlands National Institute for Public Health and the Environment, and Imperial College London.

Coincidentally, just before the epidemic emerged, Lipsitch had completed a paper that described how dipping into small reserves of second-line flu drugs such as Relenza could hedge against resistance to stockpiled first-line treatments such as Tamiflu. *PLoS Medicine* published the paper online May 19. In a separate May 27 *New England Journal of Medicine* article, Lipsitch and colleagues described steps needed to prepare for the upcoming flu season in the

HSPH INVESTIGATORS HELP LEAD H1N1 RESEARCH AND RESPONSE

Northern Hemisphere—from capitalizing on university and private-sector expertise to amping up government surveillance.

HELPING HOSPITALS PREPARE

Gawande, who led a team that developed a surgical checklist now used in operating rooms worldwide (“A Simple Checklist that Saves Lives,” *Harvard Public Health Review*, Fall 2008), responded to a WHO request for similar influenza H1N1 guidelines. Twelve hospitals around the world, including one in Mexico, joined in reaching clinical consensus on the checklist and in quickly bringing the guidelines into operation. HSPH doctoral student Martin Lajous, a medical doctor from Mexico, acted as a go-between with Mexican hospitals.

By May 15—barely five weeks after Mexican authorities started investigating the first wave of cases—the WHO published the checklist. The two-page swine flu document

lists recommended medical procedures from the time a patient arrives at a clinic until the discharge and after. For medical personnel, the first two procedures are “put on medical/surgical mask” and “clean hands”—commonsensical actions that are shockingly ignored in modern health care, according to a 2006 study in Michigan on which Gawande had based part of his research.

MEDIA AVALANCHE

Doctoral student Lajous also helped Assistant Dean for Communications Robin Herman in working with Spanish-language media as an avalanche of media requests from around the world hit the HSPH Office of Communications. Reporters were most eager for Dean Frenk’s perspective on the epidemic as the former Mexican health minister, and the dean participated in dozens of interviews in the first few weeks after the outbreak became known.

**THIS IS PUBLIC
HEALTH.**

When the H1N1 (swine) influenza virus surfaced in Mexico this spring, HSPH faculty and Dean Frenk were in the thick of the public health response, offering expertise ranging from statistical modeling to cell phone surveys to checklists for beleaguered hospital staffs.

CELL PHONE SURVEYS

Collaborating with a major cell phone company in Mexico, Lajous helped draft a survey to pinpoint the outbreak’s earliest cases. The company, Telefonica, then sent to its customers both the survey and a message from the Mexican minister of health. Lajous and colleagues are now analyzing the data, which could offer insights into how cell phones might enhance public health surveillance and response—not only for pandemic flu, but for any fast-spreading emerging disease.

Larry Hand is associate editor of the Review.



Kathie Dionisio

A pair of HSPH doctoral students look at air pollution in new ways. For one, the goal is to describe unique air pollution challenges in the developing world. For the other, the aim is to measure more precisely the effects of air pollution on the heart, to understand how it causes damage.

KATHIE DIONISIO

Kathie Dionisio has the mind of an engineer but a heart devoted to global health. The graduate student's technical know-how and problem-solving drive came in handy when she arrived in Accra, Ghana, in 2006, charged with launching research with her HSPH faculty adviser Majid Ezzati. The goal: to understand the detailed patterns of air pollution throughout the city and its neighborhoods—one of the first such studies in urban areas of the developing world.

"We had to do everything from making personal connections in the neighborhoods to building a bat-

tery backup system to keeping the equipment running on an unreliable power supply," Dionisio says. Now a doctoral candidate in the departments of Global Health and Population and Environmental Health, she spent a year in Accra as a research assistant before beginning her studies at HSPH, and returned periodically during the following year to manage data collection. "I had to solve problems without the benefit of overnight delivery for the parts I needed—just whatever I could get from the local market," she says.

Dionisio studied biomedical engineering as an undergraduate at Columbia University, and earned a master's degree in mechanical engineering at the Massachusetts Institute of

Technology. Eager for an international experience and curious about exploring research with a more direct application to health, Dionisio pursued an MIT-funded service project with a community-based health care organization in Zambia following graduation. The experience stoked her interest in public health, and the data-driven Accra project seemed like an ideal next step.

Currently, Dionisio is analyzing reams of measurements from the stationary and mobile monitors she and other student-researchers carried around Accra. The devices captured airborne particulate matter, registering differences between neighborhoods caused by traffic patterns, widespread burning of charcoal or wood for fuel, and other factors.

“Kathie is tremendously motivated, with great scientific and personal judgment,” says Ezzati, associate professor of international health at HSPH. “We spoke regularly about research and the project’s operation during Kathie’s field research in Accra. It was clear her decisions were the right ones for both the scientific and social aspects of our work.”

Dionisio and her colleagues aim to create a detailed profile of the unique air pollution challenges faced by cities in developing countries, laying the groundwork for future monitoring efforts and interventions.

EMMANUEL BAJA

“It’s fairly well accepted that air pollution is bad for your heart,” says Helen Suh, associate professor of environmental chemistry at HSPH. “But what is not as well understood is how it causes damage.”

The key may prove to be in the measurement of the heart’s electrical cycle known as the QT interval, says environmental health doctoral student Emmanuel Baja, who is advised by Suh. Exposure to traffic pollution has been associated with longer QT intervals in the elderly. Abnormally long or short QT intervals suggest a risk of developing abnormal electrical activity (arrhythmias) in the heart. Baja hypothesizes that pollution may trigger arrhythmias, leading to heart attack or even sudden death.

To explore this idea, he set up a study drawing on pollution data he gathered from monitoring devices located on the roof of Harvard Medical School’s Countway Library, as well as air quality data from Massachusetts’ Department of Environmental Protection and health data from a long-running cohort of elderly veterans. His study garnered top honors in HSPH’s student research poster competition in

WHAT IS PARTICULATE MATTER?

Now recognized as a dangerous form of air pollution, particulate matter is the complex mixture of extremely small particles and liquid droplets suspended in air. It includes dust and pollen, as well as diesel soot and other potentially harmful substances produced by fires and fossil fuel combustion. Current air pollution standards regulate particles as small as 2.5 microns in diameter—hundreds of times smaller than the width of a human hair. These particles, called PM_{2.5} for short, easily deposit deep in the lungs.



Emmanuel Baja

April. The judges praised Baja’s “novel approach,” but he is reluctant to take sole credit. “Studies are always a collaboration,” he says.

When pressed, Baja will admit he was determined to help develop a computer program that more accurately measures the QT interval than the conventional method—measuring by hand the distance between blips on a paper chart. Baja collaborated with colleagues to supply the statistical model used to analyze the study’s data. Dipping into applied mathematics skills acquired earlier in his academic career, Baja realized that a model from economics could be a good fit for measuring cumulative exposures over a period of time.

“It’s fascinating to me that certain theories cut across disciplines,” Baja says. “I can take models from economics

continued on page 49

2009 Alumni Award Winners



SCIENTIFIC PIONEERS, INSPIRATIONAL TEACHERS

Call them pioneers for delving into unexplored research areas. Call them conventional-wisdom busters for proving that common health risks can be limited or eliminated. Or call them mentors who challenge students and guide them to be the future leaders in public health. This year, call them winners of the Harvard School of Public Health Alumni Award of Merit, presented annually to alumni who make exceptional contributions to public health. Meet the four 2009 winners honored at a special dinner in June.

Graham Colditz **MPH '82, Dr.PH '86**

Niess-Gain Professor of Surgery
Associate Director of Prevention
and Control, Alvin J. Siteman
Cancer Center

Washington University
in St. Louis



Graham Colditz has focused his career on the relationship between lifestyle, obesity, and cancer. His research on breast cancer made the epidemiology professor, a principal investigator for HSPH's Nurses' Health Study, and director of the former Harvard Center for Cancer Prevention, a world authority on the risk factors of exogenous hormones such as oral contraceptives and estrogen. At HSPH and now at Washington University in St. Louis, he has pursued a course of translating his research into changes in society and individual behavior.

To Graham Colditz, preventing most cancers is simple: quit smoking, eat a healthy diet, and lose those extra pounds. The American population, however, finds it difficult to get beyond the relentless marketing by tobacco companies, sugary beverage makers, and manufacturers of processed food. "The consumer focus of our culture leads us down the path of unhealthy lifestyle without any countermanding force saying we need to be more physically active and eat healthier foods," he says.

So he has developed tools that people can use to assess their risks for disease and set themselves on a healthy path. While at HSPH, he and his colleagues designed what became a website called "Your Disease Risk" (now at www.yourdiseaserisk.wustl.edu/).

"The prevailing view was that nothing could be done to avoid cancer," he says, "yet scientific evidence by the mid-1990s revealed that 50 percent of cancer could be avoided if we acted on what we knew.

“We spent several years developing tools that might be readily accessible to the general public. We launched the project with cancer in 2000 and suddenly realized that the prevention messages of not smoking, being physically active, eating a healthy diet, and avoiding weight gain were going to prevent diabetes, stroke, heart disease, and in large part, osteoporosis,” he explains. “We went back and put together the materials supporting the other diseases

and broadened the range of diseases as a way to engage a broader sector of society.”

Colditz is now developing a shorter, second-generation website (“Your Health Snapshot”) that patients can access in doctors’ waiting rooms—with the idea that, during the appointment, physicians could immediately reinforce the online prevention messages.

**Dimitrios Trichopoulos,
SM '68**

Vincent L. Gregory Professor
of Cancer Prevention and
Professor of Epidemiology

Past Chair, Department of
Epidemiology

Harvard School of Public Health



Dimitrios Trichopoulos has continually staked out scientific frontiers—from seminal research linking hepatitis B virus and tobacco smoking to liver cancer, to documenting that surgically induced and early natural menopause reduce breast cancer risk, to writing one of the two original papers associating secondhand smoke from cigarettes with an increased risk of lung cancer. And he’s not finished. His current work points to intrauterine and perinatal factors that affect risk of breast cancer in adulthood.

Some significant “firsts” highlight the career of Dimitrios Trichopoulos. He was first, with a 1990 paper in *The Lancet*, to propose that *in utero* exposures play a major role in breast cancer causation. He also was first in 1981, along with an independent paper published a few days later, to report that secondhand smoke increases the risk of lung cancer. In 1997, the editor of *The Lancet* included a paper Trichopoulos and colleagues had written in a list of 27 papers deserving to form a core canon of medical literature that every health professional should read. The paper linked psychological stress after a 1981 earthquake in Athens to risk of cardiac death.

Chalk it up to a pioneering spirit, which has prompted Trichopoulos to continually explore new scientific questions. “When you are relatively successful in one area of research, you can move to a different area,” he explains. “For liver cancer, in theory, we have the resources to prevent two-thirds of it. For lung cancer, when you consider active and passive smoke, we have the resources and knowledge to prevent more than two-thirds of it. For

breast cancer, we have not been equally successful, and it is intriguing to keep working in areas where there has not been much success and the potential to contribute is greater.”

Though he is proud to have published extensively in the scientific literature, he gets enormous satisfaction from mentoring younger colleagues to become leaders in public health. “The most gratifying feeling of all,” he says, “is to see students you have mentored become major stars in their own right.”

The *Harvard Public Health Review* published a profile of Trichopoulos in its Fall 2004 issue (see www.hsph.harvard.edu/review/review_fall_04/rvw_trichopoulos.html).

continued



Isabelle Valadian, MPH '53

Professor, *Emerita*, Maternal and Child Health
Past Chair, Department of Maternal and Child Health
Harvard School of Public Health

Isabelle Valadian always made herself available as a teacher and mentor to her students throughout her career at HSPH. As a result, her legacy is present throughout the world as international students have returned home to become public health leaders themselves. Her career-long research with the Longitudinal Study of Child Health and Development helped to establish that obesity and blood-pressure patterns persist from youth to adulthood and that adolescents have “growth spurts” at various ages; the finding helped refine the idea of chronological age, with the coining of the term “age of maturation.”

When Isabelle Valadian’s grade-school teacher asked her to write an essay on what she wanted to do when she grew up, she described “a fantastic trip around the world.” The teacher gave it a poor grade, asserting that it was “a dream, not a future.” During her 50-year association with HSPH, Valadian—who speaks six languages—mentored countless international students, many of whom invited her to visit after graduation. Although she hasn’t circled the globe in one fell swoop, she has crossed the Mediterranean Sea seven times, been to Taiwan three times, visited China and Greece twice, and popped in on a number of other student stomping grounds.

After growing up and attending schools in Iran (then known as Persia), Lebanon, and France, Valadian was already a world citizen when she arrived in Boston in 1949. “I believed from the very beginning that a school should put emphasis on teaching,” Valadian explains. “Research can support what you are teaching, but students should come first.”

She knew she would work in public health when she was in medical school at the French University in Beirut. “Every fall, there was an epidemic of typhoid fever. One year, some of the students and I went into the fields when the vegetables were ripening. They took vegetables from the ground and started eating them. I said, ‘You cannot do that. Don’t you know there’s an epidemic?’ They laughed at me, but two of them fell ill and one died. That was my first attempt at prevention. And so prevention became my goal from then on.”

“Dr. Valadian helped to create the conditions for people like me to thrive at the Harvard School of Public Health,” says Magda Peck, MPH ’83, ScD ’86, professor of pediatrics and public health at the University of Nebraska Medical Center and founding CEO of CityMatCH, a national organization of city and county maternal and child health leaders. “She promoted research but also understood that people in the field needed to know how to translate that research into action to get lasting results. She made it possible for us to do what we needed to do.”

John Peters has a habit of upending conventional wisdom. His doctoral thesis on college students who smoked pointed out subtle damage that showed up in just a few years rather than decades. His study of Boston firefighters, who did not wear face-masks at the time, provided the evidence behind development of new safety equipment for Boston and elsewhere. His studies of the Vermont granite industry proved that “allowable” exposure levels to respiratory silica still posed risks for chronic lung disease.

John Peters, MPH '64, SD '66

Hastings Professor of Environmental Health

Director, Division of Environmental Health in the Department of Preventive Medicine

Keck School of Medicine

University of Southern California



Before the Army drafted him, John Peters had set out to be a surgeon. Sent to care for military workers in the North and South poles and other remote locales, he immediately recognized that workplaces themselves could pose health risks, and found himself delving into what would become occupational and environmental health research.

In studies documenting risks to workers in the rubber industry, including the first epidemiological evidence associating vinyl chloride exposure to a rare liver cancer, Peters is most proud of having helped develop at HSPH a new type of research collaboration. “The opportunity to work in the first agreement between a company, a union, and a university was unique and gratifying—a new and better way of doing things,” he says.

That approach exemplified his work at HSPH. “Team efforts have gone into everything I’ve done,” he says. “I don’t take credit for anything other than trying to get smart people together to work on problems.”

In 1991, he launched the Children’s Health Study, which evaluates the chronic health effects of air pollution on elementary school children in and around Los Angeles. “It used to be that air pollution was thought to exacerbate but not cause asthma,” he says. “Our study turned up some good evidence that it causes it. That changed conventional wisdom.”

Larry Hand is associate editor of the Review.

D. MARK HEGSTED

D. Mark Hegsted, who was instrumental in the development of the federal “Dietary Guidelines for Americans,” died on June 16 at age 95. Hegsted was a founding member of the Department of Nutrition at the Harvard School of Public Health, among the first such departments in a medical or public health school in the world. His research demonstrated the effects of specific dietary fats and cholesterol on blood cholesterol levels. Many of his more than 400 papers also dealt with protein, responses to malnutrition, and the effects of calcium intake on osteoporosis.

Hegsted joined HSPH in the newly established nutrition department in 1942. In 1978, he was named administrator of human nutrition in the U.S. Department of Agriculture. In this role, Hegsted helped map out seminal nutrition guidelines that included recommendations to reduce meat consumption and increase intake of fruits and vegetables. His work helped inform the current guidelines, which are published by the U.S. departments of Health and Human Services and Agriculture and serve as the foundation of federal food and nutrition education programs.

Editor of *Nutrition Reviews* from 1968 to 1978, Hegsted remained actively engaged in nutrition research after his official retirement in 1980. He was president of the American Institute of Nutrition and served on advisory committees for the World Health Organization, Food and Agriculture Organization of the United Nations, National Institutes of Health, and the National Research Council. He was a member of the National Academy of Sciences and a fellow of the American Institute of Nutrition and of the American College of Nutrition. An annual lecture at the School—the Stare-Hegsted Lecture—is named after him and after Fredrick Stare, the founding chair of the HSPH Department of Nutrition.



Hegsted’s work helped map out fundamental nutritional guidelines to reduce meat consumption and increase intake of fruits and vegetables.

JEREMIAH “JERE” MEAD



Dr. Jeremiah (Jere) Mead, professor *emeritus* in the Department of Environmental Health, died on July 4 at age 88. A beloved figure in the department, Mead had a 37-year career at HSPH, retiring in 1987.

“He shaped the culture and science of lung biology in a way that endures,” says HSPH Dean Julio Frenk. “How we measure pulmonary function in humans is dominated by his ideas and technology.”

Mead began his career at the School as an associate professor in physiology in 1950 and was appointed professor of physiology in 1965. He made major scientific contributions to the control, prevention, and treatment of lung diseases, and was instrumental in developing the present field of respiratory mechanics. Working with researcher Mary Ellen Avery, Mead showed that fatal respiratory distress syndrome in newborns was

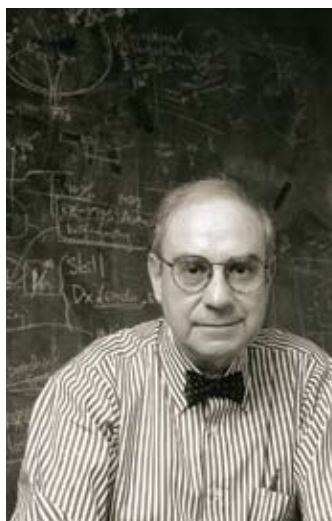
How scientists measure pulmonary function in humans is dominated by Mead's ideas and technology.

caused by abnormal surface tension in the lungs. The discovery led to a treatment that continues to save lives.

Mead's achievements in the study of respiratory biology led the School to appoint him as the first Cecil K. and Philip Drinker Professor of Environmental Physiology in 1975. In 1990, he received the Edward Livingston Trudeau Medal from the American Lung Association, in recognition of his career accomplishments. In 1996, he received the HSPH Faculty *Emeritus* Award of Merit.

His colleagues described Mead as a generous spirit who actively encouraged challenge and debate among junior investigators, for whom he was an influential mentor. His research was driven by curiosity and animated by strong collaboration with scientists in other disciplines. The Mead Fellowship was formed on the occasion of his retirement by his trainees, colleagues, and friends, and is awarded each year to an outstanding postdoctoral fellow training in respiratory biology.

ARMEN H. TASHJIAN



Tashjian's research contributed to a life-saving test for a precancerous condition associated with thyroid cancer.

Dr. Armen H. Tashjian, Jr., professor of toxicology *emeritus* and former chair of what was previously called the Department of Molecular and Cellular Toxicology at HSPH, died on July 3 at age 77. Tashjian was celebrated for his neuroendocrine research, which contributed to a life-saving test for a precancerous condition associated with inherited thyroid cancer and played a key role in the development of two osteoporosis drugs. He was also professor of biological chemistry and molecular pharmacology *emeritus* at Harvard Medical School (HMS). In June, Tashjian received the HSPH Faculty *Emeritus* Award of Merit for his contributions to the field of pharmacology.

Tashjian led the School's toxicology program for nearly three decades. As founding chair of the School's Department of Molecular and Cellular Toxicology, he pioneered research into the molecular mechanisms behind the toxicity of environmental chemicals and therapeutic agents. He also made seminal contributions to the field of endocrinology.

Tashjian graduated from Yale University in 1953, and earned his MD from Harvard Medical School in 1957. After working at the National Institutes of Health (NIH), he returned to HMS in 1961 and to the Harvard School of Dental Medicine, where he became an expert in parathyroid hormone and calcium metabolism. In later years, he was involved in the creation of the drug raloxifene, which is used to help prevent and treat osteoporosis and, more recently, to prevent breast cancer. He further contributed to the development of a separate drug for severe osteoporosis.

Tashjian was an officer in numerous scientific societies. He served on NIH study sections and government advisory panels, and on the editorial boards of numerous scientific publications, including the *New England Journal of Medicine*. Throughout his career, he was a devoted teacher, mentoring nearly 100 graduate students and postdoctoral fellows.



Alumni News

1955

Dr. Joyce Wilson Hopp, MPH, a distinguished *emeritus* professor in the Department of Health Promotion and Education, has been teaching at Loma Linda University School of Public Health in California since it began in 1967. She served as dean of the School of Allied Health Professions from 1986 to 2002.

Law, Bioethics, and Human Rights in BU's School of Public Health. The author or editor of 17 books, including *American Bioethics*, Annas is the cofounder of Global Lawyers and Physicians, a transnational nongovernmental organization dedicated to promoting health and human rights.

1960

Judith S. Stern, SM, ScD '70, was elected a Fellow of the American Association for the Advancement of Science in February. Stern is a distinguished professor in the departments of Nutrition and Internal Medicine at the University of California, Davis.

1979

Lorna Scott McBarnette, SM, died on March 17. She was 69. McBarnette had a long and distinguished career in government, health, and education. Most recently, she was vice president for institutional development and vice provost for health professions at American International University of Antigua School of Nursing. Previously, she was deputy commissioner of health of New York state. She also served as professor and dean of the School of Health, Technology and Management at the State University of New York at Stony Brook. Among her many other accomplishments, McBarnette,

1972

George Annas, MPH, was appointed the first William Fairfield Warren Distinguished Professor at Boston University in May. Annas is the Edward R. Utey Professor and Chair of the Department of Health



Alumni Weekend 2009: faculty member Nancy Kane takes questions from the audience.

who was born in Grenada, advised Caribbean government leaders on public health policy.

1985

Dr. Sylvie Stachenko, SM, became dean of the School of Public Health at the University of Alberta, in Canada, in January. Most recently, Stachenko served as Deputy Chief Public Health Officer at the Public Health Agency of Canada. From 2002 to 2004, she was the director general in the Centre for Chronic Disease Prevention and Control at the Public Health Agency of Canada. From 1997 to 2002, Stachenko worked with the World Health Organization Regional Office for Europe as the director of health policy and services.

at Jefferson Medical College in Philadelphia, where she continues to see patients. Widely respected in the field of medical journalism, Laine has authored articles on many subjects, including patient-centered communication, preventive care, women in medicine, and HIV/AIDS care.

1993

Dr. Bhaswati Bhattacharya, MPH, is now a holistic and preventive medical doctor in New York City. For the past two years, Bhattacharya has been working with the Dinacharya Institute, which hosts classes in holistic medicine and ayurveda for health professionals, and convenes groups of scientists, ayurvedic doctors, and mainstream physicians to develop dialogue for collaboration in education and research. Bhattacharya also earned the 2008 international award for outstanding service to Global Ayurveda by the Arogyadham Centre in India.

1992

Dr. Christine Laine, MPH, was named editor of the journal *Annals of Internal Medicine* in April. She is the youngest editor in the journal's 82-year history. Laine is a clinical associate professor of medicine in the Division of Internal Medicine



Alumni Weekend 2009: Alumni Award of Merit winner Dimitrios Trichopoulos (center) with colleagues and former students.

1994

Osei B. Acheampong, SM, is the director of research and development at the National Health Insurance Authority in Ghana. He is responsible for developing and monitoring systems for implementing the country's national health insurance scheme, in addition to initiating policies to improve access and quality of care.

1997

Dr. Yvette Roubideaux, MPH, was unanimously confirmed by the United States Senate as Indian Health Service Director on May 6. She served most recently as an assistant professor in the Department of Family and Community Medicine at the University of Arizona College of Medicine. She has conducted extensive research on American Indian health issues, with a focus on diabetes. Roubideaux previously worked in the Indian Health Service as a medical officer and clinical director on the San Carlos Indian Reservation and in the Gila River Indian Community. Roubideaux is a member of the Rosebud Sioux tribe.

1998

Kathleen O'Loughlin, MPH, became the American Dental Association's first female executive director in May. Previously, she was chief dental officer at United Healthcare and a consultant to Tufts University School of Dental Medicine and the Forsyth School of Dental Hygiene.

2001

Humayun J. Chaudhry, SM, health commissioner of Suffolk County, New York, had an op-ed published in *Newsday* on May 21. Titled "Flu tracking meets the 'tweet,'" Chaudhry's piece

describes the role technological advances in instant messaging and surveillance software are playing in helping public health officials share new information critical for safeguarding the public's health. Read the piece at: www.newsday.com/news/opinion/ny-opcha2112788251may20,0,118342.story.

2003

Dr. John D. Bullock, MPH, presented a paper to the American Ophthalmological Society in May titled "Root Cause Analysis of the Fusarium Keratitis Epidemic of 2004-2006 and Prescriptions for Preventing Future Epidemics." Bullock was the second person to report U.S. cases to the Food and Drug Administration (FDA) and the Centers for Disease Control and Prevention. The paper, his fourth on the outbreak, traces the epidemic to temperature instability of the antimicrobial agent in the commercial contact lens solution cited by the FDA, which had noted the failure of the company to regulate storage and transport temperatures of their product. Bullock teaches infectious disease epidemiology and is a clinical professor of community health and professor of mathematics and statistics at Wright State University in Dayton, Ohio.

Jennifer Weuve, SD, became assistant professor of medicine at the Rush Institute for Healthy Aging at Rush University in Chicago in July 2008. At Rush, Weuve is continuing to pursue research in environmental health and cognitive aging.

2006

Audrey Perlow, MS, graduated from the Northeastern University School of Law in May. She joined Health Law Advocates as a Parmet Fellow in September, and will be assisting low- and middle-income Massachusetts residents in obtaining health care coverage and access to benefits.

Dr. Thomas Halton, SD, published *The Weight Loss Triad* in February. The book presents a comprehensive weight-loss strategy, broken down into three areas: diet, cardiovascular exercise, and resistance training. The program is based on Halton's

doctoral research in Harvard School of Public Health's Department of Nutrition, as well as his more than 12 years of experience helping people lose weight. Halton has published in leading journals, including the *New England Journal of Medicine* and *The American Journal of Clinical Nutrition*. His research has also been featured in dozens of media outlets, including CNN, *The Wall Street Journal*, and *Newsweek*.

Alumni Affairs Goes Green

Update your e-mail address

TO REDUCE COSTS AND HELP SAFEGUARD THE ENVIRONMENT, HSPH's Office for Alumni Affairs is moving from paper mailings to electronic invitations and other information whenever possible. Be sure to stay abreast of upcoming events, timely news, and alumni council elections by updating your e-mail address at www.post.harvard.edu or contact Daphne Mazuz in the Office for Alumni Affairs at alumni@hsph.harvard.edu or 617-998-8814.

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HSPH In Brief

For more information about these topics and other breaking news, visit the HSPH website at <http://www.hsph.harvard.edu/news>. Use the search function to locate detailed press releases and articles.

[Research]

BPA QUICKLY LEACHES FROM BOTTLES TO HUMANS

Drinking cold liquids from polycarbonate, hard-plastic bottles for just one week can elevate the level of bisphenol A (BPA) in human urine substantially, according to a study by Harvard School of Public Health researchers published May 12 in *Environmental Health Perspectives*. "If you heat those bottles, as is the case with baby bottles, we would expect the levels to be considerably higher," says senior author Karin Michels, associate professor of epidemiology. Monitoring 77 Harvard College students, the researchers compared urine samples taken after a one-week "washout" period, during which the students drank cold beverages from stainless steel bottles, with samples taken after a week during which the students drank cold beverages from polycarbonate drinking bottles—the popular, hard-plastic bottles identified by the recycling code 7, sometimes with the letters PC, although 7 is also used for other types of plastics. Previous research has linked exposure to BPA to problems in reproductive development in animals and to heart disease and diabetes in humans. This is the first study to connect the plastic bottles to BPA levels in human urine. For more information, see www.hsph.harvard.edu/news/press-releases/2009-releases/bpa-chemical-plastics-leach-polycarbonate-drinking-bottles-humans.html.



DIABETES HIGHLY PREVENTABLE FOR OLDER AMERICANS

Most new cases of diabetes in older Americans could be prevented, according to a study published in the April 27 issue of *Archives of Internal Medicine*. All it takes is healthy lifestyle choices, including physical activity, a nutritious diet, no tobacco use, and maintaining a lower weight, researchers report. Led by HSPH Assistant Professor of Epidemiology Dariush Mozaffarian, the scientists tracked almost 4,900 men and women over age 65 over a 10-year period. They found that lifestyle factors contributed to 90 percent of new cases of type 2 diabetes. Learn more at www.hsph.harvard.edu/news/press-releases/2009-releases/majority-of-new-cases-of-diabetes-in-older-us-adults-could-be-prevented-by-following-modestly-healthier-lifestyles.html.

DIABETES STRIKES YOUNGER, THINNER ASIANS

Type 2 diabetes strikes at a younger age and lower body weight in Asian populations than in Westerners, according to a review of more than 200 studies of the disease in Asia between January 1980 and March 2009. In the United States, diabetes onset often occurs at ages 60 and over in people who are overweight or obese. In Asia, by contrast, the rate is increasing in young and middle-aged people who carry excess abdominal fat. The review's authors, led by HSPH Professor of Nutrition and Epidemiology Frank Hu, link rapid economic development, eating more Western-style foods, and increasingly sedentary lifestyles to an escalating diabetes epidemic in Asia. The review, published May 27 in the *Journal of the American Medical Association*, concludes that earlier diabetes onset and longer disease duration places Asians at high risk of developing heart and kidney disease and cancer. Diabetes prevention and control, they write, should be a top public health priority. For more information, see: "Obesity in China Portends Diabetes Disaster," *Harvard Public Health Review*, Spring 2009, www.hsph.harvard.edu/news/hphr/chronic-disease-prevention/spr09brown-rice/.

[Research]



A CALL FOR FULL DISCLOSURE ON CIGARETTE INGREDIENTS

Tobacco companies have continually changed the design of cigarettes over time—sometimes departing from even the industry's own guidelines—without advising consumers of the changes,

new research at HSPH has shown. Now that President Barack Obama has signed into law legislation authorizing the U.S. Food and Drug Administration (FDA) to oversee tobacco products, the researchers are calling on the FDA to require full disclosure on all product changes and to disallow changes that would make products even more harmful.

For a study published online June 19 in *Tobacco Control*, Greg Connolly, director of the HSPH Tobacco Control Research Program, and HSPH researcher Geoffrey Ferris Wayne analyzed tobacco companies' internal documents released after the 1998 Master Settlement Agreement. The documents described such changes as altering the smoke chemistry to enhance nicotine delivery, and modifying the levels of processed tobacco in products, which increases the delivery of harmful chemicals. Learn more at www.hsph.harvard.edu/news/press-releases/2009-releases/tobacco-control-fda-complete-disclosure-tobacco-companies-changes-cigarettes.html.

AGE OF MENSTRUATION, MENOPAUSE LINKED TO GENE VARIANTS

HSPH researchers and colleagues have identified gene variants associated with the age at which females first menstruate and with the onset of menopause. Because early menstruation and later menopause are associated with breast and endometrial cancer, and early menopause increases risk of osteoporosis and heart disease, studying these genetic variants could help identify ways to prevent these diseases, the authors write. The researchers were led by Chunyan He, now an assistant professor at Indiana University School of Medicine and a doctoral student at HSPH while the research was conducted. They identified 10 genetic variants associated with age of menstruation and 13 genetic variants associated with age of menopause. The study appeared on May 17 in *Nature Genetics*. Learn more at www.hsph.harvard.edu/news/press-releases/2009-releases/genetic-links-to-age-of-first-menstrual-period-and-menopause.html.



STUDY LINKS MOTHER'S HEIGHT TO CHILD'S HEALTH IN INDIA

The state of a mother's own childhood health could have an impact on children she may bear years later, according to a study by HSPH researchers published April 22 in the *Journal of the American Medical Association*. Led by

Associate Professor of Society, Human Development and Health S.V. Subramanian, researchers studied data on more than 50,000 children under age 5 included in India's 2005–06 National Family Health Survey. They concluded that children whose mothers were shorter than 4 feet 9 inches were more likely to die than children whose mothers were at least 5 feet 3 inches tall. The study viewed maternal height as an indicator of the mother's childhood health environment and suggested that shorter mothers were effectively passing their own poor childhood health on to their children. Learn more at www.hsph.harvard.edu/news/press-releases/2009-releases/transfer-poor-health-mortality-mother-child-india-height.html.

SMOKING, HIGH BLOOD PRESSURE CAUSE MOST EARLY DEATHS

Smoking causes about one in five premature or preventable deaths in American adults. High blood pressure leads to about one in six deaths. Other diet or lifestyle factors result in a smaller—but nonetheless significant—proportion of deaths. The data come from an HSPH study published April 28 in *PLoS Medicine*. Doctoral student Goodarz Danaei, senior author Majid Ezzati, HSPH associate professor of international health, and colleagues analyzed risk factors involved in about 2.5 million U.S. deaths in 2005. Other top causes of

early death included overweight/obesity, inadequate physical activity, high blood sugar and cholesterol, and high dietary salt. Learn more at www.hsph.harvard.edu/news/press-releases/2009-releases/smoking-high-blood-pressure-overweight-preventable-causes-death-us.html.



TAPLIN GIFT EXPANDS FELLOWSHIP FUND

Mrs. Virginia Taplin—who together with her late husband, John, has been a longtime Harvard School of Public Health benefactor—has made a significant new gift to the Taplin Family Fellowship Fund at the School.

Established in 1995, the fellowship fund has supported nearly 40 doctoral students at HSPH. Students helped through the fund have gone on to major achievements, including becoming a world-famous virologist and a senior health economist at the World Bank. Several now serve as faculty members at HSPH. Each year, members of the Taplin family gather to meet the students being currently supported, an exchange deeply enjoyed by both students and the Taplins. John Taplin, an accomplished inventor and entrepreneur, died in 2008 at the age of 94.

In addition to the fellowship fund, the Taplins over the years have funded equipment purchases that have moved the School's research agenda to a new level and have also established gift annuities dedicated to benefiting the HSPH Department of Biostatistics.

The new fellowship funding is also in the form of a charitable gift annuity—a simple arrangement under which a donor makes a gift to Harvard and Harvard guarantees that income generated by the gift will be given to the donor or other beneficiary during his or

her lifetime. At the beneficiary's death, the funds contributed are either spent down for the originally intended purpose—in this case, fellowship funding—or are used to create a permanent endowment that generates income for the intended purpose in perpetuity.

"John and I have had a long and enjoyable relationship with HSPH. John was always fascinated and encouraged by the School's focus on preventative actions," says Mrs. Taplin. "It has been a tremendous joy to see the impact of the Taplin Family Fellowships and to meet the fellows each year. After John's death, it was an easy decision to increase our commitment to the Taplin Fellowship Fund through another charitable gift annuity."



John and Virginia Taplin

ROSE GIFT SUPPORTS TRAVELING FELLOWSHIPS



Deborah Rose, SM '75

The Rose Traveling Fellowship Program in Chronic Disease Epidemiology and Biostatistics has been established with a \$250,000 gift by HSPH alumna Deborah Rose, SM '75. Each year, the program will give up to seven students or postdoctoral fellows an opportunity to travel to a country outside the United States for academic projects.

Public health exists in a multinational, multicultural world, and with the speed of travel and information networks, opportunities for cross-cultural exchange are widespread. Traditionally, opportunities in international

health have been strongest in the areas of family planning and infectious disease, mainly in developing countries. Yet chronic non-communicable diseases such as heart disease, obesity, and diabetes now account for more than 60 percent of deaths worldwide, four-fifths of those fatalities being citizens of low- and middle-income countries.

Thanks to the new fellowship program, students in biostatistics and epidemiology will have funds to pursue internships, research work, or other academic endeavors related to chronic diseases, in either a developing or developed country.

Students in turn will share their experiences with the larger School community upon their return.

"The goal of this initiative is to broaden the range of interests, programs, and countries that students in these two departments can be exposed to," says Rose. "I hope it will also serve to expand the opportunities for enrichment that international travel and professional involvement afford, at any stage of one's career."

DONATELLI GIFT TO FINANCE SCHOLARSHIPS

While HSPH strives to enroll the best, most motivated students regardless of their financial circumstances, currently the School simply does not have as much financial-aid money as students need. Thanks to a gift of \$500,000 from Harvard College and Harvard Law School alum Mike M. Donatelli, AB '79, JD '81, to establish the Mike M. and Evelyn B. Donatelli Fellowship Fund at HSPH, the School will have new resources for students pursuing masters or doctoral-level degrees.

Roughly half of HSPH's 400-plus graduates each year leave the School with significant student-loan debt. The average debt for a master's student, for example, is \$44,000. And the demand for more scholarship aid is growing, particularly among international students

and those from families hurt by the current economic downturn.

Donatelli says that he is making the gift to HSPH because he wants to help relieve students of the pressure to pay back student loans, and enable them to pursue the types of jobs that will benefit the public's health most—but that may not be as remunerative as other jobs an HSPH grad would be qualified to take.

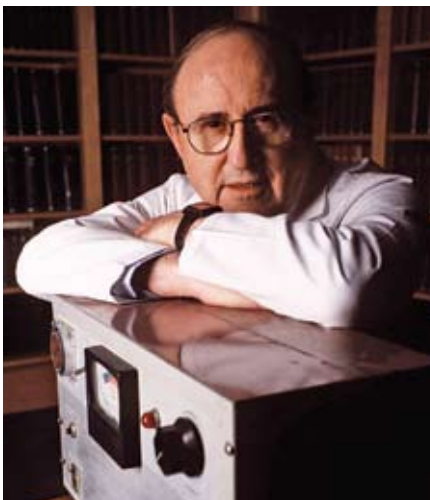
"It's our hope that by helping more students graduate debt-free or with only a small amount of debt," he says, "these students will feel free to pursue jobs such as directing a rural health clinic or researching the causes of childhood asthma in the inner city."

LOWN SCHOLARS PROGRAM TO TRAIN MID-CAREER PROFESSIONALS

A scholarship program to honor HSPH Professor Emeritus Bernard Lown has been established to train mid-career clinicians, scientists, nurses, and other health professionals in strategies to prevent heart disease in developing countries. The Bernard Lown Cardiovascular Scholars Program will select individuals from candidates meeting criteria for admission to HSPH, with the goal of creating an international community of Lown Scholars who will continue to interact throughout their careers.

Bernard Lown is acclaimed for his groundbreaking work on the causes and treatment of heart disease and cardiac arrhythmias, and for developing the direct current defibrillator. He is also renowned for his efforts to prevent nuclear war. He and a Russian colleague accepted the Nobel Peace Prize in 1985 on behalf of the organization that they co-founded, the International Physicians for the Prevention of Nuclear War.

Heart disease is reaching epidemic proportions in middle-income and poorer nations due to diet changes, high smoking rates, psychosocial stress, and sedentary lifestyles. "The Lown Scholars Program will help to train a new generation of public health leaders focused not just in treating heart disease but also in preventing the coming epidemic of cardiovascular disease," says Barry R. Bloom, Harvard University Distinguished Service Professor and the Joan L. and Julius H.



Bernard Lown

Jacobson Professor of Public Health. "This is an excellent way to honor the highly distinguished career and extraordinary contributions of Bernard Lown to global health and security."

As part of the program, Lown Scholars may periodically return to Harvard for stays of one week to several months, strengthening their collaborations.

The Bernard Lown Fund in Cardiovascular Health, which underwrites the scholars program, will also support a professorship at HSPH focused on teaching and research about heart disease prevention in the developing world.

ANONYMOUS DONOR MAKES \$500,000 UNRESTRICTED PLEDGE

An anonymous donor has made a \$500,000 unrestricted pledge to the School to ensure that HSPH faculty and new Dean Julio Frenk have additional resources to pursue whatever areas they believe are most important in public health in the next few years.

Unrestricted gifts—contributions made without limitation on their use—help support the School's most pressing needs in critical areas such as faculty research, student financial aid, post-doctoral fellowships, and technology investment. They also provide the Dean with latitude to take advantage of unanticipated opportunities and to address unforeseen challenges.

"Unrestricted gifts are particularly appreciated in challenging financial times like these," says HSPH Dean Julio Frenk. "It gives me the opportunity to support a student who may not have the money he or she needs to come here, or to fund a faculty member's new or groundbreaking idea for which government funding may not be available. I am very grateful to this donor for his generosity and foresight in making this gift."

[Philanthropic Impact] *continued*



STARR TO HEAD FUNDRAISING EFFORT

Ellie Starr joined HSPH in late June as the School's new Vice Dean for External Relations. Starr comes from the Perkins School for the Blind, where she served as executive director of the Perkins Trust.

During her tenure at Perkins, Starr restructured

Perkins' development office, built and led a team of development professionals to increase fundraising by 40 percent, and launched the largest fundraising campaign in Perkins' 180-year history.

A 17-year veteran of the development field, Starr spent eight years at Dana-Farber Cancer Institute (DFCI) prior to her time at Perkins. At DFCI, Starr built the highly successful principal and major gifts efforts and developed fundraising strategies and plans for the \$1 billion Mission Possible Campaign, the largest in DFCI history. She led teams that raised hundreds of millions of dollars.

Starr began her development career at Brandeis University, where she planned and implemented strategy to develop and cultivate

planned and major gifts.

HSPH's fundraising and alumni relations efforts will report to Starr. "The School's mission to translate knowledge into programs and policies that improve the health of millions of people is extremely compelling. That mission and the multidisciplinary way the School approaches its work are what draw me here," says Starr, "I am honored to have the opportunity to lead a team of fundraising professionals and work with Dean Frenk and all the talented HSPH faculty, alumni, students, and donors to promote that mission."

"Ellie joins HSPH with a wealth of fundraising experience, a lifelong passion for issues of public health, and solid experience in building and growing successful development teams," says HSPH Dean Julio Frenk. "I see her work, and the efforts of those working with her, as the essential bridge between our academic community and the business and philanthropic communities." To reflect that dual function, Dean Frenk has chosen to rename the Office for Resource Development the Office for External Relations.

"I know our donors and friends will enjoy working with her and the entire external relations team as we endeavor to attract funds to support our vital mission," says Dean Frenk.

[New Initiatives]



Wafaie Fawzi,
HSPH professor
of nutrition and
epidemiology

BANGALORE BOSTON NUTRITION COLLABORATIVE TO FOCUS ON TRAINING

To address the emerging burden of preventable chronic disease in India, HSPH teamed up with Tufts University and the St. John's Research Institute in Bangalore, India, to establish the Bangalore Boston Nutrition Collaborative. Headed by Program Manager Christopher Duggan, MPH '94, HSPH associate professor of nutrition, the collaborative will develop and deliver Web-based courses in epidemiology, biostatistics, nutritional epidemiology, and nutritional biochemistry for students at St. John's. In addition, promising students will come to Boston for further

graduate training. HSPH, Tufts, and St. John's faculty members will lead seminars and mentor students in Bangalore.

Funding from a private foundation will sustain the collaborative for two years, during which time collaborative members will evaluate its performance and apply for additional funding. Wafaie Fawzi, HSPH professor of nutrition and epidemiology, will serve as co-investigator with the collaborative. Anura Kurpad, dean of St. John's and head of its nutrition department, will direct the project in Bangalore.

HHI ESTABLISHES TRAINING PROGRAM IN INDIA

The Harvard Humanitarian Initiative (HHI) and the Public Health Foundation of India (PHFI) launched a five-year program in April 2009 to train public health professionals to respond to monsoons, potential terrorist attacks, or other man-made or natural disasters. Headed by HHI Co-Director Jennifer Leaning, the collaboration will develop a state-of-the-art, globally influenced curriculum designed to build India's capacity to respond to public health emergencies.

Among the collaborative's objectives: to create a new cadre of public health professionals skilled in managing emergencies, and to build a research base on disasters and humanitarian crises in India that will shape the teaching curriculum and inform policy recommendations. Collaboration funding will come from joint fundraising efforts and existing resources.

New Academic Deans Named



David Hunter
Dean for Academic Affairs

Longtime HSPH faculty member David Hunter became dean for academic affairs on August 1. He is the Vincent L. Gregory Professor of Cancer Prevention, and professor of epidemiology and nutrition. In recent years, Hunter has led teams that co-discovered the most common genetic variants associated with breast and prostate cancer risk.

"It is with great enthusiasm that I welcome Professor Hunter to lead the expanded academic executive team at the School," Dean Julio Frenk says. "I look forward to working with him to maintain and strengthen the School's excellence and leadership position among schools of public health."

Hunter's principal research focuses on the origins of cancer, particularly breast and prostate cancer. He has analyzed inherited susceptibility to cancer and other chronic diseases and established the Dana-Farber/Harvard Cancer Center Core Laboratory for High-Throughput Genotyping at the School. He is co-chair of the National Cancer Institute's (NCI) Breast and Prostate Cancer Cohort Consortium, and a co-director of the NCI Cancer Genetic Markers of Susceptibility Initiative. Earlier in his career, Hunter helped develop HSPH's collaborations with colleagues in Tanzania studying interventions to reduce HIV incidence and disease progression. He has taught a variety of courses ranging from HIV Epidemiology and Field Methods to Genetic Epidemiology.

NEW POSITIONS CREATED TO STRENGTHEN ACADEMIC ADMINISTRATION

Dean Frenk also created two new positions within the School's academic administration. Michael Grusby, professor of molecular immunology, became senior associate dean for academic affairs. Karen Emmons, professor of society, human development, and health, became associate dean for research, on July 1. These positions, says Frenk, will allow Hunter to focus on strategy around academic planning and improve service to the HSPH community on issues related to research and education, students, and faculty.

For the past three years, Grusby has served as the director of the PhD in Biological Sciences in Public Health Program within the Division of Biological Sciences at HSPH. His research focuses on the role of a class of transcription factors called signal transducer and activator of

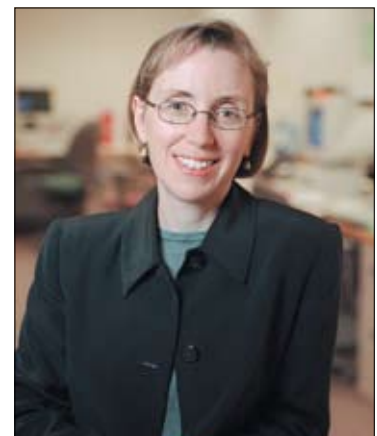


Michael Grusby
Senior Associate Dean for Academic Affairs

transcription (STATs), which operate in the differentiation and function of T helper cell subsets. Studies from his lab have shown how manipulating STAT activity can alter the function of T helper cells and therefore change the outcome of diseases such as asthma and diabetes.

In her new role, Emmons works with Hunter and the School's financial and research administration, while continuing to do

research half-time. In addition to being a professor at HSPH, Emmons has been based at the Dana-Farber Cancer Institute, where since 1999 she has served as deputy director of the Center for Community-Based Research. She has held leadership roles within the Dana-Farber/Harvard Cancer Center, including director of the Health Communications Core and associate director for the Initiative to Eliminate Health Disparities. Emmons' research focuses on behavior change and policy interventions for behavioral risk factors in cancer, particularly for low-income communities. She also specializes in cancer disparities research, and in efforts to increase the dissemination and translation of health research in low-resource settings.



Karen Emmons
Associate Dean for Research

OTHER FACULTY NEWS



Victor De Gruttola, professor of biostatistics, was named chair of the Department of Biostatistics in June. He had served as acting chair since January. De Gruttola has spent most of the past 23 years teaching and conducting research in the department. He has helped develop statistical methods required for appropriate public health response to the AIDS epidemic, both within the U.S. and internationally. His focus has been on the transmission and natural history of infection with the human immunodeficiency virus (HIV) as well as the development and consequences of HIV drug resistance.

De Gruttola served as the director of the Statistics and Data Analysis Center of the Adult Project of the AIDS Clinical Trials Group during the period in which highly active antiretroviral treatments were developed. He was also instrumental in designing and analyzing

studies to identify the best means of providing such therapy. He also has served on National Institutes of Health (NIH) study sections, Food and Drug Administration advisory panels, and on Institute of Medicine committees.



Marianne Wessling-Resnick, professor of nutritional biochemistry in the Department of Genetics and Complex Diseases, became the director of the Biological Sciences in Public Health Program at HSPH on July 1. Wessling-Resnick has played an important role in the School's educational programs for many years and is program director for three major training grants that have contributed to shaping interdisciplinary interactions between various departments at the School.

As a researcher, Wessling-Resnick focuses on genetic

disorders of iron metabolism at the molecular level and their implications in complex disease. Her laboratory was the first to define transferrin receptor-2 as the critical "iron sensor" of circulating serum iron levels. More recently, her work has focused on the influence of iron deficiency and overload in the absorption of inhaled metals. Wessling-Resnick will become chair of the National Institutes of Health Integrative Nutrition and Metabolic Processes Scientific Review Committee next fall.



John David, Richard Pearson Strong Professor of Tropical Public Health *Emeritus*, HSPH, and chief, Division of Tropical Medicine, Department of Medicine, Harvard Medical School, was recognized as an outstanding pioneer in the field of biotechnology by the New York University School of Medicine

Biotechnology Study Center at an awards ceremony in April. He was cited for the discovery and cloning of the first cytokine—a small protein molecule involved in the immune response—and for his work applying modern immunology to the study of global disease.

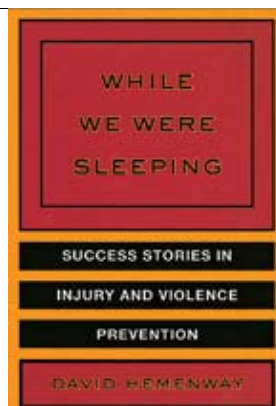


Rima Rudd, a senior lecturer in the Department of Society, Human Development, and Health, was honored by the Partnership for Clear Health Communication at the National Patient Safety Foundation with a prestigious Pfizer Health Literacy in Advancing Patient Safety Award. The Partnership cited her work as a pioneer in the field of health literacy, which aims to help low-literacy populations better navigate the health care system.

BOOKSHELF

While We Were Sleeping: Success Stories in Injury and Violence Prevention

David Hemenway
University of California Press
248 pages



Public health has made our lives safer, but it often works behind the scenes, without our knowledge—that is, "while we were sleeping." This book powerfully illuminates how public health works, with more than 60 success stories drawn from the field of injury and violence prevention. It also profiles dozens of individuals who have made important contributions to safety and health. Highlighting examples from the United States and other countries, *While We Were Sleeping* will inform a wide audience of readers about what public health actually does, and at the same time inspire a new generation to make the world a safer place.

Clearing The Air *continued from 33*

and psychology and apply them to epidemiology to create something different.”

Baja’s passion for math has taken him down several different paths, including jobs in banking and consulting. But while earning his master’s degree in applied mathematics from the University of the Philippines, he worked on an analysis of the toxicity of pesticides and discovered that his skills could be put to use in making the world a healthier place.

After he graduates, Baja hopes to continue working in air pollution research, perhaps for a nongovernmental organization in Southeast Asia where he sees a strong need for data collection. Or, he says, he may find another way to pull together his wide-ranging background. “I’d love to create public service campaigns for public health issues.”

Amy Roeder is the development communications coordinator in the Office for External Relations at HSPH.

LANDMARK HSPH STUDY SETS THE STANDARD IN AIR POLLUTION RESEARCH

Launched by faculty members in HSPH’s Department of Environmental Health 35 years ago, the Harvard Six Cities Study evaluated the effects of air pollution on the respiratory health of thousands of Americans and found a strong link to premature death. Its findings, released in 1993, led to the revision of air quality standards by the U.S. Environmental Protection Agency (EPA). Data produced by the study and its many spin-offs continue to strongly influence American air quality policy, including further strengthening particulate emissions standards by the EPA in 2006 and recognizing indoor air pollution as a significant contributor to health problems. Follow-up studies have shown that people are now living longer in cities where fine airborne particulate matter has been reduced.

Read more about the original study in “A Tale of Six Cities” at

www.hsph.harvard.edu/review/a_tale.shtml.

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Program for Chiefs of Clinical
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The Wrights' Stuff *continued from 27*

in New York. "He's at the forefront of looking at children's health and at the toxicity of exposure to low levels of metals which five years ago were thought to be safe."

Further research into the effects of lead, iron, manganese, and other metals, Landrigan added, could likewise usher in changes in the way medicine is practiced.

BRIDGING SOCIETY AND ENVIRONMENT

The Wrights are part of a new breed of so-called "transdisciplinary" researchers at leading academic institutions such as Harvard. Although it is common for researchers from

Hospital, Boston Medical Center, and urban health centers in Boston, in addition to women participating in federal Women, Infants, and Children programs in Boston and suburbs.

Both Wrights are working on a Mexico City study of social stressors, iron deficiency anemia, and lead exposure as environmental risk factors for poor neurodevelopment in children. Robert was senior author on an April 2008 *Environmental Health Perspectives* study showing that iron metabolism gene variants can modify lead metabolism and boost blood lead levels in young children in Mexico

Can the complications of lead poisoning in children be eased if life stressors are reduced?

different fields to collaborate on studies in which each person brings his or her own special expertise to the table, the National Institutes of Health is increasingly funding studies in which a single researcher develops expertise across multiple disciplines.

Robert, first a pediatric toxicologist, expanded his expertise into genetics. Rosalind, first an adult pulmonary specialist, took on social and environmental determinants of health. They work separately on individual efforts and together as principal investigator and co-investigator in other studies.

Currently, Robert is leading an investigation, and Rosalind is one of the co-investigators, of children's exposures to toxic metals at the Tar Creek Superfund site in Oklahoma. More than 40,000 people live in this 50-square-mile area where mining waste has left lead, manganese, cadmium, and other potentially harmful metals in the ground and water. There is the first large-scale study into how exposure to manganese and arsenic at early ages may cause harm later in life.

Rosalind is also leading a major effort, and Robert is a co-investigator, for the Asthma Coalition on Community, Environment, and Social Stress, a study of how early life stressors, starting in pregnancy, affect the future risk of asthma in urban children. Study subjects include mothers and their children receiving care at Brigham and Women's

through gene-environment interactions. Their current study will lay the groundwork for development of social interventions based on scientific evidence.

Their work, says HSPH Department of Environmental Health Chair Douglas Dockery, "is a microcosm of what we do here at the School. The Wrights are bridging the physical environment and the social environment and the genetics, bringing together social sciences and biological sciences that were previously separated."

"What we're trying to do is stop looking at silos of disease causation—how much is due to genetics, chemicals, exposure to metals, or nutrition—and, instead, look at them all at once, to see how they interact," says Robert. "That's what happens in real life."

Admittedly, their decades of collaborative work on such a complex public health topic won't lead to a profitable "magic bullet" for medicine. "What we're studying probably won't make a lot of money for a company. And I can't imagine a firm selling social and behavioral interventions," Robert says. "But when you invest in children, it is better for society—and not just because they can contribute and pay taxes and bring in revenue. They also lead more meaningful lives."

Larry Hand is associate editor of the Review

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70	6.2%	8.6%	12.8%
70/70	5.8%	7.8%	12.0%
80	8.0%	11.3%	14.4%
80/80	7.5%	9.4%	12.0%



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HSPH Faces of the Future

At its 2009 commencement, HSPH awarded degrees to 491 students in the School's 86th graduating class:

278 master of public health degrees
128 master of science degrees
54 doctor of science degrees
16 PhDs
13 master of arts degrees
2 doctor of public health degrees

Graduates came from 60 countries, 39 U.S. states and Puerto Rico.

More than half were women.

Our commencement speaker was acclaimed author Atul Gawande, associate professor of health policy and management at HSPH and surgeon at Brigham and Women's Hospital. Our student speaker was MPH Graduate Hope O'Brien.

View photos and videos of the day's ceremonies and celebrations at www.hsph.harvard.edu/news/commencement-2009.

