WHAT IF WE COULD PREDICT FERTILITY?  P22

THE BIG DATA PROMISE OF 149 MILLION HEALTH RECORDS  P10

PUBLIC HEALTH’S GREATEST CHALLENGES—AND OPPORTUNITIES  P14

WHY THE MPH NEEDS TO CHANGE  P20

The Next Big Things
14 The Future of Public Health
Outgoing SPH Dean Robert F. Meenan talks about what comes next for public health.

22 Predicting Fertility
Women across the world are finding it harder to have kids. Researcher Lauren Wise is launching the nation’s largest Internet-based study of fertility to find out why.  

By Lisa Chedekel

20 Why the MPH Needs to Change
The report that set the standard for public health education is 100 years old. It’s time for a rethink. 

By Jessica Ullian

10 Turning Statistics into Solutions
SPH researchers now have access to the health care data of 149 million Americans. But how to make sense of the numbers?

By Tricia Brick
A scientist, one of Richard Saitz’s most satisfying moments came at an annual meeting of the Research Society on Alcoholism. Presenting results at the podium, a fellow scientist finished his remarks by saying, “I think even Rich Saitz would agree that our conclusions are sound.” The audience chuckled, and Saitz, sitting anonymously among them, beamed. “I’m usually the first person at the microphone grilling the researchers,” he says. “Even beyond my own work, I’m pushing people to improve their science.”

Saitz (CAS’87, MED’87), a School of Public Health and School of Medicine professor, is the new SPH chair of community health sciences. His appointment will further strengthen the School’s research connection to its medicine-teaching neighbor. In his 25 years of researching addiction, Saitz has strived to push his field—and sometimes drag it, kicking and screaming—into the world of evidence-based medicine.

“Rich has no problem calling it straight, and sometimes that bothers people,” says colleague Jeffrey Samet (’92), a MED professor of internal medicine. “But he has engendered a lot of respect in the field because he is true to the data.”

Saitz was drawn to addiction research in the late 1980s during his medical residency at Boston City Hospital (now Boston Medical Center), where many patients were drug- or alcohol-dependent. “Somebody would come in with alcoholic pancreatitis, we would get them improved, and then we would discharge them. And then a few days later they would come back with alcoholic pancreatitis,” he recalls. “We did a lot for the medical condition, but it wasn’t clear to me what we were supposed to be doing for the cause of the problem, the alcohol use.”

Saitz found few scientific studies to guide him, partly because addiction had long been considered a moral or social problem rather than a treatable illness. So he tackled the questions himself, publishing his first influential paper, which refined the standard treatment for alcohol withdrawal, in the Journal of the American Medical Association (JAMA) in 1994. He chose a rigorous scientific design for this study—a randomized, double-blind, controlled trial—even though such studies are notoriously difficult in behavioral science. This scientific rigor has become a hallmark of his work.

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“We’re saying, ‘Don’t stop [nutrition interventions] after the first two years, because there’s potential for kids to catch up in growth, learning, and cognition.’ Just because kids aren’t doing well in the first year or so doesn’t mean it’s over,” he says.

The researchers examined the relationship between growth recovery and cognitive abilities among 8,000 children in Ethiopia, India, Peru, and Vietnam. The children were enrolled in a broader international poverty study, Young Lives, which is funded by the UK and Dutch governments. Because malnutrition is a key factor in stunting, the authors wrote, their findings reinforce the need “to prevent nutritional insults in early life,” while promoting child growth beyond the first two years.

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Infant Under-Nutrition May Be Reversible

THE DAMAGE. Children suffer if they are malnourished during pregnancy and the first two years of life is frequently considered irreversible; no matter what interventions are made later in childhood.

A new study of the effects of impaired height growth in children, published online in the American Journal of Clinical Nutrition, calls that conventional wisdom into question. Researchers found that children who were shorter than expected at one year of age were often behind in school at eight years of age and scored lower on cognitive tests than counterparts who had healthy heights at age one. But children who experienced greater than expected catch-up growth (stunted at one, but recovered by five) were more likely to be in age-appropriate classes at age eight and to have higher scores on standard tests of cognition.

Startling Results

Saitz’s second study is more disconcerting. Published in JAMA in September 2013, and funded by grants from the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse, it asked whether chronic care management (CCM), a proactive, multidisciplinary primary care approach to care, might be useful for treating alcohol dependence.

His team started with 567 people who were heavy users of alcohol, cocaine, or opioids, and assigned them randomly to one of two groups. One group got the “usual” care: phone numbers to treatment centers and an appointment with a primary care clinician. The other group got the blue-ribbon treatment: a team including an internist, a psychiatrist, a nurse, and a social worker, all focusing specifically on their addictions.

Both groups showed marked improvement in many risky behaviors, but Saitz had expected the CCM group to fare much better than patients receiving usual care. Instead, it doesn’t seem like the CCM blue-ribbon care worked any better than a phone number and a follow-up appointment.

Saitz still believes that CCM could help manage drug and alcohol addiction, but may need to target people who are less dependent and more motivated to change. But that raises a bigger question: how do we treat the most serious addicts? If CCM can’t help them, what can? That’s a thorny problem, the kind that puzzles Saitz, he says. “It’s complicated in this,” he says. “But that’s no excuse for not getting it right.”

Funding a Global View

DEPENDING ON THE YEAR, SPH draws students from 20 to 40 different countries. Upon arriving in the US, members of this global student body—and their domestic classmates—can choose to continue globetrotting by selecting practicum and semester-long experiences in countries as far-flung as the Philippines and Kenya.

As an active coinvestigator of the Slone Birth Defects Study and the CDC’s National Birth Defects Prevention Study, Weller examines the risk factors for specific birth defects and conducts follow-up studies of affected children. Outcomes of interest include behavioral problems, cognitive deficits, and quality of life during early childhood and adolescence.

In addition to her research, Weller is director of BU’s reproductive, perinatal, and pediatric epidemiology predoctoral training program. She is also an associate editor of the journal Birth Defects Research Part A: Clinical and Molecular Teratology.

PROFESSOR MARTHA WELLER, one of the first researchers to connect the use of folic acid in early pregnancy with a significantly lower risk of spina bifida, has been appointed SPH’s new chair of epidemiology.

Weller, a senior epidemiologist at the BU Slone Epidemiology Center who earned her doctorate from SPH in 1989, has designed and oversaw several case-control studies of specific birth defects that focus on behavioral, medical, and genetic risk factors. Her continued research into neural tube defects has since identified other risk factors such as maternal obesity, diabetes, and dietary glycemic index.

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Popular Prostate Cancer Therapy Ineffective

A STUDY of more than 15,000 men with early stage prostate cancer has found that those who received androgen deprivation therapy as their primary treatment instead of surgery or radiation did not live any longer than those who received no treatment.

The research team, which included Marianne Ulikzskie Yood (SAR’86, SPH’90, ’98), research associate professor of epidemiology, concluded that the risks of serious adverse events associated with the treatment—which has been tied to impaired cognition, heart disease, diabetes, and other disorders—“mitigate against any clinical or policy rationale for use of primary androgen deprivation therapy in these men.”

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An Advocate for Boston and SPH

WHETHER CHARLES DONAHUE was overseeing three state agencies for the US Department of Health and Human Services or reviewing perinatal health services at the Massachusetts Health Research Institute, he kept coming to the same conclusion: science-based policy changes—grounded primarily on solid epidemiological techniques—could improve maternal and child health.

“I worked for many, many years on how can you make data usable and understandable to people and still credible,” says Donahue, whose own research has appeared in publications such as Journal of the American Medical Association and the New England Journal of Medicine. “I have always had an interest in the value of quantitative and understandable to people and still credible,” says Donahue, whose own research has appeared in publications such as Journal of the American Medical Association and the New England Journal of Medicine. “I have always had an interest in the value of quantitative and understandable to people and still credible,” says Donahue, whose own research has appeared in publications such as Journal of the American Medical Association and the New England Journal of Medicine. “I have always had an interest in the value of quantitative and understandable to people and still credible,” says Donahue, whose own research has appeared in publications such as Journal of the American Medical Association and the New England Journal of Medicine. “I have always had an interest in the value of quantitative and understandable to people and still credible. “I have always had an interest in the value of quantitative and understandable to people and still credible.”

After a 40-year career in health care system planning and management, Donahue is bringing his expertise and interests to SPH as a member of the Dean’s Advisory Board.

A former president and cofounder of HealthCare Value Management, which he helped build into New England’s largest network of health care providers used by self-funded preferred provider organization (PPO) plans, Donahue will advise the School on evaluation strategy.

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He also continues to point to immunological effects of Gulf War illness. While the committee acknowledged the need for additional research to further clarify the role of immunological effects of Gulf War illness.

“AIDS research has been characterized by a confluence of efforts to find a cure and mitigate against any clinical or policy rationale for use of primary androgen deprivation therapy in these men.”

Exposing an Oral Health Gap

A STUDY BY the Partnership in Housing & Health has found that residents of publicly supported housing are less likely to have had routine preventive dental care and more likely to have experienced serious oral health issues resulting in tooth loss.

Fund ed by the Centers for Disease Control and Prevention and published in the Journal of Urban Health, the study discloses a serious gap in oral health care for an already vulnerable population.

The researchers found that despite being as likely to have a dental visit, both public housing and rental assistance residents were significantly less likely than other residents to have had a cleaning. Residents of rental assistance units were also more than twice as likely to have had six or more teeth removed than nonpublic housing residents.

According to the researchers, one reason for such a high incidence of extractions is the Medicaid dental benefit structure. As of January 2014, Dental Medicaid does not cover simple restorative procedures, including fillings, though it does cover tooth extractions. For people—especially the elderly—with limited financial resources, the only feasible option may be to have their teeth extracted.

This work isn’t just about telling people they need to floss,” says Harold Cox, associate dean for public health practice and professor of community health services. “It’s about preventing a wide range of chronic diseases and improving self-confidence and mental health. Rehabilitation does not mean treatment for welfare recipients has been linked to greater success in finding employment. The positive effects of good oral health are incredibly far-reaching.”

The SPH-based center has received funding from the Sunshine Lady Foundation to pilot the Boston Senior Oral Health Project, which provides free oral health screenings to seniors living in public housing. Those identified as needing treatment (deep cleanings, fillings, dentures, etc.) are referred to local clinics, where they can receive care free of charge.

Advising the Government on Gulf War Illness

ACCORDING TO a report to a congressional mandated panel directed by an SPH researcher, progress has been made toward understanding the physiological mechanisms that underlie Gulf War Illness and identifying possible treatments.

Established to advise the government on medical research, the Research Advisory Committee on Gulf War Veterans’ Illnesses made headlines in 2008 when it published a report that established Gulf War illness as a real condition that affected as many as 250,000 veterans of the first Gulf War. Its latest report updates the government on the research undertaken since to better understand and treat the condition.

“Studies published since 2008 continue to support the conclusion that Gulf War Illness is closely related to chemical exposures in the combat theater,” says Robert White, SPH chair of environmental health and associate dean for research, the committee’s scientific director. “And many studies update the brain and central nervous system, using imaging, EEG, and other objective measures of brain structure and function, add to the existing evidence that central nervous system dysfunction is a critical element in the disorder. Evidence also continues to point to immunological effects of Gulf War Illness.” Gulf War Illness refers to the chronic symptoms that affect veterans of that conflict at markedly elevated rates, as compared to other veterans’ groups and to the US population as a whole. Symptoms typically include problems of widespread pain, headache, persistent difficulty with memory and thinking, fatigue, breathing problems, stomach and intestinal symptoms, and skin abnormalities.

“The report cited a number of ‘promising’ treatment studies, including those testing certain dietary supplements, intranasal insulin, and continuous positive airway pressure to ease fatigue and pain and improve cognitive function.”

In efforts to identify biomarkers of the condition, a consortium of institutions led by SPH’s studying markers in the blood and brain fluid in addition to brain imaging and memory testing. In a separate trial funded by a $1.7 million award from the Department of Defense, Kimberly Sullivan (MED’99), research assistant professor of environmental health, is helping develop a possible treat- ment that uses intranasal insulin to target neuroinflammation.

While the committee applauded an increase in the number of treatment studies funded by the Department of Defense’s Medical Research Program, it expressed concern about a lack of research on other health problems, from PTSD to Parkinson’s to cancers, and mortal ity among Gulf War veterans.
Depression Tied to Adult-Onset Asthma

African American women who reported high levels of depressive symptoms had a greater likelihood of adult-onset asthma compared to women who reported fewer depressive symptoms, according to a new study by SPH researchers with the Stone Epidemiology Center. The investigators followed 31,848 African American women between 1999 and 2011 who were participating in the Black Women’s Health Study; the largest follow-up study of the health of African American women in the United States. The results indicated that as the frequency of depressive symptoms increased, the incidence of adult-onset asthma also rose—up to twofold for those with the highest frequency of depressive symptoms. “The hypothesized mechanism linking depressive symptoms to asthma incidence is depression-related stress and its physiological consequences, particularly effects on the immune system and the airways,” says lead researcher Professor Patricia Coupar (’97, ’98), a senior epidemiologist at the Stone Center. “Given the high prevalence of both asthma and depression in women, the association of public health importance.”

National Research Awards for Students

Two Prominent National Academic Societies have Recognized Two SPH Epidemiology Doctoral Students for their Research.

The Society for Epidemiologic Research awarded Samantha Parker (‘13) the Tyrrel Lilenfeld Prize Award and the Society for Adolescent Health and Medicine honored Craig Ross (’14) with the New Investigators Award.

Parker’s research interests include environmental risk factors and birth defects; the inclusion of prenatal diagnosis and pregnancy outcome data to enhance birth defects research; and reproductive history and future reproductive outcomes. She plans to focus her dissertation on reproductive history and future pregnancy outcomes. She has reported the high prevalence of both asthma and depression in women, the association of public health importance.

Ross is a 30-year career has spanned multiple industries, from high technology to financial services to media and advertising. His primary research interests are adolescent development and risk factors contributing to adolescent behavioral health problems. Parker and Ross are both members of SPH’s Training Program in Reproductive, Perinatal & Pediatric Epidemiology, a National Institute of Child Health and Human Development-funded, four-year, predoctoral training program.

CASE CLOSED: Legal Drinking Age

In 2006, the Nonprofit Organization Choose Responsibility called for repealing the 1984 National Minimum Drinking Age Act, which had led to 50 states to establish a minimum legal drinking age of 21. States, it was argued, should be allowed to lower drinking age minimums to 18. The move helped spark new research on the age-21 minimum. Now, a comprehensive review of that research—led by William Delong, professor of community health sciences—provides strong evidence that the act is saving lives.

In Case Closed: Research Evidence on the Positive Public Health Impact of the Age-21 Minimum Legal Drinking Age in the United States, Delong found the laws are associated with lower rates of drunk driving crashes among young people. There is also evidence that the age-minimum curbs other hazards of heavy drinking, including suicide, dating violence, and unplanned sex.

“The evidence is clear that there would be consequences if we lowered the drinking age law,” he says. In one study, researchers found the rate of youth binge drinking has declined; in 2011, 36 percent of college students said they had engaged in heavy episodic drinking (five or more drinks in a sitting) in the previous two weeks, compared with 43 percent of students in 1998, the first year that all US states had an age-21 law. There was an even bigger decline among high school seniors—from 35 to 22 percent.

According to the review, the National Highway Traffic Safety Administration estimates the law has saved up to 900 lives a year in alcohol-related traffic deaths.

Delong acknowledges that many young people break the law and drink anyway, but maintains that evidence shows the law is working. Often, minors do not want to be caught drinking, and therefore take fewer risks—like getting behind the wheel—while “there are many young people who do wait until they’re 21 to drink.”

Delong says tougher enforcement of age-21 laws, rather than a repeal, is what’s needed. Clinical trials have found that when college towns put more effort into enforcing the law—and advertise that fact to students—student drinking declines.

“Just because a law is commonly disobeyed,” contends Delong, “doesn’t mean we should eliminate it.”
When environmental health professor Jonathan Levy and his colleagues wanted to study the effects of airport-related noise pollution on cardiovascular health, they turned to one of the nation’s largest available health databases, the data set of Medicare billing claims. Using statistical modeling, the scientists assessed thousands of zip codes’ exposure to aircraft noise and cross-referenced their geographical data with cardiovascular hospital admissions in the Medicare database. Working with a sample of more than 6 million patient records from the database, the researchers found a statistically significant increase in admissions among people living in affected zip codes.

But what if, rather than being limited to Medicare data that was accurate only to zip code level, researchers had access to information at the level of individual residential blocks or even addresses? What if they could also incorporate risk-factor information about smoking or comorbidity, or details about medications and other treatment?

They’re the kinds of research opportunities big data—a buzz phrase for the explosion of complex facts and statistics modern computing has allowed us to generate and store—has the potential to provide. But for most researchers (and not just those in the public health arena),
**OUR INVESTIGATORS ARE ALREADY ASKING WHAT ARE THE TYPES OF QUESTIONS THAT HAVE ELUDED US IN THE PAST IN OUR DATA? THAT’S HOW WE ARE THINKING ABOUT HOW TO USE THESE LARGE DATA SETS. IT’S ALMOST LIMITED ONLY BY YOUR IMAGINATION.**

- ASSOCIATE MARK PRASHER

As the availability of and interest in research using big data continues to grow, SPH researchers have long used such large health data bases as those of the Centers for Medicare and Medicaid Services (CMS), the US Department of Veterans Affairs (VA), and the Centers for Disease Control and Prevention (CDC) to study public health problems, and to develop a deeper understanding of the human experience. But how are we thinking about how to use these data sets in the future? That’s how we are thinking about how to use these large data sets. It’s almost limited only by your imagination.

Epidemiologists could develop statistical models about the relationships between various interventions and pedi atric asthma outcomes. Health policy specialists might delve into readmission rates, examining clinical decision-making to better understand the factors that impact readmissions. Researchers might be interested in the effectiveness of personalized medicine could explore the ways in which genome information is being used within clinical environments in different areas of the country to better understand how these new technologies may affect care.

Consider breast cancer, where there are now different types of genomic tests available. Berowitz says “How are these tests impacting treatment? How are they being used? How do they need more clinically detailed information—about the stages of the cancer, how large the tumor is? That information is not available in standard clinical settings. But that’s the kind of information we will now have access to in this Humedica data.”

Like their colleagues in countless other fields, public health researchers are still learning how to mobilize technology to best use the particular strengths of these ever-larger data sets. “Being able to think about using data in ways that we haven’t before,” says Prashker, “is now that we’re now ‘the tip of the iceberg’ when we know the data is good, we know methodologically how to oversee the timing of questions in using these data sets and frankly, computing power has gotten to the point where we now feel it’s ready for prime time. But we are really just starting to scratch the surface of analyzing all this data. We’re going to become better and better at knowing how to use these data sets, to develop more sophisticated methodological tools—and to start thinking in ways we haven’t thought before.”

In the first years of working with the larger data set, many SPH scientists will likely seek to expand on research they have conducted previously on the more circumscribed populations of the VA or CMS databases. But other researchers will be delving into the terra incognita of the data set, seeking correlations that simply couldn’t be seen before. In this task they will face challenges now being tackled by scientists across the world of research.

Making Sense of the Numbers

The sheer volume of data—from all these different large data sets—has led to the creation and collection of unprecedented amounts of information. As computing power and storage capacity continue to expand exponentially, scientific research is being transformed by the availability of data sets containing quantities of information so vast that analysis requires advanced computational methods.

It is often said of big data sets generally that they are hypothesis generators. They express correlation rather than causation. However, in public health research, a data set of this size can also allow researchers to compile a control group sample that is a near-exact match to the experimental group among millions of members. Given this ability to control for variables and a study population in the thousands or millions, the risk of a correlation occurring by chance is greatly reduced.

As the availability of and interest in research using big data increases, scientists across RU are incorporating means and methods from informatics—the young, tech-heavy field concerned with the collection, management, and analysis of data. But even those who have long worked with the smaller databases may have much to learn before they can effectively use the Optum Labs data in their research—let alone fully explore the long-term potential of this resource.

“One of the biggest barriers to using these data sets is that if it can take years, even decades, for folks to feel they understand the data set, to be able to ask interesting questions,” Prashker says. “If you’re a faculty member in epidemiology, maybe you aren’t fully comfortable with the other data sets.”

A new initiative aims to take down those barriers—empowering researchers to take advantage of the School’s ever-expanding collections of digital resources. The Interdisciplinary Informatics Initiative (IFI), which has been seed funded by a generous anonymous donor, will serve as colloquium, clearinghouse, and community forum: Data set experts will be available to educate researchers at every level, from introducing the strengths and weaknesses of the various data sets to providing advice on how to best utilize such answers. With spent on research questions, informaticians, statisticians, and programmers will provide data-mining guidance and technical expertise. And content-area experts will lead collaborative groups focusing on health care issues from costs of care to genetics to environmental exposures to clinical trials.

The initiative will enable researchers to mobilize the School’s decades of expertise with older data resources in order to ask research questions across large data sets, extending their research to varied populations and across differing levels of data availability. “Maybe you have the cancer data but you don’t have the air pollution data but you have the thousands or millions, or even hundreds of millions, of data sets, but you don’t have the expertise to mine it yourself. With this initiative, you’ll be able to ask a research question and have people with informatics expertise help you find the best way to use the data to answer it,” says White. “Having our own group at the School will encourage people to seek out these data sets, to better understand them, and to be aware that they have these resources at their fingertips.”

The initiative also promises to be an invaluable resource for students, who will have opportunities to access the data sets for training, coursework, and their own thesis research. “We want to make sure we’re training the next generation to be able to use this data in their jobs, whether in patient care, in health departments, or in research,” Prashker says. “This is particularly relevant in health care but in other industries, too. Folks are going to have to be able to use this information or they’re not going to be relevant anymore.”
WHEN ROBERT F. MEENAN BECAME DEAN OF SPH 22 years ago, it had no home and a budget of $8 million. Today, it’s housed in the iconic Talbot Building and has a budget of $85 million.

Outgoing SPH Dean Robert F. Meenan talks about what comes next for public health.

PHOTOGRAPH BY KELLY DAVIDSON SAVAGE
When he became dean 22 years ago, Robert F. Meenan inherited a small school with a largely local focus. Today, Boston University School of Public Health is an internationally recognized leader in the field, with a $45 million research portfolio, 1,000 students, and programs spanning the globe.

After more than two decades at the helm, in November 2013 Meenan announced his plans to step down. A rheumatologist with master’s degrees in public health and business administration, Meenan (MED’72, GSM’89) oversaw a period of growing student enrollment, expanding research support, and increasing prominence in the national rankings. He also served as a School of Medicine professor and helped establish SPH’s global health department and the BU-Wide Center for Global Health & Development.

“Since his more than two decades as dean, Bob Meenan has led the transformation of SPH into one of the preeminent schools of public health in the nation,” said BU President Robert A. Brown in announcing Meenan’s decision. “He has nurtured vibrant educational and research programs, and has built and supported an outstanding faculty. His legacy will be found in the generations of SPH graduates who are helping to transform public health and health care delivery around the world.”

Meenan recently spoke with sphere to discuss his tenure at SPH, the evolution of the School over the past two decades, and the future of public health practice.

**sphere: What are the biggest challenges for SPH graduates today?**

**ROBERT F. MEENAN:** The major challenges our new graduates face are the same ones that all the members of their generational cohort are facing: a tepid economy, rapid pace of change, evolving social roles, and technology. Perhaps the most basic challenge is achieving balance: balance between work and family, balance between human relationships and technology, balance between individual rights and social cohesion, balance between generations, balance between American peace and prosperity and the peace and prosperity of other nations.

SPH graduates have the decided advantage of being able to work in a variety of roles related to public health and health care. Those fields continue to grow in size and scope, providing robust employment opportunities for those looking advanced degrees in public health. The roles pursued by our graduates also provide inherent meaning and satisfaction from the very nature of the work, and they tend to generate insights and solutions to a number of the large challenges faced by the millennial generation.

**What do you see as the greatest opportunities in public health?**

With regard to global health, the greatest opportunities continue to be in the classic areas of women’s and children’s health. Improving the status of women is the most important factor in raising the overall human development level in any country, and better health care— including birth control—and education are the keys to advancing the status of women. Similarly, reducing infant mortality is the single best way to improve life expectancy in developing countries. I am very pleased that SPH has strong education and research programs in global health and in maternal and child health that focus on these issues.

With regard to the United States, a key health system reform is the greatest opportunity for public health. Our health care system is the most expensive in the world, but not the best in the world for health outcomes. Furthermore, the cost of our health care system is draining personal and government resources from other investments that promote health and happiness, including education, housing, and public health. Public health professionals should play a leading role in efforts to reform our health care system so that it delivers high-quality care in more effective and less costly ways. There is an old saying that war is too important to be left to the generals. Similarly, health care is too important, and too expensive, to be left to the physicians.

**What are the greatest threats to public health?**

The greatest global threat to public health is a declining and degraded environment. Threats to the environment include global warming, habitat destruction, air pollution, and industrial toxins. Despite our growing awareness of these issues, they are among the greatest challenges faced by the millennial generation.

**I SEE HEALTH SYSTEM reform as the greatest opportunity for public health. Public health professionals should play a leading role in efforts to reform our health care system so that it delivers high-quality care in more effective and less costly ways. There is an old saying that war is too important to be left to the generals. Similarly, health care is too important, and too expensive, to be left to the physicians.**

Meenan's leadership has been critically important in building SPH's global health department and the BU-Wide Center for Global Health & Development, which is leading the way in efforts to reform our health care system.

**How do you believe that information and communication technologies will change the practice of public health?**

Information and communication technologies will continue to change public health as they will in virtually every field focused on the classic activities of departments of public health and other governmental agencies. Since then, the field has expanded enormously in size and scope, and public health professionals have moved into a wide range of not-for-profit and for-profit organizations. At SPH, these changes have manifested themselves as steady growth in applications, enrollments, and graduates, and in the diversification of our education and research programs. We now offer more than 350 graduate degrees each year and offer new education programs ranging from statistical genetics to pharmaceutical policy to exposure assessment. We have a robust career services office that assists our graduates in finding positions across a broad range of organizations. In addition to public health departments, those organizations are increasingly in insurance companies, drug development companies, and health care consulting companies.

**How do you believe that information and communication technologies will change the practice of public health?**

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**What are the greatest threats to public health?**

The greatest global threat to public health is a declining and degraded environment. Threats to the environment include global warming, habitat destruction, air pollution, and industrial toxins. Despite our growing awareness of these issues, they are among the greatest challenges faced by the millennial generation.

**I SEE HEALTH SYSTEM reform as the greatest opportunity for public health. Public health professionals should play a leading role in efforts to reform our health care system so that it delivers high-quality care in more effective and less costly ways. There is an old saying that war is too important to be left to the generals. Similarly, health care is too important, and too expensive, to be left to the physicians.**
SPH by the Numbers

CURRENT STUDENTS’ COUNTRIES OF ORIGIN:

<table>
<thead>
<tr>
<th>Country</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Armenia</td>
<td>4</td>
</tr>
<tr>
<td>Egypt</td>
<td>2</td>
</tr>
<tr>
<td>Morocco</td>
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</tr>
<tr>
<td>Nigeria</td>
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</tr>
<tr>
<td>Nepal</td>
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<tr>
<td>Tunisia</td>
<td>1</td>
</tr>
<tr>
<td>United States</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>48</td>
</tr>
</tbody>
</table>

SPH is an international-caliber academic institution with over 1,000 students, a large and robust research program, and an annual operating budget in excess of $85 million.

In terms of specific achievements, I am most proud of our home, the Talbot Building, global health, and the School’s steady climb in the rankings. When I first came to the School, faculty and departments were scattered among multiple buildings on campus, including a few that were less than desirable, and the School had no physical identity. That changed dramatically in 1997, when we were able to consolidate all of our departments in a completely restored Talbot Building. The Talbot Building gave us a home: a prominent presence on the Medical Campus, and a critically important sense of pride and accomplishment. The Talbot has since become one of BU’s most iconic buildings, featured in marketing materials and adorning the sides of shuttle buses.

The growth of global health has been phenomenal. It has not just gotten much better; it has also gotten much bigger. "

Why is there still a need to raise support for faculty at SPH through endowed professorships and faculty teaching and research funds?

Development support is vital for SPH because the School has a two-part mission that involves the transmission of knowledge through education and the creation of knowledge through research. Both are very expensive endeavors. On the education side, we strive to manage tuition so that our graduates do not have substantial debt as they enter the workforce. Donations that support scholarships are enormously helpful to our efforts. I am proud to have established an endowed scholarship fund at SPH that will be an ongoing source of support for students.

On the research side, the grants that our faculty receive do not cover the full costs of doing research or cover their full salaries. Donations that support faculty play a critical role in allowing us to maintain a robust and productive research enterprise. I am pleased that SPH is on track to meet its $40 million fundraising goal within the ongoing Campaign for Boston University, and I am deeply appreciative for the generosity of our alumni, faculty, and staff, and especially of the members of the SPH Dean’s Advisory Board.

SCHOLARSHIPS

$8,546,906

Scholarship budget 2013–2014

BU CAMPAIGN UPDATE

$30,000,000

Total raised by SPH so far

78%

Raised of total goal

BU GIVING DAY

71 donors supported the SPH Annual Fund

RANKING

11 U.S. News & World Report best graduate schools of public health

FACULTY

182 Full-time

250 Part-time and adjunct

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SPH RESEARCH AWARDS, FY13–FY14

<table>
<thead>
<tr>
<th>Award</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Best Paper Award</td>
<td>$4,000</td>
</tr>
<tr>
<td>Young Investigator Award</td>
<td>$3,500</td>
</tr>
<tr>
<td>Outstanding Mentor Award</td>
<td>$3,000</td>
</tr>
</tbody>
</table>

BACK IN 1992, SPH was ranked 16th out of 26 schools of public health by U.S. News & World Report. Since then, our ranking has climbed while the number of schools included has increased. We have moved from 16 to 15 to 13 to our current ranking of 11 among the 40 schools included in the last round of rankings. This trend in our ranking is a clear sign that SPH has not just gotten much bigger; it has also gotten much better.

"Why is there still a need to raise support for faculty at SPH through endowed professorships and faculty teaching and research funds?"

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In anticipation of the Welch-Rose Report centennial, the Association of Schools and Programs of Public Health convened an expert panel to explore how the MPH degree could adapt to such changes. In January 2014, the panel—consisting of 19 members drawn from across the country and chaired by outgoing SPH Dean Robert F. Mosman—published its recommendations in Framing the Future: A Master of Public Health Degree for the 21st Century. The panel noted the rise in undergraduate public health programs, the new career opportunities for MPH candidates, and the increase in global health issues that concern even local health care workers. To address these issues, Framing the Future outlined the ideal 21st-century MPH curriculum, calling for programs to differentiate master’s degrees from undergraduate public health majors by providing more skill-building courses for graduate-level students, offering concentrations that reflect the needs of growing industries such as pharmaceuticals or medical device manufacturing, and adding a global health component to their core coursework.

Having played a major role in driving the national conversation, the School is putting the new standards in place at home with its plan for a new curriculum, MPH2015. The curriculum is designed to recognize the increasingly broad applications for public health knowledge and equip students with the academic and practical skills they need to launch their careers. “Many students with a passion for doing something meaningful are getting exposed to public health for the first time, and it’s really exciting to see what they can and should do,” says Professor Lisa Sullivan (GRS’86, PhD’92), chair of biostatistics and associate dean for education, who served with Mosman on the national panel. “What we’re trying to do here [at SPH] is anticipate the needs in the field, and really excitingly, we can adapt to such changes.”

A century later, the structure outlined in the Welch-Rose Report still shapes public health education, but the field has grown in ways its early supporters never imagined possible. At Boston University School of Public Health, for example, student practicum work can range from examining care at local homeless shelters to reducing infant mortality in Zambia. Nationally, applications for the Master of Public Health degree doubled between 2000 and 2012, and health care workers are in demand in a wider range of industries.

The core of the revamped MPH degree will be capped by a new required course offered by the career services department, which has added a sixth full-time staffer to expand its concentration-specific counseling. The pass-fail course, which will be offered several times a year, will guide students through the career preparation process with both general and field-specific information. “We are saying very strongly to our MPH students that preparing for your career does not just mean having the technical public health skills, but also the skills that will help you land the job where you can use them,” says Mark Prashker, associate dean.

Pilot courses for MPH2015 will begin in 2015; the new curriculum will be formally implemented in the next year. Students could adapt to such changes. In January 2014, the panel—consisting of 19 members drawn from across the country and chaired by outgoing SPH Dean Robert F. Mosman—published its recommendations in Framing the Future: A Master of Public Health Degree for the 21st Century. The panel noted the rise in undergraduate public health programs, the new career opportunities for MPH candidates, and the increase in global health issues that concern even local health care workers. To address these issues, Framing the Future outlined the ideal 21st-century MPH curriculum, calling for programs to differentiate master’s degrees from undergraduate public health majors by providing more skill-building courses for graduate-level students, offering concentrations that reflect the needs of growing industries such as pharmaceuticals or medical device manufacturing, and adding a global health component to their core coursework.

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Women across the world are finding it harder to have kids. Researcher Lauren Wise is launching the nation’s largest Internet-based study of fertility to find out why.

PREDICTING FERTILITY

BY LISA CHEDEKEL  PHOTOGRAPHY BY CONOR DOHERTY

In 2006, as Lauren Wise was immersed in researching the fertility of men exposed prenatally to the now-banned drug DES (diethylstilbestrol), she and her husband decided it was time to begin their own family. At 32, the Boston University School of Public Health epidemiologist had already published dozens of papers about reproductive risks.

But as the months ticked by fruitlessly, Wise gained personal insight into the same fertility quandary she had explored professionally. “I’m thinking, ‘I’m 32, I should be able to have babies right away,’” she recalls. “But it took longer than I expected. It was frustrating.” Several months later, Wise got pregnant with her first child. And two years after the birth of her daughter, she became pregnant again, soon after beginning to try.

Those varied experiences deepened her determination to identify the myriad factors that influence fertility—a drive that now has her leading the largest Internet-based study of fertility in the United States. “I think my own experience helped me to understand the complexities of reproduction—physiologically and emotionally,” Wise says. “It made the concepts very real for me. It fueled my interest and passion.”

Wise, an associate professor of epidemiology and a senior epidemiologist at BU’s Slone Epidemiology Center, is the lead investigator of the PRESTO (Pregnancy Study Online) project, which aims to identify lifestyle factors such as diet, exercise, and medication use that may affect fertility and pregnancy outcomes. The study relies on Internet-based methods to recruit and follow 2,500 women, ages 21 to 45; it’s also

Associate Professor Lauren Wise will study potential fertility factors from lubricant use to whether male partners carry their cell phones in their pants’ pockets.
IDENTIFYING OBSTACLES

Infertility is among the most painful problems a couple can face, with emotional repercussions that can last for years—or a lifetime.

Fertility rates in the US hit a record low in 2012 for the second consecutive year for women aged 15 to 44, in part because of a decline in the number of teenage pregnancies. In Massachusetts, the Department of Public Health reports that fertility rates are dropping and remain 16 percent below the national average.

The causes are often hard to pinpoint and can be difficult to treat. In 2012, more than 176,000 cycles of assisted reproduction were performed at clinics in the US, with the use of in vitro fertilization and other technologies doubling over the last decade.

Wise’s focus on infertility builds on a theme running through her work: identifying obstacles to women’s reproductive health and figuring out ways around them.

As an undergraduate at Bowdoin College in Maine, the Canadian native wrote her honors thesis about contraceptive use among women who wanted to both get pregnant and avoid the risk of sexually transmitted diseases. “I’ve always had an interest in women’s reproductive health, and over time, there’s been a more women-centered perspective on the research agenda,” she says. “It’s been satisfying to be a part of that.”

For the last 12 years, Wise has been on the Slone team working on the long-running Black Women’s Health Study, which has examined fertility and other factors among African American women. She first got involved in the study after college, when she landed a one-year job at Slone as a research assistant, processing and editing paper questionnaires.

To date, she has led more than 15 studies on the causes and incidence of uterine fibroids in black women. Diagnosed in about 30 percent of reproductive-age women, uterine fibroids can cause pelvic pain, heavy menstral bleeding, infertility, and pregnancy complications. They are the primary cause of hysterectomy in the US.

Wise’s research has found that fibroid growth is influenced by factors ranging from genetics, childbirth, diet, and obesity, to dairy and alcohol consumption—and possibly even the use of hair relaxers. She is now leading a study, funded by the National Institutes of Health, looking at whether psychosocial factors, such as child abuse, socioeconomic adversity, and depression, increase fibroid risk.

Her interest in the determinants of uterine fibroids started with her doctoral dissertation, which examined reproductive and hormonal risk factors of the condition. “I’ve always been fascinated by the topic partly because it had received so little attention,” she says. “It’s a huge problem for African American women, who are two to three times more likely than white women to be diagnosed with fibroids. It affects women in their prime and undermines their quality of life,” Wise says. “It’s amazing.”

In 2011, her work on fibroids won her the prestigious Young Investigator’s Award for Distinguished Research in Public Health from the Association of Schools & Programs of Public Health and Pfizer.

“A good scientist is curious, inquisitive, skeptical, persistent, and above all, interested in all those things, as well as a good manager of her research team,” says Kenneth Rothman, professor of epidemiology and one of the first US researchers to suggest using online methods to conduct research on fertility. “She is an expert on women’s health, and equally accomplished in the epidemiologic methods needed to address the complicated problems that she is drawn to.”

Besides fibroid research, Wise has tackled other women’s health issues, including risk factors for macromnesia and preterm birth (funded by the Hood Foundation), as well as menopause, endometrial and breast cancers, and infertility.

FINDING FERTILITY PREDICTORS

Wise’s latest project, PRESTO, will build on the findings of an Internet-based study of fertility in Denmark that helped launch with Rothman and Danish colleagues in 2007. The Danish study, headed by Elizabeth Hatch, an MPH professor of epidemiology, has produced a series of high-interest results, covering everything from the impact on fertility of consuming caffeine (it’s OK—soda is not) to age (fertility peaks around 30 for men and women and declines slightly later than suggested in previous studies). Researchers have also found that over-exercising may make it harder for healthy-weight women to conceive, while moderate exercising is beneficial, and that shorter menstrual cycle length, obesity, and weight gain are associated with delays in pregnancy.

According to Wise, the PRESTO study is breaking new ground in the US by relying on the Internet for recruiting and interacting with participants—study methods that may prove more cost-effective than traditional research techniques.

“I’ve always had an interest in women’s reproductive health, and over time, there’s been a more women-centered perspective on the research agenda. It’s been satisfying to be a part of that.”

“Fueled by hope”

With more than 100 published studies, Wise hasn’t lost her curiosity or intensity. When she talks about PRESTO, she brightens as she contemplates possible breakthroughs in understanding how diet, exercise, and menstrual cycles influence fertility.

Although she had two successful pregnancies of her own—she has a 6-year-old daughter and a 4-year-old son—she still draws on the early frustrations and fears of women waiting to start a family in their thirties.

“I think I can relate on some important levels to what many women experience. Reproduction is not an easy thing,” she says. “That’s why I’m so fascinated by it, because I think there are so many steps along the way where something can go wrong—and I’m always amazed when a healthy baby comes into this world.

“If there is anything I can do to discover truths about factors that might promote fertility, I want to be able to share that information with other couples. That’s the hope that keeps me going.”

“The process of studying people via the Internet is really still in its early days,” she says. “We’re testing several ideas here, including whether this kind of research method will work in the United States as well as it does in Denmark. There are cultural differences related to trust and willingness to participate in scientific studies, she adds.

Wise and her team are searching for fertility factors by casting a wide net that looks beyond age to issues such as lubricant and antidepressant use, socioeconomic factors, and even whether male partners carry their cell phones in their pants’ pockets.

Coupled with data from the Danish study, Wise says, findings from PRESTO could identify certain key “fertility predictors”—while also revolutionizing the methods used to study epidemiology.

“We hope to improve the scientific and technical methods used to study fertility,” Wise says. “Yet it’s been so understudied.”

“With women waiting longer to start a family, we really need to identify factors that lead to successful pregnancies in older women—and we just don’t know enough,” Wise says. “Our hope is to turn up things that might be modifiable, for men and women.”

As part of PRESTO, participants will fill out detailed dietary questionnaires that may provide clues about what kinds of foods help or hurt fertility. Because little is known about dietary factors, it is an area where Wise hopes to make substantial inroads.

A subset of women will participate in a smaller study (E-PRESTO) that will seek to determine whether chemical compounds such as plasticizers and bisphenol A (BPA), contained in some consumer products, reduce fertility. The research team also plans to track birth outcomes for participants’ children who are born in Massachusetts.

“A subset of women will participate in a smaller study (E-PRESTO) that will seek to determine whether chemical compounds such as plasticizers and bisphenol A contained in some consumer products, reduce fertility. The research team also plans to track birth outcomes for participants’ children who are born in Massachusetts.”
To the Boston University School of Public Health, whose stakeholders, I am very grateful to all the individuals, foundations, and able populations.

Thank you for your generosity and support.

Sincerely,

Dean's Advisory Board, Boston University School of Public Health

Thank You, Donors!
I thank the donor who funded the scholarship for their ability to work to help prevent the injustices I have seen.

As an SPH Community Scholars Program, recipient, I had to understand that I could not possibly develop my full potential without the support of my community, without the rich pool of educational resources throughout the world, pursuing graduate studies while working in nonprofit health care community. With the rising cost of education throughout the world, pursuing graduate studies while working in nonprofit health care community is allowing him to study full time.

**WHY I GIVE**

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It gives me the opportunity to develop the skills needed to make a difference in the world. I hope that with the education this scholarship has afforded me, I will be better able to help work to prevent the injustices I have seen.

I thank the donor who funded the scholarship for their ability to work to help prevent the injustices I have seen.

When he was developing countries as an under-graduate, Vladimir Kogan (’03) says he “saw firsthand the pressing need for trained public health professionals.”

An award from SPH’s Outstanding Scholars Fund— which supports a student in the top 10 percent of the incoming graduate class—is allowing him to study full time.

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To find out more about providing scholarships, either through gifts or estate planning, visit www.bu.edu/sph/give or call 617-638-4658.
The Future of Public Health

10

Turning Statistics into Solutions

$5,000–$9,999
Pfizer Inc.
John Snow Institute Inc.
Doris Duke Charitable Foundation
Donato J. Tramuto Foundation
Blue Cross Blue Shield of Massachusetts
Beth Israel Deaconess Medical Center

$10,000–$24,999
Worcester Housing Authority
March of Dimes National Foundation
Liberty Mutual Foundation
The Health Foundation of Central Connecticut
Conrad N. Hilton Foundation

$25,000–$49,999
Systagenix
New Hampshire Charitable Foundation
Mary Kay Foundation
David and Lucile Packard Foundation

$50,000–$99,999
The Sunshine Lady Foundation, Inc.

$1–$2,499
Boston Medical Center
Bois Consulting Co., Inc.
The Ayco Charitable Foundation

$2,500–$4,999
The Ambassador K. Rasi 1999 Trust

$1–$2,499
The Ayco Charitable Foundation
Beryl K. Spearman Living Trust
Box Consulting Co., Inc.
Boston Medical Center
Bush Graduating Students Endowment
Quantamade Waltersmall Fund
Lawrence Cross Renewable Trust
Massachusetts Environmental Health Association
McKnight Living Trust
Medscape Foundation
The Merck Foundation
Patrick Centered Outcomes Research Institute
Thayer Research Fund

MATCHING GIFTS
Ben & Jerry’s Foundation
Cubist Pharmaceuticals
General Reinsurance Corporation
Medscape Foundation
Meris & Co., Inc.
Pharic, Inc.
UnderHealth Group
W. K. Kellogg Foundation

IN KIND GIFTS
Blue Cross Blue Shield of Massachusetts
Edward Tuddenham Fellowship Fund
Felix & Linda LLP

CLAFIN SOCIETY MEMBERS
The following people have generously included $1,000 or more in their will, trust, or estate plans:

Laura A. Armstrong (SPH’81)
Patricia G. Dvor Coughlin (SD’75, SPH’79)
Prissie B. Ellis (SPH’90)
Robert F. Mower (MED’72, GSM’91)
Peter Ruch (SPH’78)
Kurt Tropnich (SPH’87)

ENDOWED PROFESSORSHIP
Edward L. Seling Professorship Fund in Legal Medicine

ENDOWED SCHOLARSHIPS
Community Scholarships Endowed Scholarship Fund

ENDOWED LECTURESHIP
William H. Brown Lectureship Fund
Cathy Shine Lectureship Fund

ENDOWED SPECIAL FUND
Allan R. Meyers Memorial Prize Fund for Excellence in Health Services

Katherine M. Skene Memorial Prize Fund for Commitment to the Study of Women’s Health Issues

STUDENT ACADEMIC AWARD FUNDS
Allan R. Meyers Memorial Prize Fund for Excellence in Health Services
Dr. William B. Paterson Memorial Prize Fund for Excellence in Environmental and Occupational Health
Helen Kayne Prize Fund for Excellence in Biostatistics

The John Snow, Inc. Award Fund in International Health
Leonardi Grant Award Fund for Academic Excellence
Public Health Practice Fund: Award for Student Excellence in Public Health Practice
The Theodore Colton Prize Fund for Excellence in Epidemiology

FACULTY TEACHING AWARD
Norman A. Scott, PhD Excellence in Teaching Award Fund

MEMORIAL GIFTS
Ruth Wiliam Siegel Memorial Teaching Fund

SPECIAL PURPOSE FUNDS
Boston University School of Public Health Scholarship Fund
Charles L. Dorothy Pfanstiehl in Public Health Speakers Series Fund
Community Scholarships Fund
Environmental Health Gift Fund
Field Internship Fund at International Health Department Gift Fund
Joop Lopez Fellowship Fund
Multiple Myeloma Research Fund
The Theodore Colton Fellowship Fund in Epidemiology

INCOME (IN MILLIONS)
2004
$45,689,926
$15,161,827
$4,821,228
$175,000
2009
$60,988,753
$31,636,960
$7,419,707
$369,241
2014
$74,984,294
$30,388,903
$36,271,972

DIRECT COST
2004
$71,162,845
$36,271,972

COMMUNITY SCHOLARSHIPS
2004
$198,240

MICHAEL D. SPENCER

INCOME BY THE NUMBERS: A TEN-YEAR PERSPECTIVE

2004
2009
2014

INCOME
$1,743,379
$2,099,398
$7,742,094

DEGREES
Full-time Faculty
187
194
197

Doctoral Students
638
1,025

Student Scholarship Program
$1,763,379
$2,099,396
$7,763,094

Total Income
$45,689,926
$60,988,753
$74,984,294

(continued)