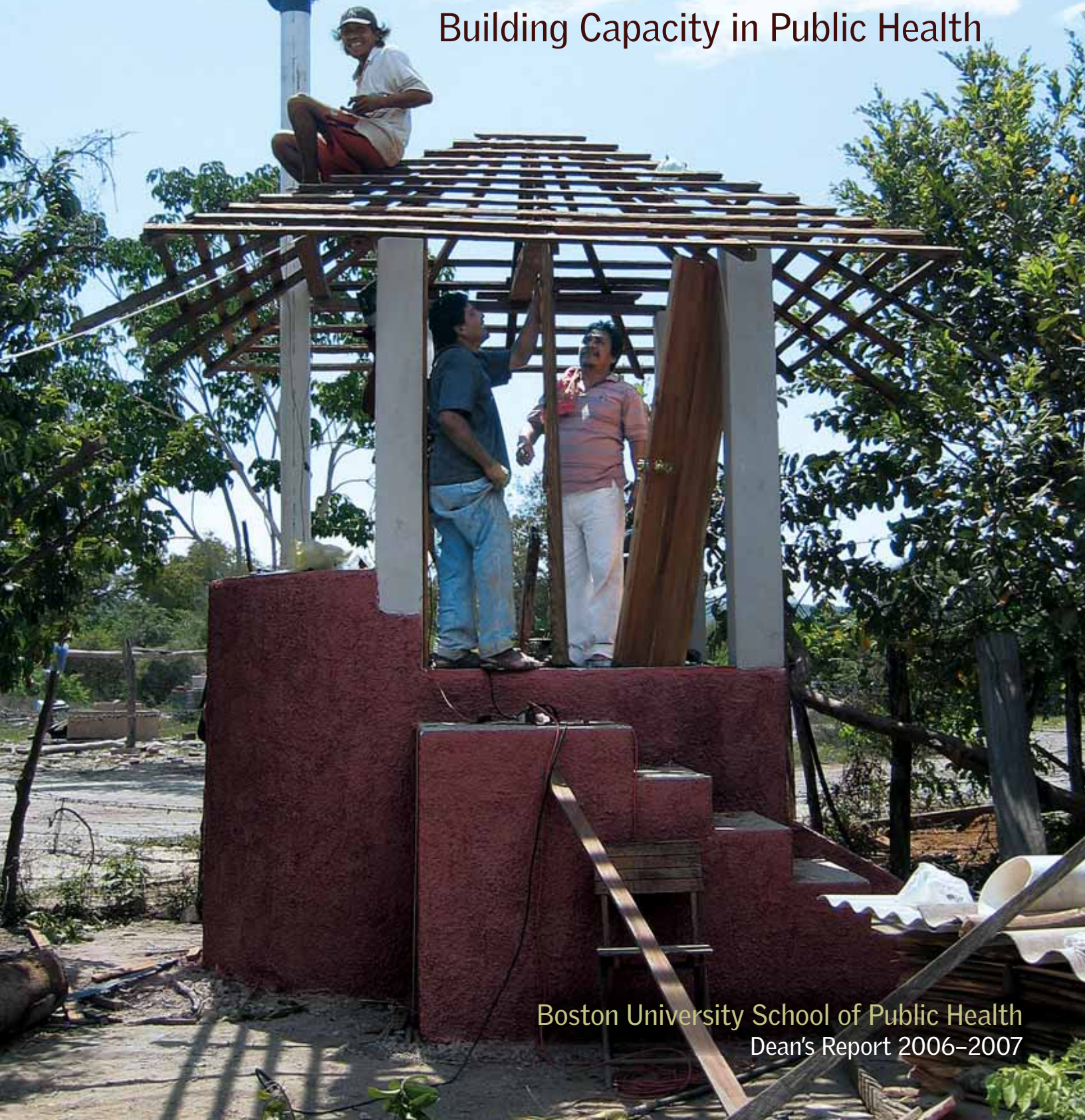


INVESTING IN THE FUTURE

Building Capacity in Public Health



Boston University School of Public Health
Dean's Report 2006-2007

Investing in the Future

Building Capacity in Public Health

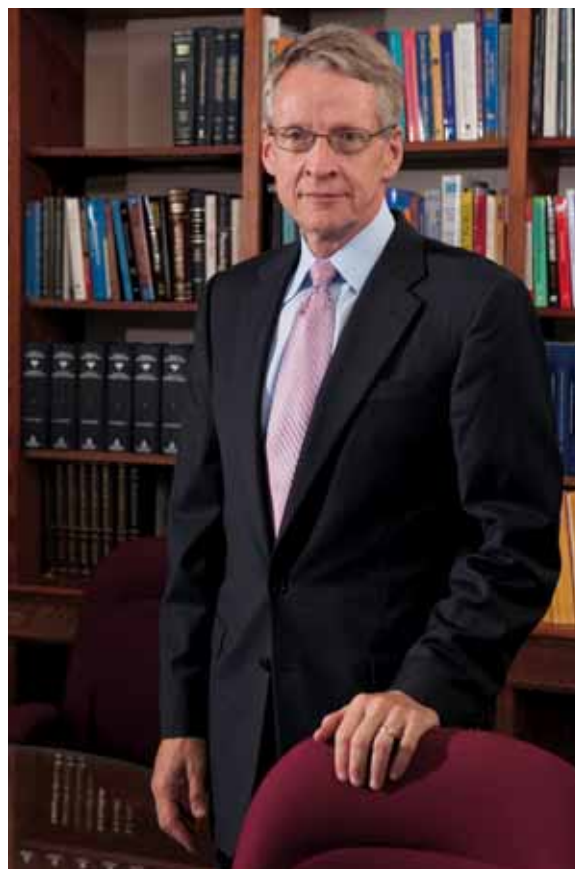
I am pleased to present the 2006–2007 edition of the Boston University School of Public Health *Dean's Report*, an annual publication that offers a window into the life and work of the School and its faculty. In the following pages, you will find articles about faculty activities that address some of the most pressing public health issues of our time: AIDS in Africa, addiction in America, sustainable sanitation in Mexico, as well as collaborative work with Boston public housing residents to reduce asthma symptoms in children through safer pest management.

While each endeavor represents the interests and work of individual faculty members and their collaborators, all the work shares a common goal: capacity building—which entails helping populations construct effective strategies and systems to address public health problems, in particular those that arise out of poverty and social exclusion.

BUSPH enables this work not only by functioning as an incubator for the vital research conducted by the faculty, but, perhaps more importantly, by teaching and training the next generation of public health academics and public health practitioners. The scholars we educate will be the public health faculty of the future who will create and disseminate new knowledge. The practitioners we train will be the public health professionals who will improve the health of populations through their work at the Boston Public Health Commission, at local public health departments, and at NGOs in urban centers and remote field stations around the world.

To fill its important niche in the public health network, BUSPH must ensure that it can build its own capacity to grow and improve in the years ahead. To that end, we are embarking on a decade of development for BUSPH. With the help of some extraordinarily talented and committed individuals who have agreed to serve on a new Dean's Advisory Board, we will seek the financial support the School needs to strengthen its ability to support both the people and the programs that will truly make a difference for public health in these increasingly challenging times. The article that follows introduces the leadership for the board.

The opportunity to prevent disease and promote health for millions of people is what the academics and practitioners who dedicate their lives to public health find so satisfying about the field; it is truly among the most important work we do for one another as human beings—and it is truly worthy of significant financial support.



Robert F. Meenan, MD, MPH, MBA
Dean

Stephen Waters and Jeannine Rivet to Lead Dean's Advisory Board

Embarking on a Decade of Development

SIGNALING THE START of a decade of development for Boston University School of Public Health, Dean Robert F. Meenan announced recently the formation of a new volunteer committee—the Dean's Advisory Board—that will assist him and the School in strategy and resource development. Meenan named Stephen Waters, co-founder and partner of Compass Advisors, LLC, an independent financial advisory firm, as chair, and Jeannine Rivet ('81), executive vice-president of UnitedHealth Group, as vice chair. Additional members will be announced at the time of the new Board's inaugural meeting.

"In the 31 years since its founding, BUSPH has become recognized as a leading graduate school and as a force in public health research," said Meenan. "The School has been true to its mission of improving the health of populations—especially the poor and disadvantaged—by educating top-notch public health practitioners and by conducting applied research that makes a measurable difference in the lives of the populations we serve, locally and around the world," he said.

"Steve Waters and Jeannine Rivet bring formidable skills and expertise to this enterprise, and I am thrilled and honored that they have agreed to lead our upcoming development and planning efforts," said Meenan.

With its focus on financial development, the Dean's Advisory Board replaces the former BUSPH Board of Visitors, an advisory and advocacy group that served the dean and the School for many years. "Over the last decade, the BUSPH Board of Visitors provided invaluable advice and perspective to the School during a time of tremendous growth and expansion. I want to thank the past members of that Board for their time and counsel," said Meenan.

STEPHEN WATERS

Of his new leadership role at BUSPH, Stephen Waters remarks, "I enjoy working to help raise money for causes and institutions that are trying to be as good as they can be. I have had a chance to do so for Harvard many times, but I've also done so for summer camps, our local church and several local charities. Fund raising for financial aid is particularly gratifying, because it allows students to attend good schools without an undue financial burden."

Waters has been involved with BUSPH for many years. "I worked with Bob Meenan as a member of the School's Board of Visitors back in the early 1990s, focusing on a plan that laid the foundation for what the School has become today. I would enjoy following up on that work by helping to put the School on a financial footing worthy of that vision. Bob and I were college roommates, and I respect greatly his vision, energy and persistence in bringing the School a long way over the past several decades," notes Waters.

An investment banker for more than 30 years, Waters is the co-founder of the international investment firm, Compass Advisors, LLC, which provides investment advice to clients, including multinational corporations, private foundations, pension funds and high net-worth individuals. Waters also created the Compass Partners European Equity Fund, a \$917 million concern focused on Western Europe, the largest "first-time" account ever established for European investment.

Waters worked for Morgan Stanley from 1988 to 1996, serving as co-head of Mergers and Acquisitions from 1990 to 1992 and co-chief executive officer of Morgan Stanley Europe from 1992 to 1996. He was also a member of Morgan Stanley's worldwide 12-person Operating Committee. He joined Morgan Stanley from Lehman Brothers, where he served as co-head of Mergers and Acquisitions from 1985 to 1988, having co-founded the department in 1977 and become a partner in 1980. He presided over some of the largest deals transacted during the 1980s, a decade known for intense merger activity.

A magna cum laude graduate of Harvard College and a Baker Scholar at Harvard Business School, Waters has been a dedicated fund-raising volunteer and active member of a number of committees for both the college and the business school. In 2000 and 2005, the Harvard Fund honored Waters by presenting him with the Albert Gordon Associates Award. He is on the board of Boston Private Financial Holdings and the Investment Committee of Princeton Seminary. He also serves as Vice Chairman of the United States Naval Institute.



JEANNINE RIVET

Jeannine Rivet, who earned a master's in public health at BUSPH in 1981, is focused on external strategic and business relationship management and customer and public relations in her job as executive vice president of Minnesota-based UnitedHealth Group, the nation's second-largest health insurer.

She is also the company's executive liaison to the pharmaceutical industry. She has been a driving force in challenging the health care industry to enhance health and well-being through information, collaboration, and advancement of optimal health care decisions for patients and health care professionals.

Rivet has been involved as a volunteer at BUSPH for many years. "BUSPH has an excellent reputation as a school and is also well-positioned to be a leading force in some of its core research areas such as addiction research and pharmaceutical effectiveness and in its global health research in AIDS and malaria," she says.

"In his 15 years as dean, Bob Meenan has brought strategic planning discipline and good management practice to the School. More than 10 years ago, he began asking 'what is the School today, what do we want to be and how best can we get there,'" Rivet notes. "By encouraging the development of multidisciplinary research centers, Bob has also built a well-integrated institution with effective collaboration among faculty of different disciplines. I find this steady planning and management appealing and worthy of support, and I hope to help the School continue to identify strategic areas of growth and expand the financial resources to develop them."

In addition to a master's degree in public health from BUSPH, Rivet also holds a bachelor's degree in nursing from Boston College. Early in her career, she worked as a registered nurse before entering the managed care industry. She serves on the Executive Council of UnitedHealth Group and numerous industry and academic leadership councils. From 1998 to 2000, Rivet was recognized by *Fortune* Magazine as one of the fifty most powerful women in American business. She was the honored recipient of a BUSPH Alumni Award in 1999 and a Boston University Alumni Award in 2005.



Since 1980, asthma rates in young children have been on the rise in the United States. And in urban areas, where children are exposed to a variety of outdoor and indoor pollutants, researchers have established a firm link between acute asthma symptoms and infestations of cockroaches and other pests that are associated with poor housing conditions. In public housing developments, residents often turn to pesticides to deal with bugs, which add to in-home toxic exposures and may exacerbate asthma symptoms.

Professor of Environmental Health Patricia Hynes at Boston University School of Public Health knows there is a better solution. Working with the City of Boston and residents of public housing, she and colleagues have launched the Healthy Pest-Free Housing Initiative, which seeks not only to rid people's homes of cockroaches through more environmentally sound methods of pest control, but also to control the amount and types of pesticides people use. An example of community-based participatory research, the

the U.S. Department of Housing and Urban Development (HUD) and the U.S. Environmental Protection Agency (EPA), was launched in 2000 and was co-directed by Hynes at BUSPH and by researchers from Harvard School of Public Health and Tufts University. Throughout the project, researchers have worked closely with city agencies, community organizations, and residents of public housing.

"This type of project is very hard for a university to do on its own," observes Hynes. "You must have partners who

A MODEL SOLUTION

initiative advances public health science while it addresses problems that matter to the people whose lives are most affected. The ultimate goal: improve the health of the Boston residents in public housing who are participating in the intervention and create a model that can be replicated in public housing throughout the country.

"The goal of this project is not only to improve housing conditions here in Boston, but to influence public policy in a way that could improve the health of millions of people living in public housing in cities around the country," says Hynes, MS, MA, professor of environmental health. "We know that an integrative approach to pest management in multifamily, low-income housing is doable. We are doing it."

The first phase of the multimillion-dollar research project, funded by the W. K. Kellogg Foundation, as well as

are trusted by their communities in order to attract residents and participants from public housing. Decisions about the research are not made in isolation by the universities. We all sit at the table as equals with our community partners. We all bring our ideas for research and intervention design and they are addressed as a group until consensus is achieved."

Edna Carrasco of the Committee for Boston Public Housing, a tenants' advocacy group and one of the project's community partners, says that residents wanted to know that the research would produce actual benefits for them.

"They want to make sure the researchers were not just conducting studies and then leaving with the data," Carrasco says. To that end, tenants were hired as data collectors and educators and became part of the study, which increased their faith in the work.



OLUTION

Public housing residents work
toward healthier homes

Hynes came to BUSPH in 1995 having worked for the EPA as an environmental engineer, overseeing the cleanup of hazardous waste sites. While teaching at MIT in the early 1990s, she wrote *A Patch of Eden*, a book about community gardens in inner cities. That experience shifted her focus in the field of environmental health to inner cities, and she found the collaboration with city agencies, community agencies, and community residents a natural model for action research.

"Residents and researchers have to solve problems together," Hynes observes. "You define the problem first, and then the challenge is to figure out the solution."

The problems in this case were obvious. Asthma has nearly doubled in prevalence since 1980 and has increased in young children by 135 percent, with low-income minority

the cockroach antigens exacerbate asthma in children who are sensitized, and it is strongly suspected that they may also initiate asthma," she adds.

While the Boston Housing Authority had its own pest control programs in place, Hynes notes that traditional spraying has largely been unsuccessful.

The study was designed to test a new method of pest control, Integrated Pest Management (IPM), which uses a combination of strategies, including cleaning the residential units with a high-efficiency vacuum, removing clutter, removing sources of food and water for the bugs, sealing cracks and crevices, monitoring cockroach prevalence using sticky traps. Whenever necessary, IPM includes careful application of a new generation of chemicals that are safer for humans because they are delivered in non-volatilizing

"The goal of this project is to not only make things better in the city, here, but that it influences public policy across the country. If it can be done here, it can be done just about anywhere." —Pat Hynes



Michael Arias lives with his mother, Maria, at Archdale Village in Roslindale, Mass.



children in older cities at highest risk. At the same time, the link between asthma and poor housing conditions, including pest infestation, had been increasingly well established.

Research data gathered by the Healthy Public Housing Initiative (HPHI), as the project was known in its first phase, "showed that 60 percent of asthmatic children in public housing developments react to cockroach allergens," notes Hynes.

Thus the subsequent intervention was designed to "minimize if not eliminate the cockroaches and cockroach antigen and follow the children over the course of a year, to see if their asthma symptoms improved. It is known that

gel rather than spray form and target the pest and not the living environment. In fact, IPM has been used extensively in agriculture for some time.

Working with the Boston Housing Authority, the Boston Public Health Commission, and the Committee for Boston Public Housing, the team of researchers found 44 families, with a total of 57 asthmatic children, who were willing to serve as participants in two pilot projects. The public housing units were located in the West Broadway development of South Boston and the Franklin Hill development of Dorchester.

Members of the team tested each home and found high levels of cockroach allergens in approximately half of



the homes. Every home tested ultimately confirmed the presence of at least one pesticide that had been banned or restricted to non-residential use. "We then learned these products are available in local neighborhood stores, especially bodegas," says Hynes. The pesticides, including one called Tempo, are highly toxic, particularly in the undiluted form in which they are sold to residents, and are being sold illegally.

This first phase of the project, which cost \$2.5 million and ran from 2000 to 2004, found evidence that the intervention program had improved children's symptoms—including breathing difficulties, problems sleeping, limitations on play activities, and even their emotional well-being. Hynes says these determinations were made by using a validated instrument, the Juniper Pediatric Asthma Quality of Life Questionnaire.

Resident participants were also interviewed and reported fewer pest problems since the start of the program, she says. Interviews, surveys, and inspections were conducted by 20 public housing residents who were trained as researchers and educators.

The second phase of the project, the Healthy Pest-Free Housing Initiative, was launched in 2006 with additional funding of \$2 million from the Kellogg Foundation. This IPM demonstration and education program is being conducted in the Boston Housing Authority in collaboration

with residents of public housing. In this phase, BUSPH's role is to evaluate the program and to train residents to serve as IPM educators in matters related to asthma and pest control.

This stage involves implementing the new IPM program in a total of 18 housing developments across Boston, over a period of three years. The initiative will evaluate the effectiveness of the pest management program by comparing the number of pest-control work orders requested by residents before and after implementation and by reviewing the pest-control records for change in cockroach infestation. Annual housing-unit inspection reports will also be evaluated and residents will be interviewed regarding their health, stress levels, and perceptions of pest-control effectiveness.

As part of the program, residents trained in IPM and asthma advocacy will visit families in the developments, introducing basic health information about pests, asthma, IPM and pesticides. These residents "will educate tenants about the risks and hazards of using pesticides," says Hynes. "They will encourage the residents not to use them, but to let the gels and baits work."

A public information campaign will also be conducted in public housing about the health risks of pesticides, and a 'buy-back' program will encourage residents to give up their old, toxic pesticide products.



As part of the program, residents trained in IPM and asthma advocacy will visit families in the developments, introducing basic health information about pests, asthma, IPM, and pesticides.

As noted, a campaign initiated by the Boston Public Health Commission will encourage bodegas to stop selling pesticides that are known to be harmful or illegal. Rather than penalize owners for stocking the illegal products, however, "the goal is to dry up the source and the demand through education," notes Hynes.

At the same time, the initiative will work in collaboration with the Boston Housing Authority (BHA), over a three-year period, to train managers, maintenance staff, and residents about IPM with the goal that every housing development will adopt IPM as their method of pest control.

Gail Livingston, director of property management and operations for the BHA, says the agency is sold on the benefits of integrated pest management and it is her intent that it be used throughout all of its developments. She says getting the tenants involved in the process is critical to the success of the integrated approach.

"The key is tenant education, getting the tenants involved," says Livingston. "They have to understand there are things they can do to make extermination more effective. People have been very receptive to that."

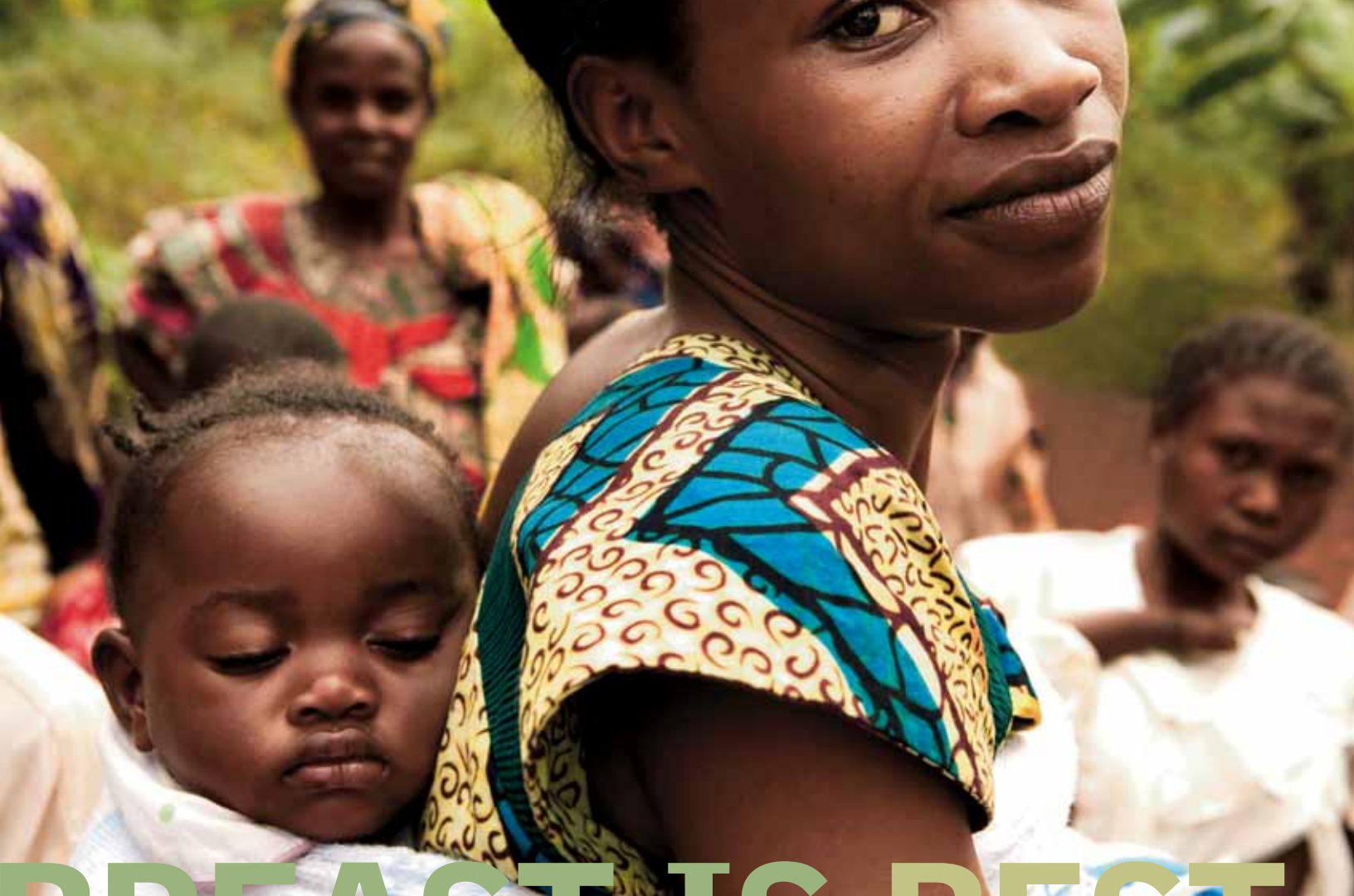
Emily Litonjua of the Boston Public Health Commission, the community partner in charge of managing the Kellogg grant, said she is hearing that pest infestation has decreased in units that have been treated through the IPM program.

"The vast majority of residents are into it," says Litonjua. "The real hurdle has been getting over the skepticism; they've all had pest control for years that hasn't worked."

Ultimately, the goal is to publicize the study's findings nationwide, with the help of federal agencies and housing associations. Hynes and her colleagues will report the results in official agency journals as well as at conferences and meetings attended by public housing officials across the country.

"I've been involved with this work for nine years and I'm going to stay until we finish," Hynes states. "You need that amount of time to see something progress from a pilot, where you test to see if the idea or practice is indeed viable, to intervention research, where you test to see if it actually makes a significant difference to environmental health. If it is the right thing to do, then you test to see if you can you accomplish the task in a large, complex agency that manages the housing of the poorest people in the city. Finally, you ask how best the new model can be replicated across the country."

"That's where you need national partners and advocates and that's what we have in the EPA and HUD and the Kellogg Foundation," adds Hynes. "These are our partners, but they will remain our partners only insofar as they see credible results. We have a large audience waiting for this."



BREAST IS BEST

Landmark study answers key question for HIV-infected mothers

BY MICHAEL LASALANDRA

HIV-infected women in the United States and throughout the developed world can expect to deliver and raise healthy infants today, thanks to a combination of triple-antiretroviral drug therapy treatment, planned C-sections, and safe formula-feeding.

But in sub-Saharan Africa, where this advanced combination of treatments is not available to most, many infants are infected during pregnancy or at delivery. Those babies lucky enough to be born uninfected are at high risk of contracting the virus through their mother's breast milk. And in resource-poor areas, where clean water is not always available, formula feeding can be a deadly option.

What should an HIV-infected mother do? Breast-feed and risk transmitting the infection to her infant? Formula-feed and risk that her child will die from diarrhea or other infections?

"It has been a truly excruciating dilemma for women," says Donald Thea, MD, MSc, who has devoted most of his professional life to addressing AIDS and the last seventeen years focused on mother-to-infant transmission.

In February 2007, Thea, professor of International Health at Boston University School of Public Health and director of the Clinical Sciences Unit at Boston University's Center for International Health and Development (CIHD), released results of a seven-year study involving nearly a thousand Zambian women that provides the first clear answer to the breast-feeding dilemma. Based in part on the findings of Thea's Zambian Exclusive Breastfeeding Study (ZEBS), the World Health Organization (WHO) revised its recommendations in October of 2006, urging HIV-infected mothers in Africa to practice exclusive breast-feeding for six months, instead of weaning early and then introducing formula, a practice that was previously believed to stem transmission of the virus. This simple change in approach, the result of the comparative analysis undertaken by ZEBS, could save more than a million lives a year.

Throughout his medical residency, in the 1980s, Thea treated some of the earliest AIDS patients, gay men in New York City. When he finished the residency, his interest in public health led him to pursue a master's degree at the London School of Hygiene and Tropical Medicine, where he began hearing of a similar disease that was just beginning to emerge in sub-Saharan Africa, where the illness was called "slim."

"It soon became very clear that this was going to be a catastrophic problem in Africa. At that point, I understood that if I wanted to practice tropical medicine and pursue research in the field of international health, this was going to be the biggest challenge, so I moved to Zaire," Thea recalls.

After three years in Zaire working at Project SIDA, the first and one of the most productive international AIDS research collaborations to date, Thea returned to New York City, where he directed the New York City Perinatal Collaborative Mother-to-Child Transmission Study, which was funded by the Centers for Disease Control, from 1992 to 1998. It was at this juncture that he decided to return the focus of his life's work to mother-to-infant transmission in Africa.

In 1999, while working at the Harvard Institute for International Development, Thea—along with Louise Kuhn, PhD, from Columbia University's Mailman School of Public Health, and Grace Aldrovandi, MD, from Children's Hospital of Los Angeles—started mapping out an ambitious study to examine the issue of breast-feeding and mother-to-infant transmission in Zambia, where about 20 percent of the population is HIV-infected. The work was launched in 2001 as ZEBS, after Thea and a number of his colleagues had moved to Boston University School of Public Health to join the Center for International Health and Development.

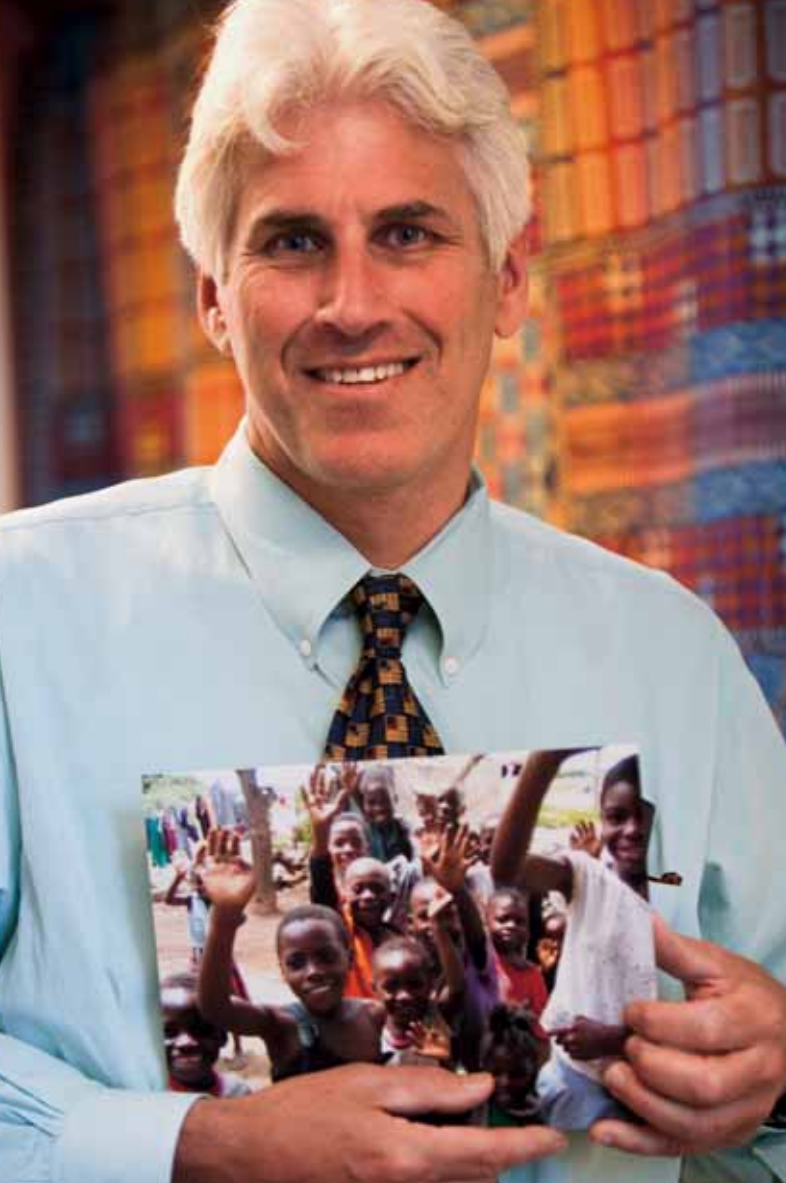
"During this period, effective drug therapy was identified and the mother-to-child epidemic was essentially wiped out in the United States and in Europe, in part because women could safely use formula and had access to safe Caesarean sections," Thea says. "We realized quickly that the same approach could not be used in developing areas because breast-feeding would undermine the beneficial effects of a treatment that had worked in the United States."

It was also clear to Thea that the standard of care in the West—formula-feeding—might end up doing more harm in Africa than good. "Policy-makers were assuming that the best available care in the United States was the best available care in poor Africa, but there was no evidence to support this assumption," says Thea.

While infected mothers and their babies in Africa are typically given one dose of one antiretroviral medication at delivery, approximately 30 percent of infants still become infected from their mothers. And about 15 percent of these children were being infected from having ingested their mother's milk. In all, approximately 300,000 babies are born with HIV infection each year in Africa.

Prior to Thea's investigative study, WHO had recommended that infected women discontinue breast-feeding as soon as possible, while also taking into consideration local circumstances, the individual's situation, and the risks of replacement-feeding. Based on the conclusions of this and similar studies, WHO issued new recommendations in October 2006, as mentioned, urging that infected women breast-feed exclusively for six months, unless replacement-feeding is deemed to be "acceptable, feasible, affordable, sustainable, and safe."

Unfortunately, such conditions are rarely the case in many places in Africa, including Lusaka, the capital city of Zambia, where the ZEBS study was conducted. Thea observes, "Women in Zambia often don't have access to hygienic conditions and clean water, which would allow



Thea and his team decided to identify the best alternative to breast-feeding. Funded with a \$6 million grant from the National Institutes of Health, ZEBS was designed as a randomized, controlled trial to examine the issue, specifically, to see if there was a net benefit to stopping exclusive breast-feeding abruptly at four months.

The study enrolled 958 HIV-infected women, half of whom were encouraged to wean their infants as rapidly as possible, from breast milk, at four months. The other half of the group was encouraged to wean gradually, as would be done ordinarily, usually around six months. The study followed the progress of women and their babies for a period of two years.

Thea reported their results in February 2007, at the 14th Annual Conference on Retroviruses and Opportunistic Infections, in Los Angeles. The findings of ZEBS were indeed dramatic. After two years of follow-up, the ZEBS team concluded that there was no significant difference in HIV-free survival among the children from the two groups of subjects.

"Our results did not support current recommendations that encourage early cessation of breast-feeding for HIV-infected mothers," Thea reported at the conference. He noted as well that early cessation of breast-feeding is costly and may carry additional social risks, including disclosure of HIV status and the associated stigma. Such risks may be

"Policy-makers were assuming that the best available care in the United States was the best available care in poor Africa, but there was no evidence to support this assumption." —Donald Thea

them to prepare the formula in a way that is not dangerous to the child."

Still, many infected African women use formula if they can afford it; or they use a combination of breast-feeding and other foods such as porridge or tea.

The toll, however, is deadly. Estimates are that 1.5 million children die in Africa each year as a result of diarrhea and various infections resulting from mothers having not breast-fed their children exclusively or from weaning their babies from breast milk too early, Thea says.

Currently, many governments in Africa encourage infected women to breast-feed for fewer than six months and then switch the child to formula or food. Such a policy seeks to allow some of the benefits linked to breast milk while it limits the child's exposure to HIV. But there has been little data available to either support or refute this recommendation.

justified if there is a benefit to the babies' health, but not without.

Not only was there virtually no difference in HIV-free survival among the two groups of infants, but those who did contract the virus actually fared better if breast-fed for longer periods of time, says Thea.

Thea returned to Zambia in the summer of 2007 to disseminate the results, in the hope that it will not only change policy there but also in other African countries, such as Botswana and South Africa, where rates of HIV infection are even higher. More studies are expected to follow, with additional data analysis. Thus far, Thea's group at CIHD has published 18 papers from the ZEBS data alone; in total, 53 papers have been mapped out. The data also presents a rich store of knowledge for three doctoral students who have used or intend to use the data associated with this study. Funding for four additional projects has also been secured.

Thea believes that if recommendations are universally changed to encourage exclusive breast-feeding, as many as 1.2 million lives a year could be saved, particularly if such recommendations encourage non-infected women to breast-feed exclusively.

While there have been a handful of other studies that have investigated breast-feeding, with most suggesting dangers with formula-feeding, none had actually provided a head-to-head comparison in a randomized, controlled fashion.

"There has been a raging debate for the last decade or so about how to resolve this dilemma," Thea notes. "Our study should provide definitive evidence to support the policy that exclusive breast-feeding is the best alternative for pregnant women who are HIV-infected and that early weaning is no longer a viable consideration. This should have a considerable impact on the countries of sub-Saharan Africa that are struggling with a high prevalence of HIV."

Thea's colleague at Children's Hospital in Los Angeles, Grace Aldrovandi, MD, says that ZEBS revealed a crucial aspect in understanding morbidity and mortality for this



"ZEBS confirms what people in public health have understood for years about the overall benefits of breast-milk; but the study also factored in the importance of exclusive breast-feeding and duration."

— Grace Aldrovandi

population—the intrinsic immunological benefit of exclusive breast-feeding, for both mother *and* child.

"This immunological advantage has tremendous implications for maternal and child health in regions that have a high incidence of infection," says Aldrovandi. "ZEBS confirms what people in public health have understood for years about the overall benefits of breast-milk; but the study also factored in the importance of exclusive breast-feeding and duration. In effect, it demonstrated that the least expensive, most direct option is also the simplest, most effective and sustainable recommendation."

Jonathon L. Simon, DSc, MPH, director of the Center for International Health and Development and chairman of BUSPH's Department of International Health, says that the study in Zambia exemplifies precisely the kind of influential applied research that CIHD wants to accomplish.

"The research mission of the center is geared toward studies that are relevant to broader policies and programs,"

he says. "Don Thea's work epitomizes that goal. We find great value in being at the applied end of the spectrum of inquiry. We want to answer questions that are important today. Without question, ZEBS has met those criteria."

The study, which ran from May 2001 to December 2006, had its share of difficulties. The biggest hurdle was attracting enough subjects. Thea had hoped to complete the enrollment process within 18 months. Instead, it took twice as long. One challenge in getting women to participate was the significant stigma associated with HIV. In addition, Zambians generally are not comfortable with having their blood drawn—and that was a regular part of the trial for both mothers and infants.

"Rumors kept cropping up that we were Satanists and that we were taking the blood and selling it," Thea recalls.

At times, traditional healers advised women not to enter the study. "We tried to reassure the healers, but they saw us as competition," he notes.

Ultimately, the study team's persistence attracted a sufficient number of participants.

"We remained in the community and did a tremendous amount of outreach," Thea says. "We went to churches. We went to soccer games. We promoted a support group for the mothers. By the end of the study, we were accepted, integral members of the community."

ZEBS was overseen by Thea, Kuhn, and Aldrovandi and operated on a daily basis by Erin Shutes, Katherine Semrau (currently a doctoral student in epidemiology at BUSPH), and Nancy Scott (a 2003 graduate of the School and current employee of the University who lives in Zambia). All members of the staff associated with the study—doctors, nurses, and microbiologists—were themselves Zambian.

"We had done a lot of work in Zambia over a number of years and enjoyed good, collegial relationships," Thea notes.

Thea himself returns to the region four times a year. After all these years, he has a soft spot in his heart for the country, among the poorest, in which per capita income is less than two dollars a day.

"I have a deep love for Zambia," he says. "The people are absolutely wonderful. They are kind, motivated, caring, and incredibly hard working. Their national spirit is very optimistic, despite all of their troubles. I hope that we have produced a little bit of light for them."



The seven-year study involved nearly a thousand Zambian women and their babies.





SUSTAINABLE SAN

Composting toilets on a municipal scale

BY SHARON BRITTON

In Chemax, Mexico, a Mayan town of 4,500 on the Yucatan Peninsula, Laura Orlando is on a mission to address a fundamental public health problem that plagues 2.6 billion people around the world—a lack of toilets. Chemax is the perfect place, she says, to demonstrate the large-scale potential of a relatively inexpensive and ecologically safe technology for managing human waste: the composting toilet. Residents of Chemax are eager to create better sanitation, and the community has skilled masons to do the work. And the planning and building of composting toilets—on a municipal scale—would be an impressive public health achievement with ramifications far beyond solving the sanitary issues of one community, says Orlando.



SANITATION

"This has never been done before. It would show the world ecological sanitation is possible on a scale that matters," she notes.

From an ecological standpoint, composting toilet technology is far superior to sewer systems, says Orlando, MPA, an adjunct assistant professor of environmental health at BUSPH and executive director of the independent, Boston-based ReSource Institute for Low Entropy Systems (RILES). Instead of using clean water to carry excreta along miles of pipeline to a treatment plant, each composting toilet collects the waste material in a large chamber. These materials decompose over time, much like leaves and garden refuse do in a backyard compost bin. As the biological activity in the tank digests the solids, some 90 percent of the volume is driven out of a ventilation stack as carbon dioxide and water. Solids collect and decompose in the holding tank for many years, killing the pathogens in the waste, until the resulting compost is ready to be removed and used as fertilizer. Urine, however, takes only days to go through a nitrification process, turning it into odorless "compost tea" that also can be diluted and used with great success as a fertilizer for many agricultural crops.

Local masons are building facilities that are both beautiful and useful.

Unlike the familiar porcelain toilet that uses water to flush waste down a small channel, the type of composting toilet planned for Chemax looks and operates—from the user's end—more like an outhouse. A standard toilet seat is attached to a bench over a wide opening—a black hole that leads to the tank below. But that's where the similarity to the outhouse ends. Built and vented correctly, the composting toilet is odorless and can be installed indoors or out. And it doesn't have to be ugly. Taking much pride in their work, Chemax masons have built composting toilets and bathrooms in the Yucatan with intricate patterns of tiles, making them easy to clean and beautiful.

Orlando, who works predominantly on sustainable sanitation systems in Spanish-speaking communities, has been helping an indigenous coastal community recently in the state of Michoacán, Mexico, to preserve the local ecology in the midst of tourism and economic development. With hopes of beginning the process of institutionalizing ecological sanitation, she entered into a new collaboration this year with BUSPH researchers from the Department of Environmental Health, cooperating with department chair Roberta White, PhD, and environmental health professor Richard Clapp, DSc, MPH, to establish the Center for Ecological Public Health (CEPH). Together, their goal is to expand research on ecological public health, teach about sustainable development and to examine technologies and policies that have given institutions governing public health and the environment their current character. With adequate funding, this sustainable sanitation project could become the CEPH's flagship, a multilayered applied research project involving collaboration of BUSPH researchers and students as well as the citizens of Chemax, craftsmen, and public health workers and other experts in Mexico that could become a model for much-needed projects around the world.

In addition, BUSPH researchers hope that establishing the center will enable them to expand current ecologi-

cal research projects that study the use of pesticides in agriculture here and in Africa, as well as observe the effects of agricultural chemicals on the marine ecosystem. In South Africa's KwaZulu-Natal province, for example, White and Clapp have joined colleagues at the University of Cape Town and the University of Natal in Durban, South Africa, to conduct a pilot study of the effects of pesticides on the pre-natal central nervous system, hoping to learn the long-term effects of widely used agricultural pesticides on children.

With her focus on Mexico, Orlando says developed nations also need to start thinking about the consequences to the environment of the technologies they have adopted. Modern sewers are a poor sanitation solution on many levels, she argues. "Eighty percent of the cost goes into the laying of the pipe." Sewers pollute clean water and their treatment plants generate sludge, a hazardous byproduct

Orlando is funded in her work currently by ecologist and activist Abby Rockefeller and has worked on sanitation and clean-water issues in Latin America for nearly 20 years, co-founding RILES in 1990 with Rockefeller.

Rockefeller brought the Clivus Multrum composting toilet, a Swedish technology, to the United States in 1972. For 35 years, she has lived with composting toilets in her home in Cambridge, Mass. The toilets—one on each of three floors—are connected to a large composting tank in the basement. An avid organic gardener, she collects the rich black humus and liquid fertilizer byproducts and uses them to improve the soil in her garden on a farm in New Hampshire.

"I lived with the composting toilets for a year, and I thought this makes so much sense. I'm going to get involved in this," recalls Rockefeller. She sought out Orlando, a civil



that is contaminated not only with residential but also industrial waste. Currently, in some communities in the United States, sludge is being spread on agricultural lands with unknown long-term ecological and health consequences, she notes.

"People think that modern sewage treatment solves the problem of sewage, but it only moves the problem from one place to another. The cleaner the water is made by treatment, the more complex and toxic the sludge," says Orlando. By adopting composting toilets and systems for using household wash water—so-called greywater—for plants, the developing world could preserve the local ecology and avoid the production of sludge, she adds.

engineer who speaks Spanish, to introduce the toilets and other sustainable sanitation projects in Latin America. Eager to show the viability of the technology, Rockefeller also founded Clivus Multrum, Inc., a small company based in Lawrence, Mass., that manufactures and sells composting toilets to such places as national and state parks, recreation areas, and golf courses, as well as residences.

"People in most cultures of the world do not care about the recycling of human 'waste,'" says Rockefeller. "They want a toilet that is convenient, sanitary, and attractive. That's what we are trying to do in Chemax, make systems—the composter and the bathroom—that are beautiful and convenient, as well as compatible with the local culture."

Community participation, which included a door-to-door health survey of residents, is key to the success of the project.



The project could provide jobs for masons and other craftspeople and the collection and distribution of compost for fertilizer will create its own economic engine.

Over the last ten years, Orlando and Rockefeller have collaborated with researchers at BUSPH on the issue of sustainable sanitation. Both have taught classes on the topic, and, with Clapp, they helped to establish the Program for the Ecology of Human Systems (PEHS), which seeks to increase the public's understanding of the implications of technological choices on both human and environmental health. In 2001, PEHS co-sponsored a conference that looked at the health impacts of sewage sludge spread on land for agricultural use. That conference resulted in publication of "The Sludge Report," a special issue of *New Solutions: A Journal of Environmental and Occupational Health Policy*, edited by Clapp and Orlando. The work encouraged the EPA to look more closely at the presence of brominated flame retardants in sludge, says Clapp.

"The composting toilet is a proven technology. Its value is especially obvious in areas that don't have a lot of water," says Clapp. Clapp is an epidemiologist with more than 30 years of experience in public health practice and consulting, largely with state and local health departments. "This project seems ideal for Chemax," he notes.

In 2005, a master's degree candidate from BUSPH joined Orlando in Chemax, as part of the student's formal field experience, in cooperation with RILES, to conduct a health survey of the village. Together they worked with

local women and members of the village's health center to survey 300 households, about 10 percent of Chemax's residents, in effect taking a snapshot of the community's health. The survey was invaluable, says Clapp, not only for providing a baseline look at the health of their families but also for understanding how they feel about sanitation issues and what kinds of solutions appeal to residents.

Because Chemax has no municipal water or conventional sanitation system, residents manage their elimination in *el patio*, which is to say, directly on the ground, in an area of their backyards fenced off with sheets of plastic for privacy. In a place where the limestone karst soil is porous and the water table is high, the public health and environmental implications of this practice are obvious. Groundwater in Chemax is polluted, forcing 41 percent of residents to buy bottled water, despite their modest means.

"The other 59 percent drink polluted water," says Orlando. Diarrhea is common.

Not surprisingly, 88 percent of the 300 households surveyed said they would prefer a better solution, one that is clean and safe—something better than latrines or outhouses.

But answering the community's need will require more than building a string of toilets one at a time, says Orlando.

Chemax must establish an ecological infrastructure without destroying its water resources.

"The toilets need to be built correctly, inspected, and maintained; and the compost needs to be collected on a regular schedule," she says. "The economics and politics that make a municipal system viable have to be thought through from beginning to end."

Building such a system will require strengthening the web of cooperation that has already developed around the issue in Chemax, involving BUSPH, the Universidad Autónoma de Yucatán, state and local government, the local health clinic, and Zayab Ha, a nonprofit founded by Chemax residents to improve ecological public health in their town. It would also require establishing a financing mechanism

"You can spin a globe and put your finger on any part of it and find a place where sanitation is not good or is not good for the environment. Ecological public works that incorporate composting toilets that separate, at the source, this set of wastes are key to the solution." — Laura Orlando



through bonds, grants, private-public partnerships, taxes, and user fees in order to create financially sustainable systems in the long term.

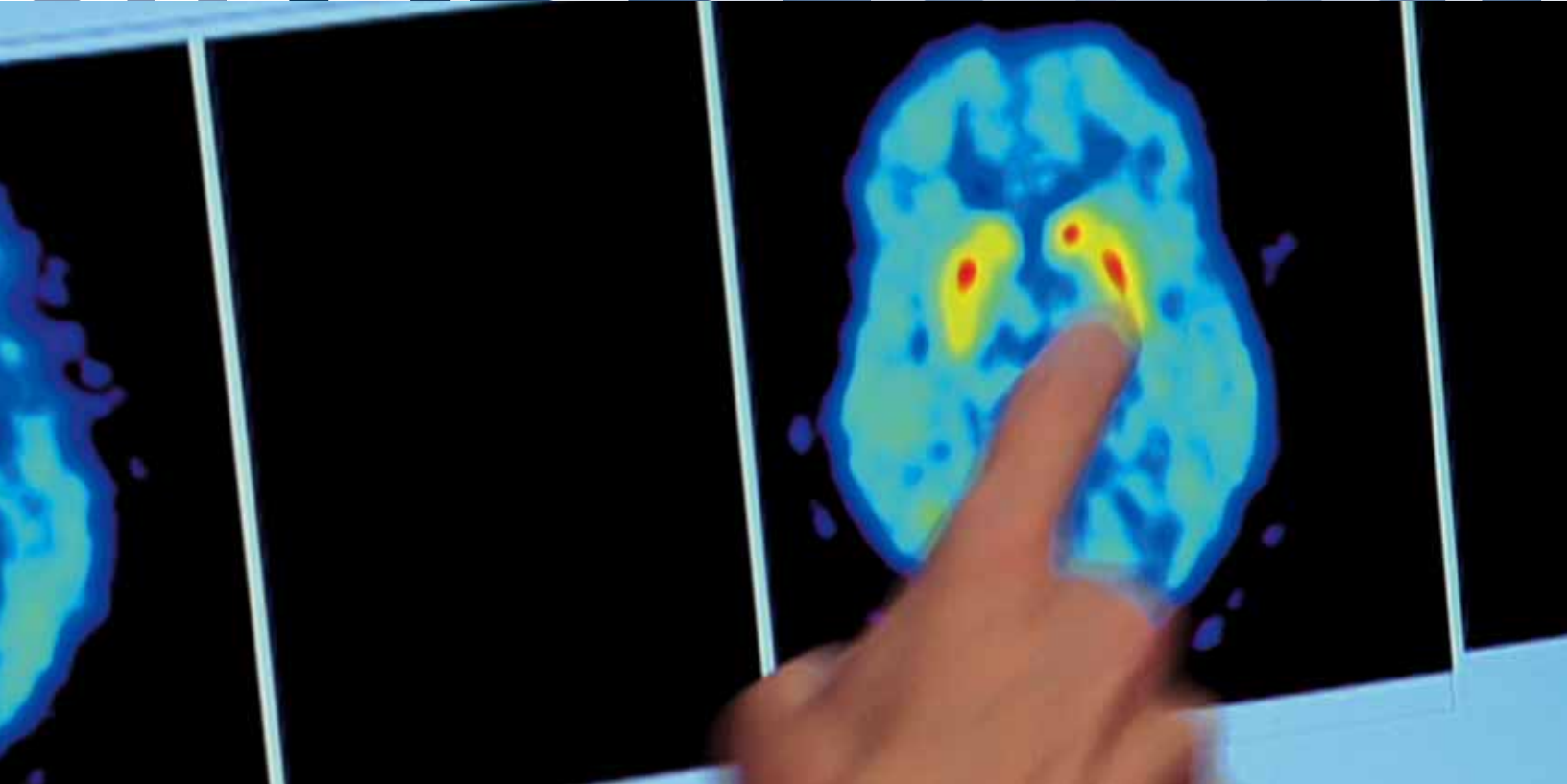
"The mistake would be to think of it as simple," notes Orlando. "It's a giant puzzle. If you don't put all the pieces together, it won't get done right." The project could provide jobs for masons and other craftspeople and the collection and distribution of compost for fertilizer will create its own economic engine.

Orlando had her sights set on building skyscrapers when she first received her degree in civil engineering at the University of Michigan. Rockefeller convinced her that working on sanitation issues was a real way to influence sustainable development and environmental protection. Twenty years later, she doesn't regret the decision.

"My hope for the world—the planet and its people—is renewed each time I travel to Chemax. People are good and kind and decent and they want a good life," observes Orlando. "You can spin a globe and put your finger on any part of it and find a place where sanitation is not good or is not good for the environment. We're talking about 2.6 billion people for whom this basic need remains unmet. Ecological public works that incorporate composting toilets that separate, at the source, this set of wastes are key to the solution."

Depending on the natural topography of a region, treatment tanks can be buried or enclosed above ground.

SHEDDING LIGHT ON ADDICTION



BY SHARON BRITTON

Fortified with a sizable budget, access to television's most talented documentary makers, and permission to spend the time necessary to delve deeply into the subject, HBO's John Hoffman set off three years ago to produce a documentary on drug and alcohol addiction.

The topic was a natural for Hoffman, vice president of documentary programming, whose film career had involved him in a number of health-focused projects with a public service component. The push for the new venture came from his boss, HBO's Sheila Nevins, who recognized that, after much struggle, she didn't really understand the addiction that tormented her own child.

Working with a partner, Susan Froemke, Hoffman focused on crafting a compelling, informative documentary that would be capable of reaching families like Nevins's—people who, despite their best efforts, could find no clear path toward fighting a disease that is steeped in social stigma and confounded by inadequate, fragmented, and sometimes conflicting treatment options.



Join Together's David Rosenbloom was a featured expert.

After thousands of hours of research and interviews with doctors, psychologists, brain specialists, public health experts, and both young and old people as well as families struggling with addiction, it became clear that HBO had not only a groundbreaking 90-minute documentary but also a set of valuable supplemental stories. Taken together, these narratives conveyed the message that treatment and recovery are indeed possible.

"We realized that we had much more material than we could use, that it was important and relevant to people who were looking for answers, and that the potential existed to offer the public much more than we had originally intended," notes Hoffman.

This surfeit led HBO to turn to the Robert Wood Johnson Foundation (RWJF) for support in turning the extra material into 13 additional short documentary pieces, a companion book, and a DVD package of the series. Beyond compiling the material, though, the real challenge came in finding ways to broaden the impact of HBO's efforts. While as many as 12 million television viewers could likely be expected to watch the series, HBO envisioned using the documentary more interactively—placing the materials directly into the hands of people who could use them the most: recovering

addicts, health practitioners, treatment advocates, public policy experts, activist-families, and legislators.

Enter David Rosenbloom, PhD, and his staff at Join Together, an organization regarded by many as the nation's premier online clearinghouse for information related to effective alcohol and drug policy, prevention, and treatment. With RWJF's support, Join Together, a program of Boston



University School of Public Health's Youth Alcohol Prevention Center, joined forces with two other advocacy organizations—Faces & Voices of Recovery and the Community Anti-Drug Coalitions of America—to launch a grassroots, mass communications effort. This comprehensive approach ultimately leveraged the entire "Addiction" package into a tool for education and advocacy.

Taking the lead in a partnership, Join Together pooled the advocacy organizations' contact lists, created a database of more than 45,000 community organizers as well as treatment and recovery practitioners, and launched a multilayered communications campaign, "Addiction: Communities Take Action."

Through a special Web site built to connect and educate people, the partners distributed more than 20,000 viewer's guides and organized events such as town hall meetings, state capitol presentations, and legislative briefings across the country. At the Massachusetts State House, Rosenbloom moderated a premiere of the documentary and a town meeting-style discussion that attracted 500 legislators, treatment advocates, law enforcement officials, and people in recovery.

"These were individuals who probably wouldn't have come together for just another meeting on substance abuse,"

observes Rosenbloom. "The brand of HBO was a powerful force that lent credibility and substance to the events. And those who attended the sessions left having learned something, because the stories were very well told," he adds.

In Virginia, where Governor Tim Kaine issued a press release urging Virginians to watch the program, more than a thousand people gathered at a premiere in Richmond that offered the opportunity to view and then discuss the documentary. All told, the efforts of Join Together and its partners inspired town-meeting or legislative events in nine states and house parties in nearly 100 communities, in 34 states, far surpassing the partners' initial goal of reaching 30 cities.

The campaign's Web site, www.addictionaction.org, built and run by Join Together, was key in helping distribute information and connecting people with others who wanted to be involved. The site received more than 100,000 visits within 50 states, enabled people to send more than a thousand letters to legislators, and helped people organize or attend more than 500 informal house parties that encouraged group discussions of the documentary.



Massachusetts State Representative Pam Richardson, a member of the Legislature's Committee on Mental Health and Substance Abuse, attended a house party held at the Framingham home of Roberta Leis, Join Together's program director. The documentary drove home an especially important point, Richardson notes.

"People who suffer from substance abuse need medical treatment, not criminal treatment. The house party was not only an opportunity to watch the film with people who are concerned about this issue," says Richardson, "It also gave

me the opportunity to meet professionals who deal with substance abuse treatment on a daily basis in and around my district. The personal connections I made are invaluable."

Leis, who invited people from widely different backgrounds to her home screening of "Addiction," recalls that she was impressed by the extraordinary range of discussion that followed.

"It really opened viewers' eyes to the myths," she observes. "They learned that addiction is not a moral failing but rather a relapsing disease of the brain. They learned that it is not true that addicts have to hit bottom before they can seek treatment—that, in fact, the sooner addiction is treated, the better," says Leis.

The grassroots effort far exceeded what HBO is able to do in order to promote a series, according to Hoffman.

"It was amazing what the participant-activists accomplished," he says. "We have never experienced anything like it before. It took on dimensions that the company had never experienced. All the partners demonstrated that they both understand and appreciate community activism. It also showed them how to inspire it."



There are two reasons that advocates of treatment have been so enthusiastic about the documentary, says Rosenbloom, a BUSPH professor of social and behavioral sciences and one of the documentary's featured authorities. The first is that HBO's "Addiction" filled an information void, by offering the most comprehensive, cohesive, and compelling consumer guide to addiction science and treatment currently available.

HBO and Join Together got people talking at house parties, in legislative sessions, and support groups.

"The content stands out in a world of fragmented resources," he notes. The series delved into the most recent science that shows how the addicted brain reacts to the slightest stimuli associated with drug and alcohol use, creating an almost irresistible urge to indulge the addiction. It also talked about promising drug interventions that can help short circuit the addiction cycle.

The second reason, says Rosenbloom, is that the program exposed shortcomings of the medical insurance industry that make it nearly impossible for addicts to obtain effective treatment.

"The program did a great service in introducing and expanding the public's knowledge regarding the set of treatment options available, and it raised issues of insurance

and advocacy support. Funded initially with a \$5 million grant from RWJF, Join Together has become a resource for thousands of grassroots advocates who access its newsletter on a daily basis at www.jointogether.org.

Three national retail chains learned firsthand of Join Together's influence in December 2006 when the organization mobilized its extensive network to pressure Kohl's, Target, and Linen's 'n Things to stop selling board games based on drinking alcohol. The games included a version of the classic children's game Chutes and Ladders, called Shots and Ladders, as well as a version of another popular college pastime, Beer Pong.

Appalled by what he considered the blatant marketing of excessive drinking to young people, Eric Helmuth, Join

"This documentary will encourage people to continue the fight—to show policy makers just how serious the misinformation and discrimination is, and shed some fresh light on the extent to which the insurance industry limits consumers' access to effective care."

— David Rosenbloom

discrimination and barriers to care in a visceral way," he says. "People going through these traumas hit such barriers and they get so little help, they end up believing it is their fault. They get worn out," he observes.

In fact, "There is reasonably good evidence that treatment does not take hold for 90 days. There is virtually no managed care organization that offers 90 days of treatment. It's criminal," he says.

Rosenbloom's hope is that Join Together's advocacy will lead to insurance reform. "There are already efforts in a number of states to repeal some of the most obnoxious, discriminatory laws regarding insurance coverage," he notes. "We hope that some of these partnerships will stay together to work on these issues on the state and local level."

Leading a campaign to build awareness about the HBO documentary was a task tailor-made for Join Together, which was formed in 1991 with the aim of helping communities organize their own drug and alcohol treatment and prevention strategies by connecting advocates and providing them with research information, planning assistance,

Together's director of technology and online communications, launched a coordinated effort that convinced thousands of activists to write letters to the retailers. The three chains removed the merchandise from their shelves within weeks of the campaign.

Several months after the March 2007 release of "Addiction," it is still too early to calculate the overall impact of the series and the work of Join Together and its partners, notes Rosenbloom. "Most important, though, the program made available much-needed information about treatment options that the public will undoubtedly begin to explore and then demand.

"This documentary will encourage people to continue the fight—to show policy makers just how serious the misinformation and discrimination is, and shed some fresh light on the extent to which the insurance industry limits consumers' access to effective care. We are all better off having this series available," he adds. "It is up to communities to pick up this gift that has been given to them and to do something with it."



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Associate Dean of Public Health Practice Harold Cox has been appointed to the Massachusetts Public Health Council by Massachusetts Governor Deval Patrick. Cox, who had served as chief public health officer for the City of Cambridge, Massachusetts, will serve a six-year term on the council.

After nearly a year of competing against teams from around the world, BUSPH's Beantown Beatdown of the 'Squiter (a reference to the mosquitoes that spread malaria) was awarded the **Malaria Cup** in the **Madness Against Malaria Competition**, in April. The team raised \$8,066 and donated 1,613 bed nets to prevent the spread of malaria south of the equator, where the disease kills about one million people each year. The competition, sponsored by the United Kingdom-based World Swim for Malaria Foundation, involved 121 teams worldwide and was modeled after the single-elimination NCAA college basketball brackets.

Health Policy and Management Professor and Chair Gary Young received the Robert Wood Johnson Foundation's Investigator Award in Health Policy Research. The award supports Young's research on the application of pay-for-performance concepts, which offer financial incentives to health care providers for achieving quality targets.

Instructor in International Health and doctoral candidate in Epidemiology Katherine Semrau was the honored recipient of the Young Investigator Award at the 14th Conference on Retroviruses and Opportunistic Infections, held in Los Angeles in February, for her abstract, "Postnatal Transmission of HIV and Breast Milk Viral Load and Sodium Level During the First Four Months of Breastfeeding."

Environmental Health Professor H. Patricia Hynes spoke in February on the health effects of war on women, as part of a panel that addressed the need for legislative advocacy to eliminate violence and discrimination against the female children in Africa. The panel was sponsored by the International League for Human Rights, Friends of Africa International, and the Permanent Mission of Nigeria to the United Nations.

Social and Behavioral Sciences Professor William DeJong presented the fifth Henry W. DeJong Award for Vision and Leadership in Collegiate Tobacco Control, to Gwen Sieving, a health educator at the Hartshorn Health Center at Colorado State University (CSU), who was recognized for her work to promote smoking cessation and involvement with CSU students in an innovative anti-tobacco media campaign. The DeJong Award was established in 2002 to honor the memory of Henry W. DeJong, who died from lung cancer in 2000.

Associate Dean for Global Health Gerald T. Keusch delivered the keynote address at the sixth annual Boston University alumni event in Mumbai, India, in September. Keusch drew a connection between poor access to health care and terrorism, and noted that even marginal increases in per capita income result in huge increases in life expectancy. He described the medical and health resources offered by Boston University and the extensive collaboration between the University and both the public and the private sectors in India on numerous health initiatives.

The **Ninth Annual Sol Levine Lectureship on Society and Health** featured James House, director of the Social Environment and Health Group and research professor at the Institute for

Social Research, University of Michigan. House addressed issues regarding "Social Determinants and Disparities in Health, and America's Paradoxical 'Crisis' of Health Care and Health." The lectureship is cosponsored by Tufts, Harvard, and BUSPH and was held at Tufts–New England Medical Center.

Environmental Health Associate Professor Tom Webster has been appointed to the Institute of Medicine's Committee on Making Best Use of the Agent Orange Exposure Reconstruction Model, which advises the Department of Veterans Affairs on the best uses of a model for estimating herbicide exposure in studies of long-term health effects of Vietnam veterans.

Researchers from the Boston University Medical Campus compared outcomes and costs associated with planned Caesarean births without labor and found that rehospitalization within the first 30 days is more likely than with vaginal and Caesarean births with labor. The study was a collaborative effort among BUSPH's Department of Maternal and Child Health and the School's Data Coordinating Center, Boston University School of Medicine's Department of Obstetrics and Gynecology, and Abt Associates. The findings were published in "Maternal Outcomes Associated with Planned Primary Caesarean Births Compared with Planned Vaginal Births," authored by **Eugene Declercq (MCH), Mary Barger (MCH), Howard J. Cabral (BIO), Stephen R. Evans (DCC), Milton Kotelchuck (MCH), Carol Simon, Judith Weiss (MCH), and Linda J. Heffner (MED).**

Boston University Student Global Health Organization (BUSGHO), founded by alumna Andrea Provost ('07), launched a new Web site, <http://people.bu.edu/busgho>, to serve as an online home base for students of global health to communicate with one another about topics of interest and concern.

Boston University Schools of Law and Public Health sponsored a forum in March to discuss the legacy of **The Nuremberg Doctors' Trial: 60 Years Later**. The event gathered distinguished scholars—authorities on international law, medical ethics, and the Holocaust—to examine the role of physicians during the Nazi Holocaust and what relevance that history has for contemporary medicine and international law today. Edmund Pellegrino, current chairman of the President's Council on Bioethics and internationally recognized expert in medical ethics and the philosophy of medicine, delivered the keynote address.

With the goal of sharing innovative financing strategies that benefit children and youth who have special need for health care, the **Catalyst Center** of the **BUSPH Health and Disability Working Group** published a new edition of **"The Catalyst Center State-at-a-Glance Chartbook on Coverage and Financing for Children and Youth with Special Health Care Needs."** The project was published with funding from the Division of Services for Children and Special Health Care Needs of the federal Maternal and Child Health Bureau.

Alumna Christie L. Hager (MPH'91) addressed faculty and students in February about **"The Politics and Process of Massachusetts Health Reform."** Hager serves as Chief Health Counsel to Salvatore F. DiMasi, Speaker of the Massachusetts House of Representatives. At the forum, Hager discussed whether the Commonwealth's health reform legislation (Chapter 58 of the Acts of 2006) offers a blueprint for policy or politics at the state

or possibly even the federal level. She also commented on the intricate process of "getting to yes" as well as the politics of moving toward universal health insurance coverage under dynamic and high-spirited circumstances.

International Health concentrator Meredith Collins was granted the **Albert Schweitzer Fellowship** as the Lambaréné Public Health Fellow for 2007/2008. This marks the first time in which a public health student has been selected to serve in Lambaréné, Gabon, where Collins will spend five months at the Albert Schweitzer Hospital. Collins served as a Boston Schweitzer Fellow for the 2005/2006 academic year, during which she taught Somali refugee women basic skills in English. She also organized focus groups of Somali, Somali Bantu, and Liberian refugees to measure attitudes toward and knowledge about tuberculosis.

Assistant Professor of International Health Matthew Fox (MPH'02, DSc'07), Center for International Health and Development, was awarded the 2007 Lilienfeld Prize by the Society for Epidemiologic Research, for excellence in student research, on the role played by breast-feeding in the relationship between a mother's HIV diseases and the survival of her uninfected children.

Environmental Health doctoral candidate Joseph Allen received the BUSPH Dean's Award for 2007 at the annual Science and Engineering Symposium, held in April. Allen was recognized for his assessment of personal exposure to polybrominated diphenyl ethers (PBDEs), a toxic flame retardant frequently found in consumer products. His work included the first reported measurements of PBDEs in air in the United States. Allen also demonstrated the existence of a personal cloud of PBDEs, or the so-called Pigpen effect, named for the Peanuts cartoon character depicted in a perpetual cloud of dust. **Jessica Emberley**, a graduate student working in the laboratory of Environmental Health Professor David Sherr, received the Dean's Award for the School of Medicine. Her poster described the mechanisms of how environmental pollutants cause death of immune system cells. The research is part of ongoing studies in the Sherr Laboratory to study how pollutant chemicals cause cancer and immunosuppression.

BUSPH's Office of Public Health Practice presented the second annual **Gail Douglas Award for Public Health Practice** to Letitia "Tish" Davis at the School's Community Partners Appreciation Day, in April. Davis founded the Massachusetts Department of Public Health Occupational Surveillance Program in 1986 and has served as its only director. Over the years Davis has developed programs that have served as models for regulatory policies throughout the Commonwealth and beyond.

India's Honorable Union Minister of Health **Anbumani Ramadoss** met with members of the Boston University Medical Campus community in March, during a Public Health Forum sponsored by BUSPH and the Global Health Initiative. He and a delegation of Indian health officials visited the United States to explore health and science collaborations with the public, private, and academic sectors of Washington, New York, and Boston. Ramadoss met with University Provost David Campbell, Medical Campus Provost and School of Medicine Dean Karen

Antman, and University President Robert A. Brown, with whom he talked about the potential for exchanges of students and faculty between Boston University and India. The delegation also toured the construction site of the National Emerging Infectious Diseases Laboratories, scheduled to open on the Medical Campus in the fall of 2008.

"The Fragile Future of Afghanistan: Human Rights, Justice, and Security," a presentation made by visiting lecturer Dr. Sima Samar, is available for viewing on *BUniverse*, *BU Today's* video archive. Samar is chairperson of the Afghanistan Independent Human Rights Commission, recipient of the Jonathan Mann Award for Global Health and Human Rights 2004, and current UN Special Rapporteur for Human Rights in the Sudan. She served as Distinguished Visiting Scholar in Global Health at Boston University for 2006.

Environmental Health Chair and Professor Roberta White addressed a conference held at the American Academy of Neurology annual meeting in Boston in April. She spoke about her recent research focused on veterans of the first Gulf War who returned home with multiple health-symptom complaints. The results of the study show that these veterans have significant differences in brain structures from their fellow returnees who did not experience high numbers of health symptoms. Her work has garnered attention from the press, including the *New York Times* and NPR.

Adjunct Professor of International Health Janice Raymond received the International Woman of the Year Award from the Zero Tolerance Trust in Glasgow, Scotland, in May, for her work as director of the Coalition Against Trafficking in Women (CATW), which combats trafficking in women and children for prostitution. Raymond's partner, Professor of Environmental Health H. Patricia Hynes, met with faculty at the University of Glasgow to exchange information, findings, and strategies regarding gender equity in their respective universities.

International Health Professor Deborah Maine delivered the keynote address at the opening reception of the annual Global Health Council conference, which was held in Washington, DC, in May. The reception commemorated the twentieth anniversary of the Safe Motherhood Initiative, an international effort to reduce deaths of women during pregnancy and childbirth, in developing countries. Conference organizers noted that Maine and Allan Rosenfield, Dean of Columbia University's Mailman School of Public Health, are widely acknowledged as helping to start the initiative with their 1985 article in *The Lancet*, "Where Is the M in MCH?"

Environmental Health Associate Professor Tom Webster and **Environmental Health doctoral candidate Jessica Nelson** led a forum, "Measuring Chemicals in People: Promise and Pitfalls," in May at the Massachusetts Public Health Association, in Boston. The MPHA forum was co-sponsored by the Boston University Superfund Basic Research Program, an interdisciplinary program based at BUSPH that conducts and communicates research on the impacts of improperly managed hazardous wastes, and the Massachusetts Public Health Association's Environmental and Occupational Health Section. In addition, Webster and Nelson shared findings and recommendations from

the Boston Consensus Conference on Biomonitoring, an event organized last fall by BUSPH that gathered input on the topic from a group of Boston-area lay people.

Biostatistics Chair and Professor Lisa Sullivan was named a member of the 2007/2008 class of Fellows in the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women. Established in 1995, ELAM offers an intensive one-year program of leadership training, with extensive coaching, networking, and mentoring opportunities, aimed at expanding the national pool of qualified female candidates for leadership in academic medicine, dentistry, and public health. She is one of 45 women selected to participate in the program, which includes 70 department chairs, 30 center or institute directors, and 70 senior members of deans' staff throughout the United States, Canada, and Puerto Rico.

Members of community-based organizations as well as faculty, staff, students, and alumni gathered in May to explore ways to reduce health disparities through community/university partnerships. The daylong event was organized as a retreat by

C. Robert Horsburgh, chair of the Department of Epidemiology and director of the Partners in Health and Housing Prevention Research Center at BUSPH, as part of the School's **Program to Eliminate Racial/Ethnic Health Disparities**, funded by the W. K. Kellogg Engaged Institutions Initiative Focused on Eliminating Health Disparities.

The inaugural meeting of BUSPH's student chapter of **Physicians for Human Rights (PHR)** was held on the BU Medical Campus in April. PHR is a national organization that aims to mobilize health professionals and students to advance health, dignity, and justice as well as promote the right to health for all. Over the past twenty years, the organization has united physicians, nurses, public health specialists, scientists, and students in an effort to investigate and bring an end to human rights violations worldwide.

Judy Norsigian, longstanding executive director of Our Bodies Ourselves (OBOS), the organization behind the iconic women's health book of the same name, delivered the School's 2007 Commencement address, in May. She also received an honorary degree from Boston University at its general commencement exercises. Through her organization's publication and her own efforts at advocacy, Norsigian has had a profound impact on women's health in particular and on the status of women in general, initially throughout the United States and more recently in the developing world.

Other Commencement News

Professor of Social and Behavioral Sciences William DeJong received the Norman A. Scotch Award, which recognizes excellence in teaching. "Teaching is the most important activity of our faculty, and our outstanding teachers deserve special recognition," noted BUSPH Dean Robert F. Meenan. Recent winners have included Professors Elaine Alpert, Wayne LaMorte, Ken James, Michael Siegel, Gail Douglas, and Eugene Declercq.

Additional academic awards announced at Commencement

Dean's Award for Student Research: Joseph Allen, DSc candidate, Environmental Health

Herb Kayne Prize for Excellence in Biostatistics: Jotsna Nisha Kumar, MPH, Biostatistics, January 2007

Theodore Colton Prize for Excellence in Epidemiology: Bonnie Robyn Tran, MPH, Epidemiology, January 2007

Allan R. Meyers Memorial Prize for Excellence in Health Services: Adam James Rose, MSc, Health Services Research, May 2007

Katherine Skinner Memorial Prize: Sara Maclay Singleton, MPH, Health Services, May 2007

Rex Fendall Award for Excellence in Public Health Writing in the Department of International Health: Katherine Lynch, MPH, International Health, May 2006; Yumiko Yanase, MPH, International Health, January 2006

The John Snow Inc. Award in International Health: Jessica Carlin Kraft, MPH candidate, International Health; Andrea Joy Provost, MPH, International Health, January 2007; Jirair Ratevosian, MPH, International Health, May 2007

Boston University School of Public Health depends on the generosity of alumni and friends to support its mission of teaching, research, and service. The following lists acknowledge gifts to various funds, including the School's Annual Fund, made July 1, 2006, through June 30, 2007. Gifts to BUSPH's Annual Fund provide unrestricted support to the School's highest priorities. Donors whose names are marked with an asterisk have made donations to the Annual Fund at levels that qualify them for membership in the following Annual Fund Leadership Giving Societies: President's Associates (\$10,000+); The Talbot Society (\$5,000+); Leaders Society (\$1,000+). It is important to us that we acknowledge your gift properly; please let us know of any omissions or errors in listing your name or gift, by calling 617-638-5291.

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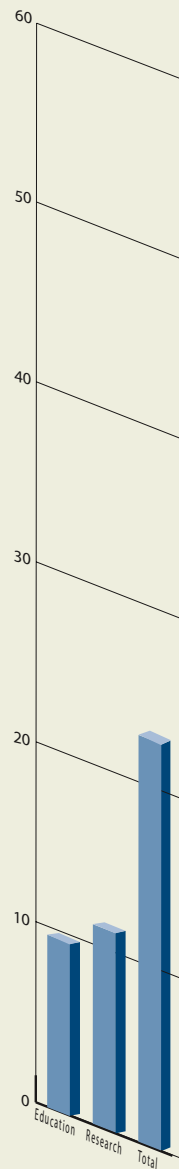
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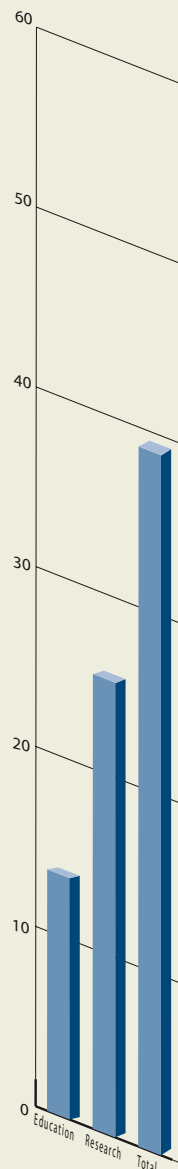
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INCOME (in millions)

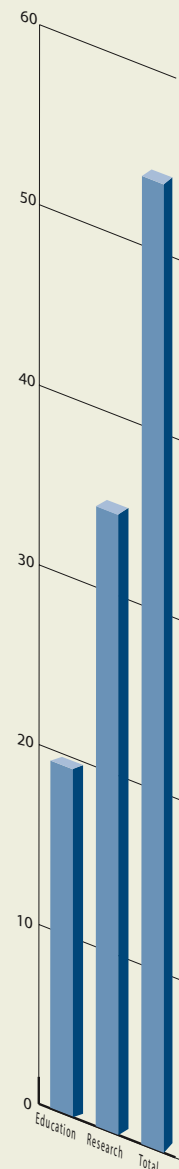
1997



2002



2007



INCOME

Education

Tuition & Fees

Other

Research

Direct Cost

Indirect Cost

Total Income

1997

2002

2007

\$9,184,911

\$456,645

\$10,464,256

\$2,452,217

\$22,558,029

\$12,680,975

\$304,585

\$21,936,110

\$4,041,595

\$38,963,265

\$19,167,144

\$523,943

\$27,318,779

\$6,022,451

\$53,032,317

Full-Time Faculty

Matriculated Students

Student Scholarship Program

65

494

\$725,000

144

572

\$1,515,215

159

669

\$1,980,999



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