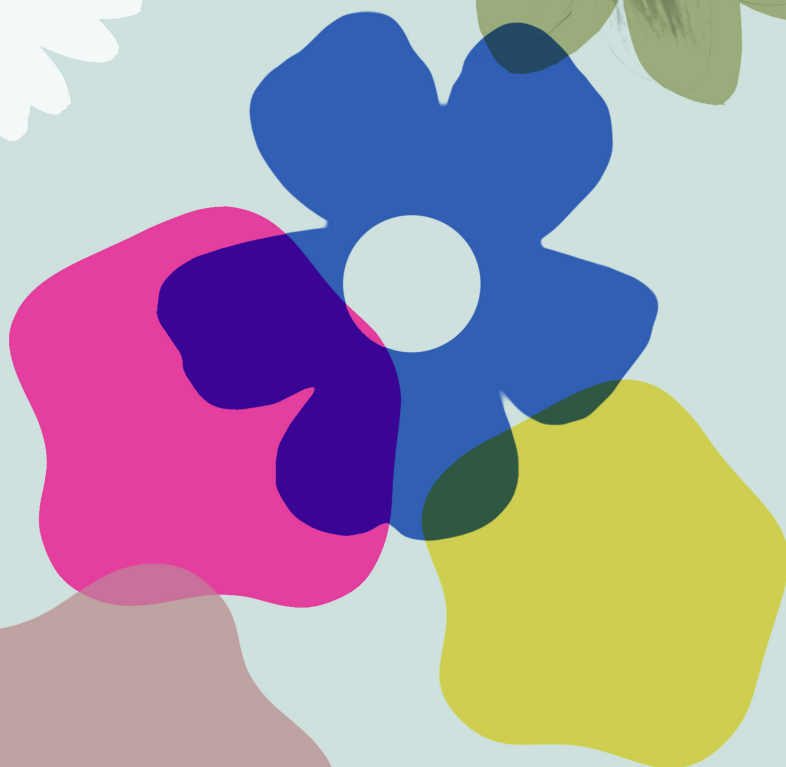


sph this year 2021.



Why we're
optimistic
about
the future
of public
health.

“Despite—perhaps because of—the moment we have lived through, our school community approaches 2022 with optimism.”

Dear *colleagues*,

THE WORLD, THE COUNTRY, AND THE SCHOOL have been through an unimaginably challenging two years. At this writing, more than 700,000 people domestically, and five million worldwide, have died of COVID-19. Many of us lost loved ones, and the year 2020 saw a downturn in US life expectancy unprecedented since WWII. Yet again, we saw—this time, through the pandemic—that poor health is not experienced equitably, with a disproportionately high burden of disease experienced by persons who are marginalized, by persons with limited socioeconomic means, and, often, by persons of color.

And despite—perhaps because of—the moment we have lived through, our school community approaches 2022 with optimism. Why? During a public health crisis, SPH students, faculty, staff, and alumni showed how our commitment to public health scholarship, education, and practice helped the world navigate the pandemic. From the COVID-19 scholarship of our faculty, to the students who worked with local, national, and global governments as part of the pandemic response, to our Public Health Conversations around issues of current consequence to health, members of our community met the moment, and—perhaps even more importantly—never stopped working to create a better, healthier world that is no longer vulnerable to pandemics.

As we look ahead, we are excited to continue this work. Guided by our five strategic research directions—cities and health; climate, the planet, and health; health inequities; infectious diseases; and mental and behavioral health—we are poised to ensure our school's strengths converge with the needs of the moment, and to be ever-better at pursuing our mission to *Think. Teach. Do.* in the wake of COVID-19.

Envisioning the future of public health after COVID-19, this issue of *SPH This Year* brings you a look at our community's role in shaping this future in the years to come. Thank you for joining us as we continue our mission—with optimism—towards better health for all.

Warmly,



Sandro Galea, MD, DrPH

Dean and Robert A. Knox Professor

Twitter: @sandrogalea



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SPH AT 45

Evolving a part-time program into a top-ten school.

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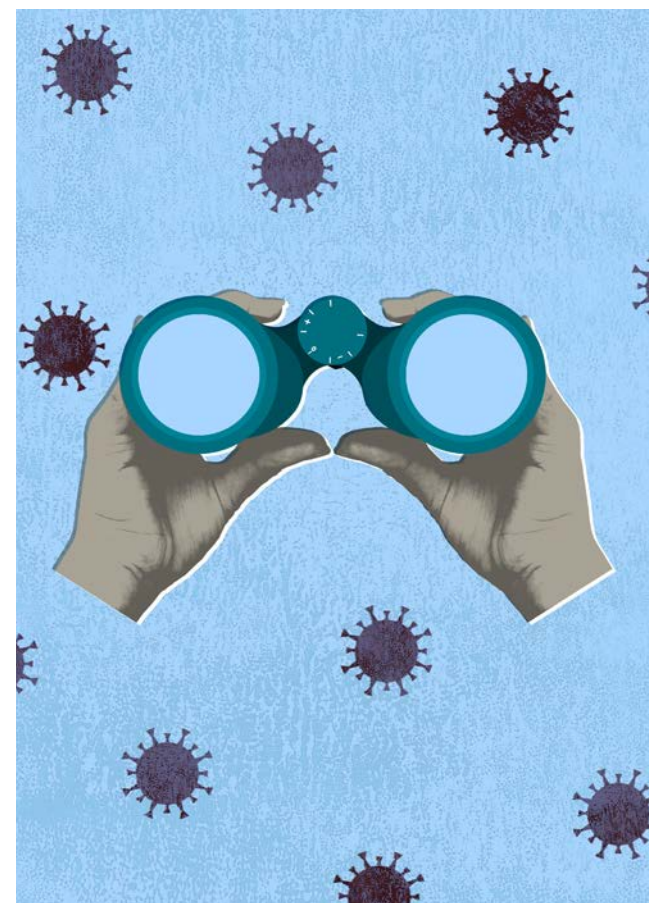
Making sure every voice is heard.



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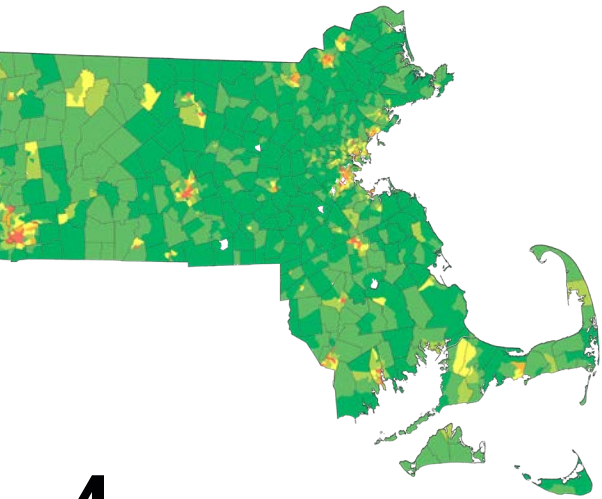
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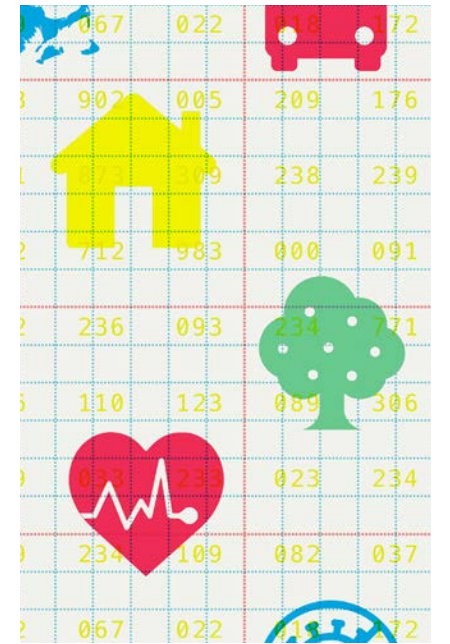
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CURING
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Making it
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SPH BY THE NUMBERS

4 SPH AT 5

FROM PART-TIME PROGRAM TO TOP-TEN SCHOOL OF PUBLIC HEALTH. AND STILL EVOLVING.

BY JILLIAN McKOY
ILLUSTRATIONS
BY JOE MAGEE



In September 1976

the inaugural class of a new, part-time Master of Public Health program at the School of Medicine (MED) on the Boston University Medical Campus was made up of 54 degree and 20 nondegree students.



←
SPH's iconic
Talbot Building,
located on the
Boston University
Medical Campus.

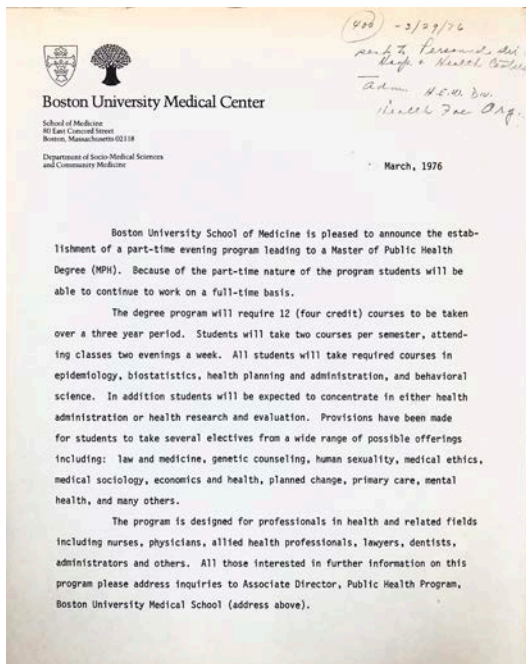
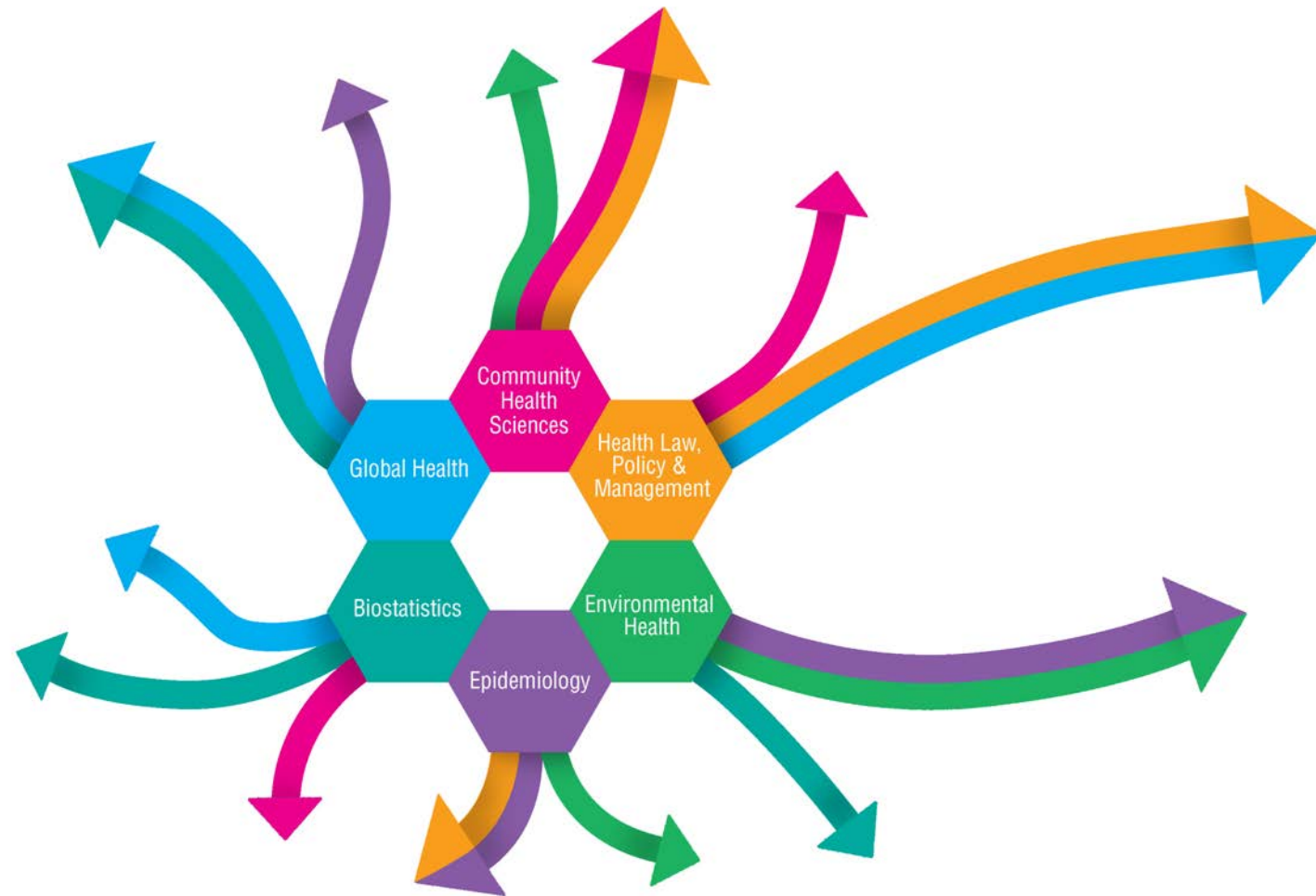
45

YEARS
TIMELINE

Designed by Douglas Decker and led by the first of only three deans in SPH history, Norman Scotch, the program offered concentrations in health delivery systems and health research and evaluation, all housed within MED's Department of Socio-Medical Sciences and Community Medicine.

In the decades following that fall semester 45 years ago, the MPH program grew exponentially in scope and influence, transforming into the top-ranked, independent institution at BU that is today's School of Public Health.

SPH's 45th anniversary arrives at the most critical time in public health in a century. The school's position as an academic institution exceeding the challenges of the moment is perhaps best understood by its history and evolution, shaped by an unwavering mission to improve the health and well-being of all populations—particularly those who are underserved and vulnerable—through research, education, and service.



Above: March 1976 letter announcing the start of the part-time evening MPH program to begin that September

1976

BU School of Medicine (MED) introduces part-time Master of Public Health program, directed by Dr. Norman Scotch and guided by MED Dean John Sandson.

In September, 54 degree students are admitted and 20 special students begin taking courses.

1977

MPH program admits 59 students concentrating in either Health Research & Evaluation or Health Delivery Systems.

Health Law faculty examine the legal and ethical limits of scientific research involving children.

1978

Boston University School of Public Health (SPH) established with five departments: Health Research & Evaluation, Public Health Law, Health Care Systems, Social & Behavioral Sciences, and Environmental Health.

SPH enrolls 156 students.

SPH awards degrees to 46 students at first graduation ceremony.



Above: SPH Director Norman Scotch attends Convocation

1979

Health systems faculty consult on a USAID-funded project to develop an innovative, community-oriented medical school at Suez Canal University in Egypt.

1980

Two new concentrations: Public Health Law and Health Regulation & Planning.

Health Research & Evaluation faculty examine issues in genetic counseling.

Health Regulation & Planning faculty propose inclusion of social science training in medical education curricula.



BU LIBRARY

BU LIBRARY



Above: 1982 Commencement

1981

First international student enrolls.

New concentration: Environmental Health.

In collaboration with the School of Social Work, the school offers its first joint degree program, the MSW/MPH.

The school admits both full- and part-time students.

1982

The Alumni Board is established.

SPH hires neighborhood young people through Action for Boston Community Development, starting an ongoing school tradition of employing community youth.

1983

First full accreditation from the Council on Education for Public Health.

Epidemiology Doctor of Science program established.

The Center for International Health admits 14 students to its first summer certificate course, Health Care in Developing Countries.

Health Law faculty testify before US Congress on the procurement and allocation of human organs for transplantation.



1984

Social and Behavioral Health faculty begin a five-year, randomized trial comparing different alcoholism treatments in the workplace.

The Data Coordinating Center opens, offering computing services and data analysis to SPH and other Medical Campus researchers.

New concentration: Health Promotion & Disease Prevention.



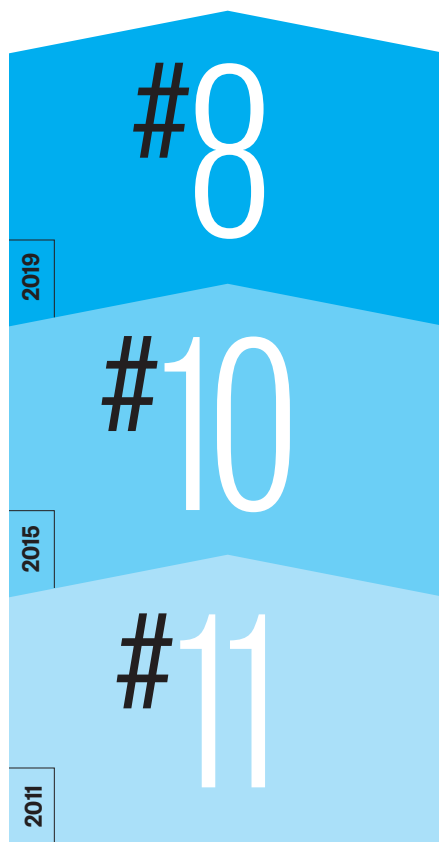
Left and above: SPH classroom instruction has always encouraged student participation

1985

The Office of Special Projects is established to educate and train students in international health and to conduct overseas and domestic research and service.

The Alumni Student Loan Fund awards SPH students \$120,000 in low-interest loans.

U.S. NEWS & WORLD REPORT
BEST GRADUATE SCHOOLS
OF PUBLIC HEALTH
RANKINGS BY YEAR



STUDENTS FIRST.

In its early years, the evening-only MPH program was geared toward midcareer, working public health professionals seeking formalized training. The program quickly became popular, and on June 26, 1979, the University trustees voted to establish SPH as its own entity with five departments. In 1981, the school began admitting both full- and part-time students to the MPH program.

“From the outset, one thing that really stood out about SPH was that there was a real interest in teaching,” says Leonard Glantz, professor emeritus of health law, bioethics & human rights. Glantz joined the faculty when the school was still a program within MED, served as associate dean for academic affairs for 30 years, and helped found the MPH/MSW and SPH’s former midwifery program before retiring in 2015. “Some academic institutions focus more on research as they grow, so to have an educational institution that was focused on teaching was a gigantic strength, and the program was beloved by students from the start.”

SPH saw a significant rise in both size and stature during the 22-year tenure (1992–2014) of its second dean, Robert Meenan, who oversaw advancements in education, research, and practice that propelled the school’s *U.S. News & World Report* ranking from 15 to 11, even as dozens of public health schools were still being established. During Meenan’s stewardship, the late William Bicknell created and chaired the (then) Department of International Health, the MPH program continued to expand, and the Public Health Practice office evolved into a model program for student activism and advocacy, particularly within communities but on a national level as well.

IT ALL COMES TOGETHER.

Meenan believes his most significant accomplishment was solidifying SPH’s physical and influential presence on campus.

“When I began, the School of Public Health was scattered across campus in five or six buildings,” he reflects. “A lot of my efforts were aimed at turning SPH into an independent school at the University and establishing the school’s home in the iconic Talbot building. Without that status, we never would have been able to make some of the advances that we did.”

Susan Foster, former chair and professor of international health who joined SPH in 1998, recalls the transformation of global health research and scholarship at SPH, which evolved over decades from a summer certificate program to one of the most active departments at the school: “For a while, we were the most diverse department at SPH, drawing students from all over the world.”

Students hailed from the former Soviet Union, Africa, and Latin America, among other regions. While primarily attracting working professionals, the department drew many international students from government and nongovernmental organizations who “always brought interesting perspectives and insight to the program,” Foster notes.

As interest in public health increased, SPH began to attract younger students who were entering the program directly from undergraduate studies, says Lisa Sullivan (GRS’86, ’92), associate dean for education and professor of biostatistics. Sullivan—who joined the biostatistics faculty in 1988, then led by prominent scholar and educator Theodore Colton—played an integral role in implementing the widely expanded interdisciplinary MPH program in 2016, as well as BU’s Learn from Anywhere hybrid teaching model during the pandemic.

“When I began, the School of Public Health was scattered across campus in five or six buildings. A lot of my efforts were aimed at turning SPH into an independent school at the University and establishing the school’s home in the iconic Talbot Building.”

ROBERT MEENAN, FORMER DEAN OF SPH (1992–2014)

Continued on page 15

1986

The school reaches an agreement with the Peace Corps to accept individuals for MPH study prior to Peace Corps field placement.

Social & Behavioral Sciences faculty begin study of the Massachusetts Seat Belt Law.

1987

Health Law faculty argue against parental surrogacy in the “Baby M” case.

The **Environmental Health** department establishes a state-of-the-art electron microscope facility.

The **Office of Special Projects** offers a certificate course in Child Survival.

Social and Behavioral Sciences faculty receive a grant to do a study of adolescent mothers who abuse drugs during pregnancy.



Above: In 1990, Boston Common marchers support AIDS research and funding

1989

Epidemiology and Biostatistics faculty work with lead prevention program to eradicate lead poisoning in Boston children.

Health Law offers a symposium on “The Nazi Doctors and the Nuremberg Code: Relevance for Modern Medical Ethics.”

The **MPH** program matriculates 325 students.

1990

HIV/AIDS and Substance Abuse Education Certificate program established.

Executive Nurse Management program begins.

Social and Behavioral Sciences faculty start five-year study to reduce maternal marijuana and cocaine use during pregnancy.

MOMS Project tackles substance use and HIV infection among high-risk pregnant women.

1991

Certified Nurse-Midwifery program responds to local and national infant mortality crisis.

Geriatric Training Certificate program created to culturally and appropriately integrate health and social services programs.

Robert Wood Johnson Foundation funds Join Together program to help community-based substance abuse groups develop awareness, treatment, and prevention strategies through advanced technology.

1992

Departments of Environmental Health, Epidemiology, and Biostatistics release Upper Cape Cancer Study results.

Medicaid Working Group formed to explore innovative, comprehensive services for people with severe disability and chronic illness through managed care.

Health Law faculty report on legal and ethical implications of the Human Genome Project.

Below: 1992 Commencement



Left: In 1977 David Ozonoff joined Boston University as the first chair of the Department of Environmental Health in the new School of Public Health, a position he held until 2003

1993

Two new concentrations: Public Health Law and Health Regulation & Planning.

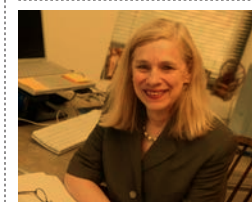
Health Research & Evaluation faculty examine issues in genetic counseling.

Health Regulation & Planning faculty propose inclusion of social science training in medical education curricula.

1994

Department of Environmental Health begins work with Dudley Street Neighborhood Initiative to clean up local hazardous waste sites.

Boston Environmental Hazards Center created with Boston Veterans Administration to research unexplained illness among Persian Gulf veterans.



Right: Roberta White, here in 2010, professor emerita of environmental health, chaired the Environmental Hazards Research Center in Boston

1995

The **Maternal and Child Health Leadership** program launches.

The new **Boston University Superfund Basic Research Center** pursues research problems connected with the Environmental Protection Agency’s Superfund Program.

University Trustees approve a department and concentration in International Health.

The **Office of Public Health Practice** opens to help students gain field experience.

University Trustees approve the Talbot Building renovation. For the first time in 20 years, all school departments will be located in one building.

1996

BUSPH is reaccredited by the Council on Education for Public Health.

University Trustees approve a department and concentration in Maternal and Child Health.

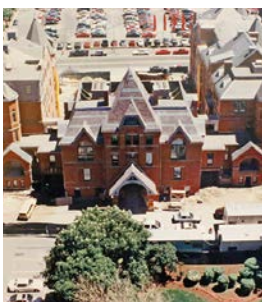
University Trustees formally recognize SPH directors as deans.

SPH awards 215 MPH and five doctorate degrees.

The **Health Law** department cosponsors “The Nuremberg Code and Human Rights: 50th Anniversary of the Doctors’ Trial” with the US Holocaust Memorial Museum.

Income from research grants and contracts reaches an all-time high of \$8.7 million.

Below: The Talbot Building in the last stages of its renovation into the home of the School of Public Health



1997

University Trustees approve the MS in Epidemiology.

Health Law faculty submit an amicus brief to the US Supreme Court on whether there is a constitutional right to physician-assisted suicide.

SPH departments move into the Talbot Building in November.

EXPANDING OUR SOCIAL CONSCIENCE.

"This year has shown how dedicated and supportive our faculty are, and I hope that we continue to build on our successes in education and to adapt to what is needed in the world," Sullivan says. "Students are appropriately demanding that we deal with important, difficult topics, and we are committed to doing that in a positive way."

Many of those topics revolve around diversity, equity, and inclusion. Yvette Cozier (SPH'94), assistant dean for diversity, equity, inclusion & justice (DEIJ) and associate professor of epidemiology, has led the school's strategic, 11-point DEIJ plan to create inclusive spaces and opportunities both inside and outside the classroom through open discussions about racism, discrimination, and unconscious biases. "Our goal is to ensure that these issues are addressed throughout the curriculum, particularly in the core MPH courses," Cozier says.

Commitment to equity and justice is central to the school's core purpose, which is also a pillar of Dean Galea's leadership: "Think. Teach. Do. For the health of all."

Since Galea became dean in January 2015, SPH has risen to rank eighth among dozens of public health schools in the nation. From mental health and health inequities, to gun violence, substance use, racial injustice, climate change, health policy, human rights, maternal and child health, LGBTQIA+ health, chronic illnesses, and infectious diseases—and, for the past two years, COVID-19—SPH faculty, staff, students, and alums are advancing the field and shaping the broader conversation around health through innovative discussion and research, evidence-based solutions, and bold action.

"This year has shown how dedicated and supportive our faculty are. Students are appropriately demanding that we deal with important, difficult topics, and we are committed to doing that in a positive way."

LISA SULLIVAN, ASSOCIATE DEAN FOR EDUCATION AND PROFESSOR OF BIOSTATISTICS

2000

The Trustees of Boston University approve the separation of epidemiology and biostatistics into two departments. Adrienne Cupples is named chair of biostatistics and Robert Horsburgh, chair of epidemiology.

2001

More than 500 alumni and friends attend an open house in the recently renovated Talbot Building celebrating 25 years of SPH functioning as a program within the BU School of Medicine.



Left: Yvette Cozier, associate professor of epidemiology and assistant dean for diversity, equity, inclusion & justice, received a D.Sc. in epidemiology from SPH in 2004 and joined the school's faculty later that year

2003

Expert in environmental toxicology Roberta White is named chair of the Department of Environmental Health.

2004

SPH Summer Institute for Training in Biostatistics begins with 24 undergraduates from across the US. Innovative, six-week program introduces principles of biostatistics, epidemiology, and statistical genetics.



Below: Ivy covered the walls of the Talbot Building until an extensive exterior restoration in the mid-2000s

2005

With \$10 million National Institute on Alcohol Abuse and Alcoholism (NIAAA) NIH grant, Youth Alcohol Prevention Center introduces programming sessions. SPH's first NIH award and the first from NIAAA to a school of public health.

2006

New track in pharmaceutical health policy explores the political and financial contexts in which drugs are developed.



Below: Leonard Glantz, professor emeritus of health law, in 2015

2007

Request to change Department of Health Services to Department of Health Policy & Management approved.

2008

After 30 years as associate dean of academic affairs, Leonard Glantz returns to full-time teaching and oversees SPH self-study process for reaccreditation by the Council on Education for Public Health.

2009

Center for Global Health & Development receives \$8.4 million grant from the Gates Foundation for large-scale trial in Zambia to prove that using antiseptic wash to clean babies' umbilical cords reduces neonatal mortality.

2010

BU community participates in first Global Day of Service in April. SPH-sponsored volunteer sites include Habitat for Humanity, Health Care for the Homeless, Franklin Park Zoo, Greater Boston Food Bank, and Pine Street Inn.



Right: The Alumni Office and Community Service Center sponsor a Global Day of Service at sites around Boston in April 2010



Above: Leaves are hauled away from Franklin Park during Global Day of Service in 2011

2011

SPH advances to number 11 in the U.S. News & World Report ranking of schools of public health released in March 2011.



Above: Latoya Comer (SPH'11) stands proud at BU's 2011 Commencement ceremony

2012

SPH enrolls 456 new students, 373 in the MPH class, the largest and best qualified in school history and most international class to date.

Right: Robert Meenan led SPH to national prominence and rising national rankings during his 22-year tenure as dean

2013

SPH graduates 388 students, awarding 359 MPH degrees, 57 of which are dual degrees with other BU schools; 12 MS; 9 PhD; and 8 DrPH. Eight students receive an MA in Biostatistics and nine, a PhD in Biostatistics through a joint program with the Graduate School of Arts & Sciences.

2014

Robert Meenan steps down as dean of SPH after 22 years. He is the longest-serving dean at BU as well as the longest-serving dean of a school of public health nationwide.



Above: Sandro Galea, dean and Robert A. Knox professor, speaks at the 2017 SPH Dean's Symposium on Building Healthy Cities

2015

Sandro Galea, physician, epidemiologist, scholar, author, and internationally recognized public health leader, is named dean of Boston University School of Public Health effective January 1. He previously held academic and leadership positions at Columbia University, the University of Michigan, and the New York Academy of Medicine.

2015 continued

In 2016, Galea is awarded the Robert A. Knox Professorship, designated to support a Boston University faculty member who demonstrates excellence in scholarship, research, teaching, and impact on society.

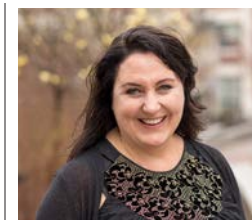
For the first time, SPH comes in at #10 among all schools of public health in the U.S. News & World Report rankings, which assess the quality of schools accredited by the Council on Education for Public Health.



Above: SPH Associate Professor of Global Health Christopher Gill in the classroom

2016

Christopher Gill, an associate professor of global health at SPH and a research scientist at the Center for Global Health & Development, receives the University's highest teaching accolade, the Metcalf Cup and Prize, at the University's 143rd Commencement in May.



Above: Sophie Godley, assistant professor of community health sciences and 2017 recipient of the prestigious Metcalf Award for Excellence in Teaching

Right: Lisa Sullivan, associate dean for education, professor of biostatistics, and Metcalf Award winner, featured here in 2019

2017

Sophie Godley, a clinical assistant professor of community health sciences, receives the prestigious Metcalf Award for Excellence in Teaching, joining past SPH winners Lisa Sullivan (2001) and Wayne LaMorte (2011). James Wolff receives the award in 2018, capping an unprecedented three-year span of recognition for the high quality of SPH teaching.



2019

SPH sees another strong year of enrollment, with 1,000 current students and another 2,283 applying in the spring.

2020

Due to the pandemic, SPH adopts virtual instruction to close the spring semester, with a mix of virtual and in-person classes resuming in the fall.



Above: Enthusiastic graduates at BU's 2021 Commencement ceremony at Nickerson Field

2021

With an increase in virtual attendance at school events, the number of people engaged in Public Health Conversations—in person and online—rises to more than 140,000 over six years.

THINK. TEACH. DO.
FOR THE HEALTH OF ALL.

seeding

the grass roots

NOW IS THE TIME

COMMUNITY HEALTH SCIENCES

Where and how we live greatly affect our health.
It is imperative that public health challenges are
addressed at the grassroots level.

PUBLIC HEALTH PRACTITIONERS

tackle racism, the opioid crisis, maternal mortality, and health inequities every day. But where—and how—we live also profoundly impacts health. Community health science research seeks comprehensive solutions to address these issues by creating public policy and implementing community-level interventions.

The Department of Community Health Sciences (CHS) at the School of Public Health produces world-class scholarship and provides an outstanding educational experience for future public health leaders with a focus on health equity, advancing effective health policies, and strengthening community-based health practices.

“Our department is characterized by diversity of interests, methods, and topics of scholarly and community-based work,” says Richard Saitz, chair and professor of community health sciences. “Rather than focus on one science or one health topic, we use a range of methods and have deep expertise in numerous, specific health topics.”

Created in 2009, the CHS department merged former SPH departments Maternal and Child Health and Social and Behavioral Sciences.

Saitz is particularly proud of the way CHS faculty and staff consistently perform above and beyond expectations. “Our community often gels around social justice issues related to women’s health, racism, sexual minorities, and policies and communications related to health behaviors,” he says. “Grassroots efforts for students and local communities often arise and quickly take hold.”

*“Our department is
characterized by diversity
of interests, methods, and
topics of scholarly and
community-based work.”*

RICHARD SAITZ,
CHAIR AND PROFESSOR OF
COMMUNITY HEALTH SCIENCES

Faculty areas of scholarly expertise include improving the health and well-being of individuals, families, and communities; applying scientific theories and evidence to develop interventions and policies tailored to diverse communities; and broadening student understanding of the factors that shape community health.

Department investigators are currently studying topics including HIV pre-exposure prophylaxis (PrEP) implementation among people who inject drugs and among youth; dating and sexual violence; medication effectiveness for alcohol use disorder; and culture and health outcomes surrounding gun ownership.

The BU Clinical Translational Science Institute (BU CTSI), a \$38 million effort led in part by CHS faculty, supports efforts such as translating, disseminating, and implementing research and research findings in communities.

“We are well poised to help fund translational research in COVID-19, because we already have an infrastructure that expedites the ability of BU’s investigators to get moving on studies and identify patients to enroll in new clinical trials. We’ve made an enormous difference getting patients into [COVID-19-related] clinical trials,” Saitz explains.

CHS faculty lead four Master of Public Health (MPH) certificates (Community Assessment, Program Design, Implementation, and Evaluation; Health Communication and Promotion; Maternal and Child Health; Mental Health and Substance Use), as well as dual-degree, doctoral, and undergraduate public health training programs.

Saitz believes comprehensive solutions to address things like obesity, poverty, and the unequal burden of the COVID-19 pandemic are needed now more than ever.

“We aspire to expand to lead major, community-based, externally supported public health and research programs that incorporate and directly address health inequities and populations that have been marginalized,” he says.

RESEARCH

Maternal and Child Health Center of Excellence Renews Fight Against Maternal Mortality, Postpartum Chronic Conditions, and Racial Disparities

“The fragmentation and racism in healthcare has been neglected for far too long—but it is fixable. We need an all-hands-on-deck strategy to allow all mothers to thrive. Now is the time.”

LOIS MCCLOSKEY, ASSOCIATE PROFESSOR OF COMMUNITY HEALTH SCIENCES AND DIRECTOR OF THE MATERNAL AND CHILD HEALTH CENTER OF EXCELLENCE

As Congress considers legislation to tackle huge racial disparities in maternal health with the 2021 Black Maternal Health Momnibus Act, a broad coalition of clinicians, researchers, and advocates has published an agenda to close the gaps that contribute to preventable maternal death and chronic illness later in life among all women, but particularly Black, Indigenous, and other women of color.

Led by Boston University Schools of Public Health and Medicine and a leadership council including the Black Women’s Health Imperative, the Primary Care Collaborative, and DiabetesSisters, the Bridge the Chasm Collaborative describes its agenda in two articles published in the journal *Women’s Health Issues*: “Bridging the Chasm between Pregnancy and Health over the Life Course: A National Agenda for Research and Action,” and an accompanying commentary, “It’s Time to Eliminate Racism and Fragmentation in Women’s Health Care.”

“It’s the sad truth that once pregnancy is over, birthing people too often fall into a healthcare chasm after the postpartum period is over,” says Lois McCloskey, associate professor of community health sciences and director of the Maternal and Child Health Center of Excellence (MCH CoE).



iSTOCK.COM/DIGITALSKILLET

“That chasm is especially deep, wide, and hazardous for women of color, and a major factor in preventable maternal deaths and chronic illness over lifetimes,” she says. “The fragmentation and racism in healthcare has been neglected for far too long—but it is fixable. We need an all-hands-on-deck strategy to allow all mothers to thrive. Now is the time.”

The agenda is the product of two years of collective work, launched at an innovative national conference hosted at Boston University in 2018, co-organized by McCloskey and Judith Bernstein, emerita professor of community health sciences.

The conference brought together women with lived experiences of complicated pregnancies, clinicians, researchers, health system innovators, policymakers, and private sector advocates to identify the gaps in care after pregnancy and other systemic

issues, and to outline an agenda for transformation. A group of dedicated stakeholders—the Bridge the Chasm Collaborative—co-created the resulting agenda.

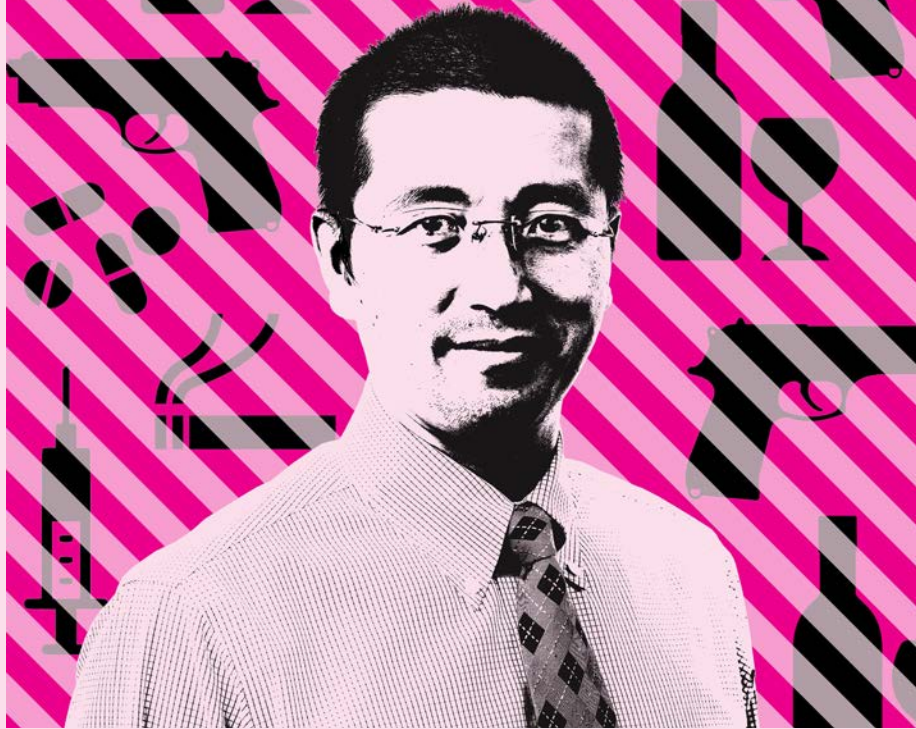
“It’s the sad truth that once pregnancy is over, birthing people too often fall into a healthcare chasm after the postpartum period is over.”

LOIS MCCLOSKEY, ASSOCIATE PROFESSOR OF COMMUNITY HEALTH SCIENCES AND DIRECTOR OF THE MATERNAL AND CHILD HEALTH CENTER OF EXCELLENCE

In 2020, the School of Public Health’s Maternal and Child Health Center of Excellence, one of only 13 such centers nationwide, received its sixth round of funding through 2025

from the Maternal and Child Health Bureau of the Health Resources & Services Research Administration. The MCH CoE also received an MCH Epidemiology Doctoral Training Award, which will support the dissertation work of SPH doctoral students studying maternal and child health and epidemiology.

Founded in 1995, the MCH CoE provides educational, practice, research, and leadership programs that prepare students to become leaders in the MCH field, with an emphasis on advancing and promoting health equity as well as racial, social, and economic justice for women, children, and families. The renewed funding will enable the center to continue a myriad of programs and expand its training initiatives to students, faculty, and staff across SPH and Boston University, and grow its partnerships with local and state agencies and community-based organizations.



XUAN

Associate professor of community health sciences

20

55% As of June 11, 2021, the CDC estimated 10,692 of 19,423 gun violence deaths were the result of suicide.



Source: gunviolencearchive.org

ZIMING

Gun violence and alcohol abuse are reduced when access is restricted.

EVERY DAY, the significant public health burdens of gun violence and alcohol misuse in the United States motivate Ziming Xuan, a social epidemiologist and associate professor of community health sciences at the School of Public Health.

Since joining SPH in 2010, Xuan has led local, national, and international studies to examine interventions and methodologies that reduce harms associated with these issues. Also a faculty member at the Boston Medical Center Injury Prevention Center and director of the Health Communication and Promotion certificate, Xuan analyzes the impact of health policies on substance use and related injuries among vulnerable populations.

“When there is easy access to fatal means, the risk of fatality escalates and the danger exacerbates—especially when someone is under the influence and becomes impulsive,” Xuan says.

He collaborated with researchers over the past decade to create and validate the Alcohol Policy Scale (APS), a novel measure that assesses

and compares the alcohol policy environment of each US state. In National Institutes of Health–funded studies, Xuan found that more restrictive alcohol policy environments were strongly inversely related to binge drinking, driving under the influence, and alcohol-related suicide and homicide.

He found that “policies that are effective in reducing alcohol availability—such as alcohol taxes and reducing outlet density—are associated with reduced suicide mortality.”

“**We have to ask ourselves what we can do collectively to not let guns take away the lives of many loved ones that we care about.**”

ZIMING XUAN, ASSOCIATE PROFESSOR OF COMMUNITY HEALTH SCIENCES

Similarly, he points out that firearm policies that are effective in reducing access to firearms can reduce firearm-related fatal injury.

“We have to ask ourselves what we can do collectively to not let guns take away the lives of many loved ones that we care about, and the freedom that we cherish,” Xuan says.

MONICA WANG

Shifting the narrative on racism and racial injustice increases understanding.

NARRATIVES ARE ONE of the most powerful ways to translate research, says Monica Wang, associate professor of community health sciences. Embracing narratives is a central part of her role as associate director of narrative at Boston University’s Center for Antiracist Research.

Launched in July 2020 by antiracism scholar Ibram X. Kendi, director, Andrew W. Mellon Professor in the Humanities, and professor of history at BU, the center convenes multidisciplinary researchers and practitioners to understand, explain, and solve problems of racial inequities and injustice through four pillars of change-making work: research, policy, narratives, and advocacy.

In her position, Wang works directly with Kendi and center leadership to shift the narrative around racism and racial injustice and translate evidence-based recommendations in a way that policymakers and the general public can understand and support.

“What excites me most about this role is the capacity to generate impact on a much larger scale than I have ever

anticipated,” says Wang. “Doing this work answers one of the highest callings of my public health career and my social justice heart.”

Within the narrative pillar, the team is working on a number of initiatives that amplify research, education, and public engagement around antiracism. Wang was part of the founding team of *The Emancipator*, an independent anti-racist multimedia platform inspired by 19th-century antislavery publications. The site launched earlier this year in a partnership between the center and *Globe Opinion*, the *Boston Globe* editorial team.

“The goal for this multimedia platform is to catalyze interdisciplinary dialogue and understanding of what is driving racial inequities, as well as communicate and cultivate innovative solutions to address them,” says Wang. “We are writing today to create a more equitable society tomorrow.”

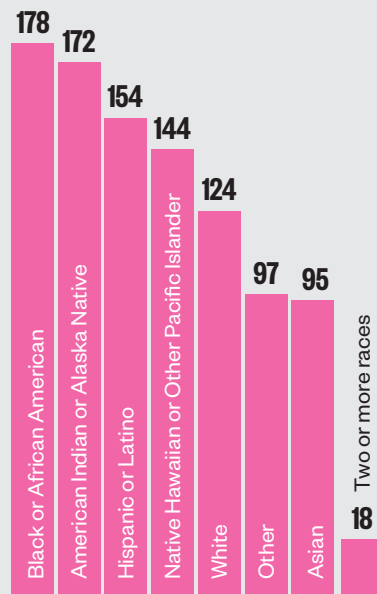
“**We are writing today to create a more equitable society tomorrow.**”

MONICA WANG, ASSOCIATE PROFESSOR OF COMMUNITY HEALTH SCIENCES AND ASSOCIATE DIRECTOR OF NARRATIVE AT THE CENTER FOR ANTIRACIST RESEARCH

Associate professor of community health sciences and associate director of narrative at the Center for Antiracist Research



DEATHS PER 100,000 PEOPLE BY RACE OR ETHNICITY THROUGH MARCH 7, 2021



These calculations are based on data from The COVID Racial Data Tracker and the U.S. Census Bureau. Race categories may overlap with Hispanic/Latinx ethnicity. Rates are not age-adjusted and some rates are underestimated due to lack of reporting of race and ethnicity categories for COVID-19 deaths.

ALL ILLUSTRATIONS BY JOE MAGEE; ISTOCK.COM/BUBAONE

21



NASHIRA BARIL

(SPH'06), project director for the Neighborhood Birth Center

■ Building Boston's first freestanding center for equitable birthing.

BOSTON IS THE BIRTHPLACE of the community health center movement, but markedly absent from the city's healthcare infrastructure is a community birth center, says School of Public Health alum Nashira Baril (SPH'06). That will soon change.

With a goal to make birthing options equitable, personalized, and family-centered, Baril is leading the development of the Neighborhood Birth Center—the first independent, freestanding birth center in the Greater Boston area. While the location and opening date are still being determined, it could launch as early as 2023.

Boston's first birth center is imagined as a 5,000-square-foot, spa-like facility offering physical, mental, and emotional support for patients and their families, including doula care, psychotherapy, support groups, childbirth and parenting classes, and wellness activities.

"The midwifery model of care focuses on wellness, with the idea that birthing people and babies are innately designed for this, and that with the right

kind of support, we can have good birth experiences and outcomes," Baril says.

She says it's important to recognize the role of deep-rooted racism in midwifery practice dating back to colonization and slavery. "Black midwives, who birthed most babies and across racial lines, were systematically and institutionally removed from the practice as white men became trained as OB-GYNs. It's important to name that history."

“With the right kind of support, we can have good birth experiences and outcomes.”

NASHIRA BARIL (SPH'06), PROJECT DIRECTOR FOR THE NEIGHBORHOOD BIRTH CENTER

Today, almost all births take place in hospitals, and the maternal death rate for Black mothers is three to four times higher than other groups.

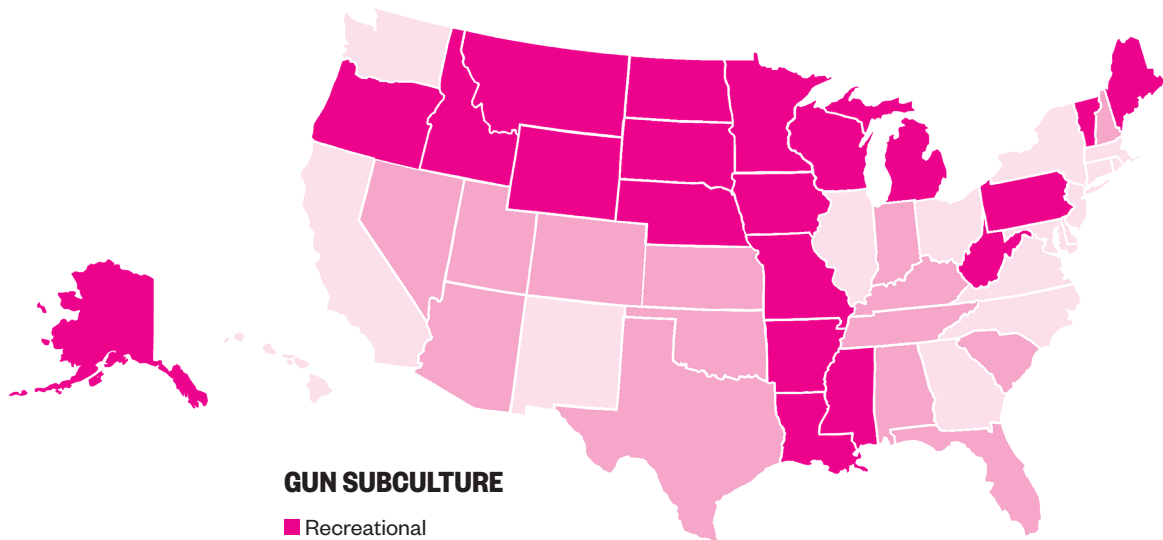
"How babies come into this world matters for all of us," Baril says. "It matters for our public health, for our economy, and for our collective healthcare. The birth center model just makes sense."

RESEARCH

Gun Culture 3.0



IPGGUTENBERG/UKITD



GUN SUBCULTURE

■ Recreational
■ Self-defense
■ Second Amendment activism

Source: Michael Siegel and Claire Boine, *American Journal of Preventive Medicine and Nature: Humanities & Social Sciences Communications*.

The majority of gun owners support many gun violence prevention policies in private, but do not make their support public because they are alienated by the rhetoric of gun violence prevention. Meanwhile, an “insurrectionist” gun culture that views defending the Second Amendment as central to all freedom in this country is on the rise, particularly in states that have most strengthened their gun laws.

That’s according to two recent studies by Michael Siegel, professor of community health sciences, and research fellow Claire Boine, published in *American Journal of Preventive Medicine and Nature: Humanities & Social Sciences Communications* and based on responses from 2,086 gun owners in the 2019 National Lawful Use of Guns Survey.

“No longer can we speak about gun culture as if it is a single entity,” Siegel says, instead describing three gun cultures: recreation, self-defense, and the “Gun Culture 3.0” typified by the National Rifle Association (NRA).

“Those of us in public health must acknowledge the positive aspects and

stop blaming law-abiding gun owners for the problem of firearm violence,” he says. “Instead, we need to address one very specific aspect of gun culture that the NRA has created that does not represent the overwhelming number of gun owners in this country.”

In fact, Siegel and Boine found that 92 percent of gun owners do not believe they are typical gun owners.

“No longer can we speak about gun culture as if it is a single entity.”

MICHAEL SIEGEL, PROFESSOR OF COMMUNITY HEALTH SCIENCES

“The NRA pulled one of the biggest illusions in history by making 8 percent of gun owners feel like they are the majority, and the other 92 percent feel like the minority,” Boine says.

Research by Siegel and Boine has found that laws restricting gun ownership based on an individual’s violent history are more effective in preventing violence than broad bans on types of firearms. The survey finds most gun owners support the former, but see the latter as restricting all gun owners regardless of how responsible and law-abiding they may be.

“If law-abiding gun owners feel disrespected, why should they believe that we are not aiming to take their guns away?” Siegel says. “That is respect that needs to be earned.”

The power of

policy

NOW IS THE TIME

HEALTH LAW, POLICY & MANAGEMENT

Research, education, and advocacy can help drive policy decisions that create more equitable health outcomes for all.

HEALTH POLICIES HUGELY AFFECT

our lives. Changes related to Medicaid eligibility, unemployment assistance during the pandemic, and Affordable Care Act coverage will impact our health for years to come. In order to ensure new policies are equitable, research is needed to gain a better understanding of how to dismantle the structural forces of inequity.

The Department of Health Law, Policy & Management (HLPM) at the School of Public Health brings together experts across disciplines to inform the development and refinement of healthcare policies and programs. HLPM faculty train future public health leaders in the foundational knowledge, methods, policy analysis, and research necessary to generate evidence-based policies that improve the health and well-being of vulnerable populations.

“HLPM has a vibrant, creative, hardworking, and collaborative sense of community where faculty, staff, and students genuinely care about one another’s work and personal well-being,

while producing ambitious studies and offering important policy advice,” says Michael D. Stein, chair and professor of health law, policy & management.

Stein points out that the department’s uniquely interdisciplinary focus on social policy, healthcare financing, safety-net delivery systems, and marginalized populations distinguishes it from peer institutions.

“HLPM has a vibrant, creative, hardworking, and collaborative sense of community where faculty, staff, and students genuinely care about one another’s work and personal well-being.”

MICHAEL D. STEIN, CHAIR
AND PROFESSOR OF HEALTH LAW,
POLICY & MANAGEMENT

HLPM faculty teach courses for the Health Policy and Law, Healthcare Management, and Human Rights and Social Justice certificates in the Master of Public Health (MPH) degree program, as well as the Master of Science (MS) in Population Health Research: Translation and Implementation Science, PhD in Health Services Research, and Doctor of Public Health (DrPH).

The department’s shared mission of generating and disseminating evidence-based information can inform practice and policy and improve health and health equity.

“I’m proud of our ability to combine impressive scholarly output and top-notch teaching with extensive hands-on engagement, cutting-edge policy questions, and the key operational challenges facing safety net delivery systems,” Stein says.

HLPM has accomplished several major goals at SPH, including establishing the first Health Law, Bioethics and Human Rights focus at a school of public health; developing a CAHME-accredited healthcare management program, initiating a Medicaid Policy laboratory, and growing a health services and policy doctoral program. The department has also maintained a fruitful partnership with the US Department of Veterans Affairs for more than 20 years.

Key research projects include the Partnered Evidence-based Policy Resource Center for the Veterans Hospital Administration, as well as the Healthy Minds Study, the largest, most comprehensive study of mental health, health behaviors, and health service use on US college campuses. Department faculty are also among the lead investigators of the historic, \$89-million, four-state Healing Communities Study, which is bending the curve on opioid overdose deaths in Massachusetts and beyond.

Stein says the department plans to continue developing its educational programs to offer students the most substantial experience possible. “We will continue to steer two large MPH certificates, steadily improve the connections across our courses, and integrate our master’s and doctoral programs around themes of equity and efficiency in health policy and management.”

RESEARCH

BU Medicaid Policy Lab Advances Research with a Health Equity Focus



↑ The Trump administration tried to limit Medicaid eligibility, a policy that (from left) Sarah Gordon, Paul Shafer, and Megan Cole Brahim expect President Biden to reverse.

“Medicaid is designed differently in each state and territory, creating wide variability in healthcare quality, access, costs, and eligibility—and therefore, health outcomes.”

MEGAN COLE BRAHIM, ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

Medicaid is a critical lifeline for millions of Americans, but the partisan divide on policies around expansion and eligibility has exacerbated long-standing inequities in health insurance coverage and access that disproportionately impact people of color.

Amid this critical point in US health-care, SPH researchers have launched an initiative that brings together legal, political, economic, and policy expertise on Medicaid.

Megan Cole Brahim, Paul Shafer, and Sarah Gordon, all HLPMP assistant professors, founded and codirect the BU Medicaid Policy Lab, which serves as a resource hub for researchers, policymakers, and anyone interested in developing or utilizing interdisciplinary research on a wide range of Medicaid policy issues. With an overarching goal to advance health equity, the lab evaluates the impacts of policy changes and care delivery models on health insurance coverage, access to care, quality of care, and health outcomes in Medicaid and other low-income populations.

“Medicaid is designed differently in each state and territory, creating wide variability in healthcare quality, access, costs, and eligibility—and therefore, health outcomes,” says Cole Brahim.

Funded by grants from public and private organizations such as the National Institutes of Health, Health Resources and Services Administration, and the Robert Wood Johnson Foundation, the lab is housed at SPH, but the directors aim to engage faculty members and other researchers across the University who may already be studying cross-cutting issues that affect Medicaid populations.

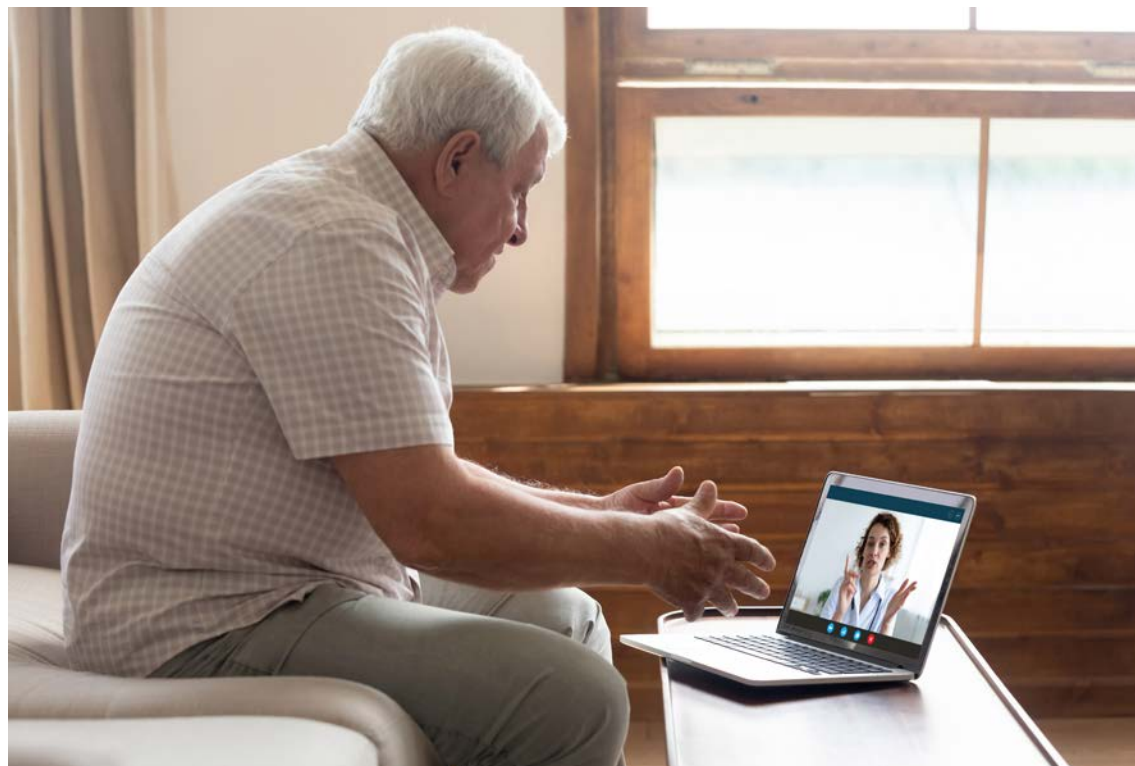
Several projects at the lab are underway or already completed, and the data are urgently needed as certain states pursue legislation on work requirements or narrowing eligibility, while other states actively weigh options of expanding eligibility or services, such as expanding postpartum Medicaid coverage through 12 months postpartum or permanently reimbursing for telehealth services.

CYDNEY SCOTT

RESEARCH

Professor Awarded \$720K to Evaluate an Equity-Focused Telehealth Model

ISTOCK.COM/FEZKES



Megan Cole Brahim, assistant professor of health law, policy & management, has received awards from the Donaghue Foundation and the Robert Wood Johnson Foundation totaling \$719,573 to evaluate an equity-focused telehealth delivery model for Medicaid-enrolled patients with chronic conditions. Cole leads the project with June-Ho Kim, a faculty member with the Primary Health Care program at Ariadne Labs.

“Our goal is to generate an evidence base for providers and policymakers in Massachusetts and across the US as they make decisions about what telehealth might look like post-COVID, and how it can be used to improve quality, equity, and value of care for the most vulnerable,” Cole says.

As of 2019, less than a quarter of the country’s federally qualified health centers (FQHC)—health centers that

receive federal grant funding—were using any type of telehealth to provide real-time virtual care directly to patients. By June of 2020, 98 percent were using telehealth in some capacity.

“Post-COVID, telehealth can be used to improve access to primary and specialty care for patients who previ-

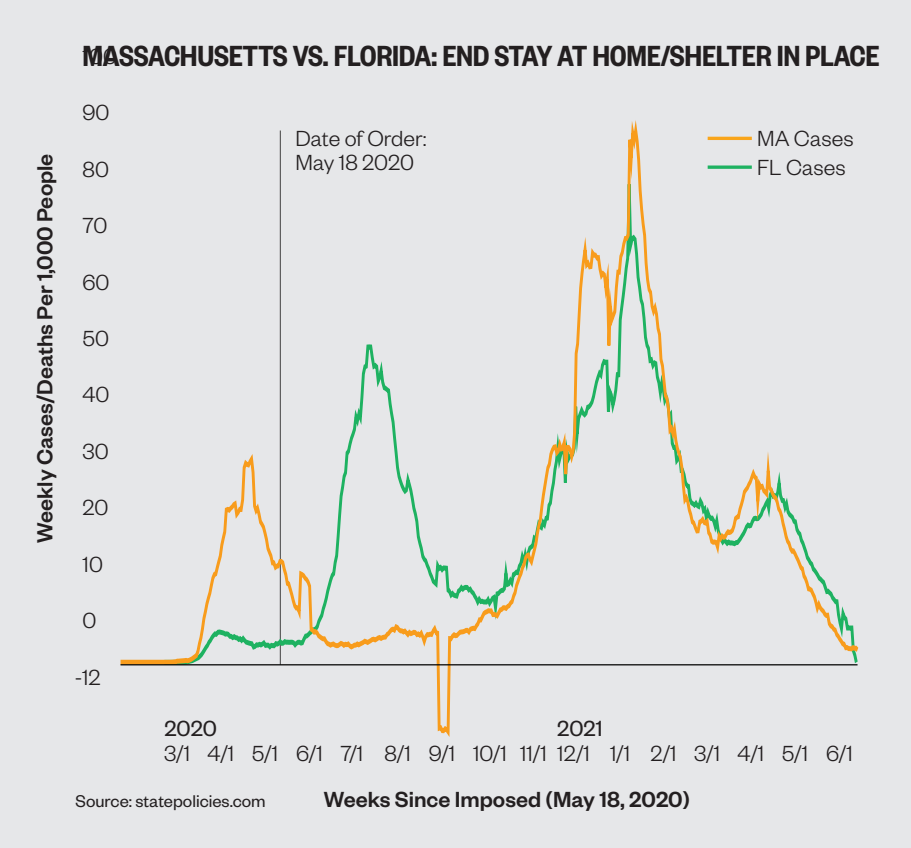
“Post-COVID, telehealth can be used to improve access to primary and specialty care for patients who previously faced barriers making it to in-person visits.”

MEGAN COLE BRAHIM, ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

ously faced barriers making it to in-person visits,” Cole says. “Patients may no longer need to take a day off from work or take three buses across town to make it to an appointment. At the same time, patients with inadequate access to technology or the internet, or who require interpretation services, may not experience these same benefits—that is, unless the telehealth delivery model tries to bridge these gaps.”

“This collaboration with Starbucks is a valuable learning experience for our students to see how complex health policy can be in the middle of a public health emergency.”

PAUL SHAFER, ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT AND PRINCIPAL INVESTIGATOR OF THE COVID COMMUNITY INFORMATION EXCHANGE



COVID TAKING CARE OF BUSINESS

THROUGH IDEA HUB, STUDENTS WORKED WITH STARBUCKS TO DOCUMENT HEALTH AND SAFETY PROTOCOLS FOR THE PANDEMIC.

STARBUCKS/CONNOR SURDI



WHEN COVID-19 CASES in the United States began to surge in the fall and winter of 2020, states and cities started imposing a flurry of executive orders to mitigate the spread of the virus.

From indoor dining restrictions to mask mandates, many of these state and local policies began changing on a daily basis, posing operational challenges for retail businesses as they adjusted to keep their employees and customers safe.

During the semester, 14 Boston University students embarked on a bold initiative with the Starbucks Coffee Company to track COVID-19 policies affecting retail businesses and restaurants in the US and Canada, organizing this information into a database for Starbucks employees (called partners) to reference as they facilitate store re-openings and implement safety protocols unique to each of their cafes in North America.

The collaboration was a novel partnership between the global coffee giant and the School of Public Health, and one of the first relationships spearheaded by SPH’s idea hub that aims to bridge the gap between public health and private industry.

Students from SPH, the School of Hospitality Administration (SHA), and the School of Social Work (SSW) worked closely with Paul Shafer, assistant professor of health law, policy & management, and Starbucks corporate partners to populate the COVID Community Information Exchange (CCIE), a database that the company created to code state and local regulations and public health guidelines that have impacted retail businesses.

“This collaboration with Starbucks is an extremely valuable learning experience for our students to see firsthand how complex health policy can be in the middle of a public health emergency,”

says Shafer, principal investigator of the CCIE. “There is a lot of nuance and detail that goes into not only finding these policies but distilling their complex language down to what a cafe manager can actually understand and respond to.”

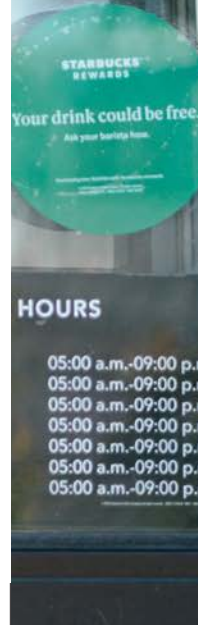
“Our foundational guiding principle at Starbucks is to prioritize the health and safety of our partners and our customers,” says Becky Elias, director of global retail quality assurance for Starbucks. “Extreme differences across our jurisdictional mandates made us quickly realize we needed to create our own protocols grounded in what the science tells us for the health and safety of our partners.”

Omobolanle Adams (SPH’21) was eager to merge her quantitative data skills with policy work as she researched regulations and guidelines in southern states.

“Although all of my states were in the south, it was interesting to see how each state’s executive orders, guidelines, and re-opening phases still differed from each other,” she says.

Mekedelawite (Maya) Atakilti, a dual-degree student in the MPH/MSW program, appreciated the opportunity to lay the foundation for policies that promote safe working conditions for essential workers, during and after the pandemic. “I thought about how these restaurant owners are implementing this data, and how states can do a better job of making their guidelines more readily available to people and easier to follow.”

Vanessa Edouard, managing director of idea hub, says this project drew on “faculty expertise to meet an important business need, while also providing an excellent learning opportunity for our students—all toward the goal of improving population health.”



AUSTIN

Health equity, racial justice, and the social determinants of health.

AS THE EDITOR IN CHIEF of *Health Services Research (HSR)*, Austin Frakt is making space for in-depth scholarship on health equity and racial justice. The research professor of health law, policy & management at the School of Public Health also directs the Partnered Evidence-based Policy Resource Center at the VA Boston Healthcare System, where he oversees research to improve veteran care.

Frakt took the helm of *HSR* last January, and he says the official journal of AcademyHealth is “at the intersection of policy relevance and methodological rigor.”

One of his primary goals is to increase diversity across the *HSR* editorial team in racial and ethnic representation—as well as in methodological, disciplinary, and geographic areas—and place a greater focus on health equity, racial justice, and the social determinants of health.

“*Health Services Research* is open to research that thinks more deeply about

where disparities come from,” Frakt says. This goal will “require us to be open and honest about systemic racism as an ultimate source.”

Those disparities have been laid bare by the pandemic. As a father of two teenagers, he also worries about long-lasting effects on the education and well-being of what he calls “the COVID generation”—those roughly between the ages of 5 and 20.

“*Health Services Research* is open to research that thinks more deeply about where disparities come from.”

AUSTIN FRAKT, RESEARCH PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

Young people are among those who are struggling, he says, and they will continue to do so. “Between the pandemic and the awakening to social justice, this has been a defining moment that will shape their lives forever.”



FRAKT

Research professor of health law, policy & management

RACHEL MITROVICH

Vaccines should be considered an essential healthcare service.

AS DIRECTOR of Global Vaccines Public Policy at Merck, Rachel Mitrovich (SPH’19) is dedicated to reversing the alarming rise of vaccine-preventable illnesses and deaths, particularly among individuals in low-resource settings.

Prior to COVID-19, Mitrovich oversaw cross-cutting vaccine policy research and analysis at Merck, but when the pandemic began to hinder routine programs around the globe, Mitrovich redirected her focus to develop strategies to reinstate and maintain vaccination programs that prevent the onset of vaccine-preventable diseases. She is also working to ensure that vaccination is considered an essential healthcare service to prevent further disruptions.

“Increasing vaccination rates and identifying missed doses ensures that we don’t encounter disease outbreaks for other serious infections due to dips in coverage rates following lockdown periods,” explains Mitrovich, who

completed the DrPH program in 2019. “Strengthening vaccination efforts can also position these programs to be more resilient and improve their functionality in long term. This is especially important should COVID-19 become an endemic disease where annual vaccination is required across the life course.”

“We are all working towards the same goals.”

RACHEL MITROVICH, DIRECTOR OF GLOBAL VACCINES PUBLIC POLICY AT MERCK

She says that collaborating between the private and public sector on public health issues is one of the most fulfilling aspects of her job.

“There is an understanding that we are all working towards the same goals,” she says. “At Merck, everyone is invested in global health and in saving lives. To me, that moral compass of the work is incredibly important in making sure that the fight against vaccine-preventable diseases is based on equitable and broad access to vaccines across the globe—that no one is left behind.”

Director of Global Vaccines Public Policy at Merck



PROFESSOR EMERITA WENDY MARINER
WORKS TO MAKE SURE THE VOICES
OF THOSE AT GREATEST RISK ARE HEARD.

PHOTOS BY CONOR DOHERTY

Vote

“YES” ON DEMOCRACY

“Too many voices have not
been heard over what our
laws should be.”

WENDY MARINER, PROFESSOR
EMERITA OF HEALTH LAW,
BIOETHICS & HUMAN RIGHTS



“I wanted to learn how
laws shape our world
and how they can push
for justice.”

WENDY MARINER,
PROFESSOR EMERITA OF
HEALTH LAW, BIOETHICS &
HUMAN RIGHTS



“WHEN VOICES ARE SILENCED in elections, democracy withers,” says Wendy Mariner.

This central issue around voting restrictions has played out in Congress and state legislatures across America this year, and has also spurred the former Edward R. Utley Professor of Health Law, Bioethics & Human Rights at the School of Public Health to sharpen her focus on advocating for voting rights in her first year as professor emerita.

After 34 years of teaching with “the best health law and ethics faculty in the country,” Mariner retired from her professorships at SPH, the School of Medicine, and the School of Law in December 2020, but she remains active and committed to sharing her vast knowledge of the US legal system and the impact of laws on issues concerning fair elections, healthcare access, health equity, and social justice.

Mariner attended Columbia Law School during the Civil Rights Movement and the Vietnam War, and she says her retirement came at a full-circle moment amid the nation’s racial reckoning and widening divide on legal issues that impact public health.

“I wanted to learn how laws shape our world and how they can push for justice,” Mariner explains. What she learned, she says, is that laws allocate risks—and that risks to health arise from social determinants. “That concept wasn’t well recognized when I first began teaching, and at SPH, I’ve tried to examine and teach how our laws shape everything from reproduction to education, housing to food supply, gun violence to medical care, and especially poverty to epidemics.”

Beyond the social determinants of health exists an even deeper influence on health risks, she says—voting in elections.

“Voting chooses our legislatures, and thus, our laws,” she says. “Today, too many voices have not been heard over what our laws should be—mostly the voices of those who suffer the greatest risks in society: the poor, women, people of color, LGBTQ Americans. People aren’t choosing their representatives; representatives are choosing their voters.

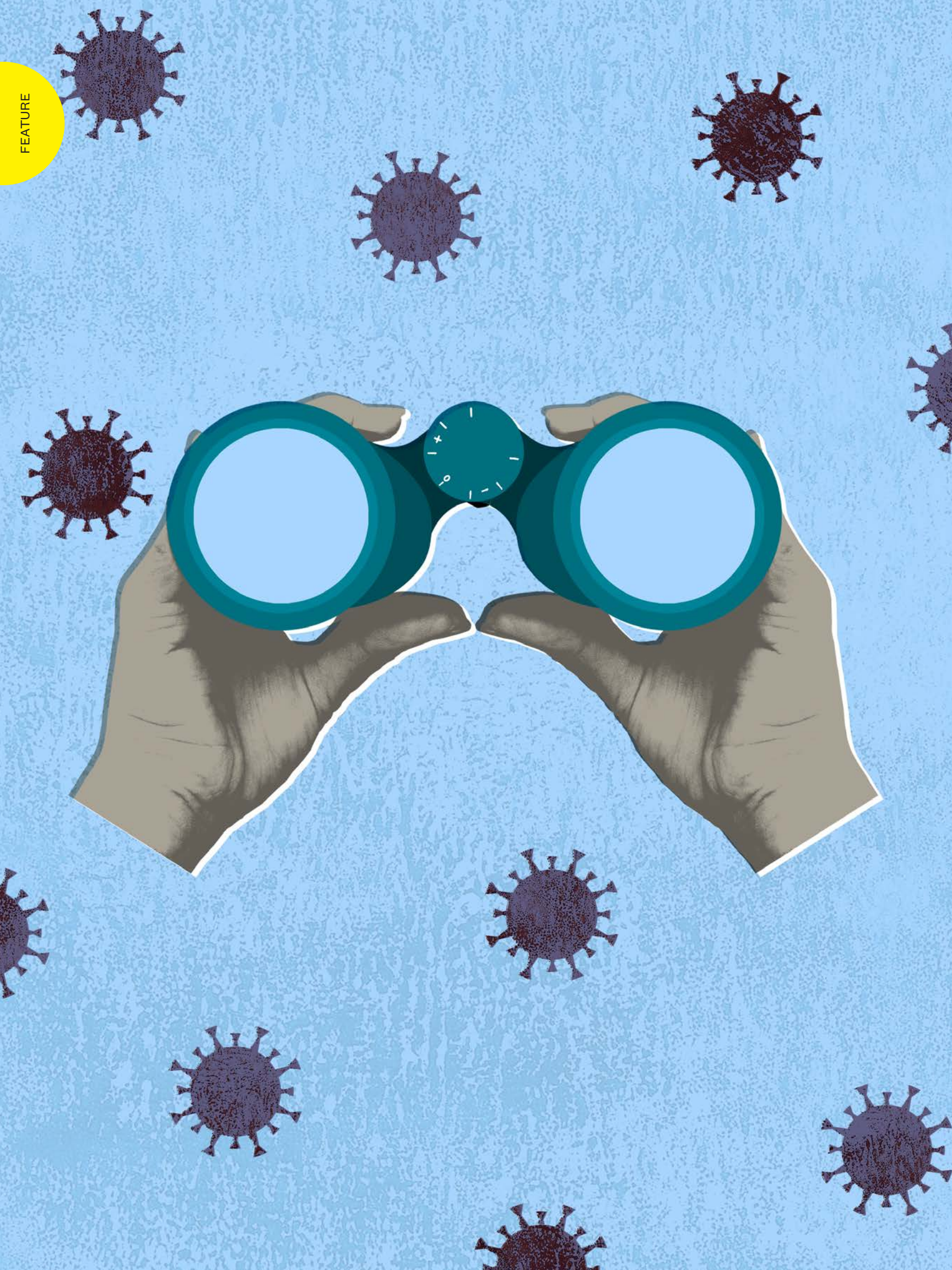
“So, I’m very happy to become emerita and stay engaged with the school and its mission, and to continue this work as an advocate for voting rights and fair elections.”

Mariner has also served in several legal organizations. As past chair of the American Bar Association’s Section on Civil Rights and Social Justice, she launched and now chairs a task force on fair elections and voting rights.

She has also coauthored three editions of the textbook *Public Health Law* and published more than 100 articles on patient and consumer rights, healthcare reform, health insurance benefits and regulation, reproductive rights, and more. Mariner continues to write about these issues, in particular, the Affordable Care Act, as well as the likelihood of a national health insurance program, a move she supports.

“I did not think that we would have anything resembling universal healthcare by the time I retired, but now I think we can,” Mariner says.

“But we’re going to have to work very hard to keep these successes that we have enjoyed. We have to continue to pay close attention to the law. Otherwise, we could lose our democracy.”



WILL
WE BE

READ

NEXT TIME?

THE COVID-19 PANDEMIC TAUGHT
US THAT WE HAVE MUCH WORK
TO DO BEFORE THE NEXT CRISIS.

BY MALLORY BERSI
ILLUSTRATIONS BY JOE MAGEE

The COVID-19 pandemic has changed everything, pushing public health into the national and global conversations like never before.

In some ways, the response to the pandemic has been a triumph. In less than a year, safe and effective vaccines were developed and distributed across the globe, which can often take a decade or longer. However, a lack of preparedness, unclear communication with the public, and a disproportionate threat to vulnerable populations have created an unprecedented challenge.

As the pandemic took shape, School of Public Health faculty, staff, students, and alums responded on every front. And as the world transitioned into its “new normal,” the SPH community looked to the future to prepare for the next inevitable health crisis.

36% EARLY US COVID DEATHS MAY HAVE BEEN UNDERCOUNTED BY 36 PERCENT.

Source: SPH, the University of Pennsylvania, and the Robert Wood Johnson Foundation

ON PANDEMIC PREPAREDNESS.

AS COVID-19 CASE COUNTS rose and hospitals quickly became overburdened with patients, it became clear that the United States was not prepared for a crisis of this magnitude. “This was, in part, a consequence of an underfunded public health infrastructure over the last several decades,” says Christopher Gill, an associate professor of global health, “as well as a result of leadership being slow to act when COVID-19 became a clear threat.”

A lack of testing capacity and appropriate data collection systems and standards also left experts unable to fully grasp the scope of the outbreak. And as death counts began to rise across the globe, SPH researchers found that testing shortages and a lack of accurate data collection left deaths largely undercounted, both in the US (pg. 82) and Africa (pg. 86).

“The importance of pandemic preparedness has never been more clear,” says Davidson Hamer, a professor of global health. “The challenge now is to develop infectious disease surveillance systems in places where outbreaks are likely to occur, such as low- and middle-income countries, and build collaborations so the global community can rapidly and collectively respond to future emerging threats.”

“The importance of pandemic preparedness has never been more clear. The challenge now is to develop infectious disease surveillance systems in places where outbreaks are likely to occur, such as low- and middle-income countries, and build collaborations so the global community can rapidly and collectively respond to future emerging threats.”

DAVIDSON HAMER, PROFESSOR OF GLOBAL HEALTH



ON COMMUNICATING WITH THE PUBLIC.

AS THE PANDEMIC unfolded, a torrent of ever-changing and often unclear information came out from the media, which resulted in a breeding ground for misinformation and distrust.

“It is important to recognize that public health literacy is distinct from health literacy,” says Eleanor Murray, an assistant professor of epidemiology who is well known on Twitter for accessible explanations of complex epidemiology concepts. “Conveying messages to the public about the importance of thinking collectively to stop disease spread during the pandemic has been a huge challenge because of low public health literacy, and filling this gap is crucial for countering the spread of misinformation in the future.”

To help fill some of these communication gaps related to the pandemic, Murray cofounded the Epidemiology COVID-19 Response Corps at SPH.

“It is important to recognize that public health literacy is distinct from health literacy.”

ELEANOR MURRAY, ASSISTANT PROFESSOR OF EPIDEMIOLOGY

From educational Twitter threads and collaborations with online publications to creating an informational YouTube channel, the COVID Corps prioritized distributing accessible pandemic information to the public that evolved with the current science.

ON PROTECTING THE VULNERABLE.

AS COVID-19 CASE COUNTS and death rates rose across the country, it quickly became evident that the social injustices that existed long before the first coronavirus cases emerged were being exacerbated by the virus. Not only were people of color and low-income communities at a greater risk for contracting the virus, but they were also more likely to suffer the physical, mental, and economic consequences.

Along with an abrupt shift in how we live, work, and play came one of the steepest economic downturns in recent history, leaving tens of millions of Americans unemployed and increasing food and housing insecurity across the country. “Stimulus checks have been a lifeline to many during this pandemic, especially households with children” says Julia Raifman, an assistant professor of health law, policy & management and lead author on a study that found that unemployment aid directly translates to people being able to put food on the table.

Of those able to continue working during the pandemic, not all could transform their living space into a home office. “Lower-income people simply couldn’t stay home as much because they needed to go to work,” says Jonathan Jay, an assistant professor of community health sciences, who led a study that found that physical distancing policies alone were not enough to protect lower-income people from the virus. Jay says that policies that make it easier to work from home—and stay home when sick—are critical for protecting low-income workers from future threats.

“Disaster preparedness isn’t just the National Guard, personal protective equipment, and bottled water anymore,” point out Paul Shafer, assistant professor of health law, policy & management, and Cecille Joan Avila, policy analyst in health law, policy & management, in a report on how COVID-19 has exposed gaps in the US social safety net. “This pandemic has shown that it is now also the ability to keep people economically afloat through a potentially prolonged and sudden financial crisis.”

A mapping tool created by SPH researchers, faculty, and students also helped spotlight environmental injustices and the contributions of structural racism that led to the deep inequities exposed during the pandemic (pg. 48). “The populations vulnerable to COVID-19 are vulnerable to climate change and a host of other stressors,” says Jonathan Levy, professor and chair of environmental health. “We need to start making smart investments now to increase resiliency not just to future pandemics, but to climate change and other unanticipated challenges. The systemic changes we make cannot just address a single problem at a time.”

The COVID-19 pandemic may have shown that it is time to rethink our approach to health, and that we cannot create a world that supports the health of all if we do not also address racial inequities, climate change, economic injustices, and safe housing.

There is much to do to prepare for the next health challenge, but with a newfound spotlight on the work of public health, the time to make a change is now.

Focus on

Solutions

NOW IS THE TIME

ENVIRONMENTAL HEALTH

Founded in 1977, the Department of Environmental Health emphasizes the need to not just study public health problems, but solve them.

NOTHING AFFECTS OUR HEALTH

more than our environment; the air we breathe and where we live dictate our environmental exposures and can determine our overall health. Although everyone is affected by their environment regardless of their income, race, or ethnicity, income inequality and structural racism subject some communities to far greater environmental health risks than others. And as climate change continues to worsen, it has a greater impact on health.

The Department of Environmental Health at the School of Public Health has worked for decades conducting policy research, collaborating closely with the communities most affected, to help address environmental challenges. Now, faculty, staff, and students are contributing to a better understanding of how environment affects things like your chances of getting COVID-19 or being exposed to air contamination near a hazardous waste site.

“We are a community in the truest sense of the word,” says Jonathan I. Levy, professor and chair of environmental health. “We aim to be a diverse, inclusive, and equitable workplace and intellectual home for staff, students,

faculty, and visitors, representing and reflecting the experiences and concerns of communities facing environmental injustice and environmental health hazards.”

The department’s Master of Public Health (MPH) program graduates are highly sought after by local, state, and federal public health organizations.

“We aim to be a diverse, inclusive, and equitable workplace and intellectual home for staff, students, faculty, and visitors, representing and reflecting the experiences and concerns of communities facing environmental injustice and environmental health hazards.”

JONATHAN I. LEVY,
CHAIR AND PROFESSOR OF
ENVIRONMENTAL HEALTH

Doctor of Philosophy (PhD) program graduates have been extremely successful in settings including academia, government, consulting, industry, and NGOs.

“Our doctoral students have often led the way during key moments in our history, ranging from increased emphasis on interdisciplinary scholarship to advancing our efforts on diversity, equity, and inclusion. I am proud that we have been able to develop and maintain a culture in the department that attracts truly phenomenal students who enrich our culture,” Levy says.

The focus on solving problems rather than only studying them has been central to the department’s mission since its founding in 1977, informing research methods and training programs and linking scholarship to public health practice.

Key research efforts include the large, multisite Gulf War Illness Biorepository Network, projects within a Federal Aviation Administration Center of Excellence focusing on air pollution and aircraft noise, an environmental health disparities research center that examines topics ranging from air pollution exposure inequality to COVID-19 in Massachusetts, and studies examining the effects of chemical mixtures on health.

Much of this research positions the department to be among national and global leaders in addressing climate change by providing insights on the public health benefits of climate action, particularly among communities of color.

The department is committed to training the next generation of public health leaders by emphasizing the skills and knowledge necessary to inform solutions to environmental health challenges.

“We plan to continue to evaluate the complex mixtures of social and environmental stressors faced in many communities, applying a social justice and antiracist lens to identify sustainable solutions,” Levy concludes.

To go from knowing nothing about a “mystery” condition to developing objective diagnostic testing and targeted treatment in 30 years is fast, says Kimberly Sullivan, research assistant professor of environmental health. But for the 250,000 veterans suffering from the set of chronic and debilitating symptoms now known as Gulf War Illness (GWI), she points out that it’s a very *long* time to wait for validation, VA benefits, and treatment.

As these Gulf War veterans enter the fourth decade of symptoms, including memory impairment, chronic pain, fatigue, gastrointestinal issues, and earlier onset of age-related chronic diseases, Sullivan and her colleagues have made a major breakthrough, finding that central nervous system proteins in the blood could be the key to objectively diagnosing GWI.

“Right now, GWI is diagnosed by self-report of health symptoms,” she says, “and Gulf War veterans have struggled to have their symptoms taken seriously as a unique disorder and not treated as chronic symptoms found after other wars or of those encountered as part of other similar, chronic multi-symptom disorders.”

Past studies by Sullivan and other GWI researchers indicate that the symptoms are caused by brain inflammation from exposure to the nerve agent sarin during the war, as well as the pyridostigmine bromide (PB) pills meant to protect against sarin gas, and the pesticides meant to protect soldiers against insect-borne illnesses.

The new study also supports brain alterations as the cause of GWI’s physical symptoms. Certain proteins “should not be in the blood if they did not at least, at some point, have damage to the central nervous system and changes to the blood-brain barrier,” Sullivan explains.



↑ US Air Force members hold an FIM-92A Stinger portable missile launcher during Operation Desert Shield.

RESEARCH

After 30 Years, a Test for Gulf War Illness

SSGT F. LEE CORKRAN/USAF

A research team led by Sullivan and Mohamed Abou Donia of Duke University School of Medicine compared blood samples from 171 veterans with GWI, 60 healthy Gulf War veterans, and 85 civilians with similar chronic medical conditions (50 with myalgic encephalomyelitis/chronic fatigue syndrome and 35 with irritable bowel syndrome).

Compared to the other groups, study participants with GWI had significantly higher levels of nine out of the 10 kinds of central nervous

system proteins measured in the study, distinguishing them from both healthy Gulf War veterans and from civilians with these similar conditions. The researchers published their findings in the journal *Brain Sciences*.

Beyond recognizing the disease, these biomarkers will be invaluable in the search for treatments. “We will be able to use these blood markers to track treatment trial effectiveness, if we measure these markers pre- and post-treatment,” Sullivan says.

The Gulf War Illness Clinical Trials and Interventions Consortium, which includes Sullivan and researchers from Nova Southeastern University, is currently testing several potential treatments for GWI. After 30 years, Sullivan says collaboration—between disciplines and through networks and consortia—continues to be key. “This is how we’ve gotten as far as we have: teams of scientists with different expertise coming together to solve different pieces of the puzzle of this complex illness while there is still time.”

PHD STUDENTS ARE COLLECTING AND COMPARING STREET NOISE DATA THAT COULD INFLUENCE HEALTH POLICY.

PHOTOS BY MICHAEL SAUNDERS

SOUND POLICY

WHILE REMOTE LEARNING during COVID-19 presented challenges for students and educators alike, it also sparked innovation inside and outside of the virtual classroom.

Field Methods in Exposure Science students at the School of Public Health were inspired while working remotely from their hometowns on a noise exposure project during the fall 2020 course taught by Diana Ceballos, professor of environmental health.

PhD candidates Stephanie Grady and Laura Buckley did not have specialized tools to capture acoustic measurements in Boston and Ithaca, New York. Instead, they downloaded the Sound Level Meter, Heat Safety Tool, and Noise Mapper mobile apps designed by the National Institute for Occupational Safety and Health to compare noise levels of streets open to traffic, versus streets closed to traffic and open for outdoor dining.

“Noise is related to sleep disturbance, hearing loss, cardiovascular diseases, communication disruption, and cognitive impairment, as well as anxiety and depression,” Grady explains.

“Noise is related to sleep disturbance, hearing loss, cardiovascular diseases, communication disruption, and cognitive impairment, as well as anxiety and depression.”

STEPHANIE GRADY, ENVIRONMENTAL HEALTH PhD CANDIDATE

Open street initiatives are often designed as public health measures to encourage climate mitigation, physical activity, and social cohesion, but there is little research on how these measures impact environmental noise.

“We wanted to learn about the impact on ambient noise levels when you reduce traffic noise exposure, but increase the number of pedestrians,

bicyclists, and outdoor dining areas on closed streets,” Buckley says.

Analyzing loudest noise, temperature, relative humidity, and traffic and pedestrian count, they found that, on average, Boston streets are 1.5 decibels louder than Ithaca streets, and open streets are 4.2 decibels louder than closed streets—data that can inform policies and interventions to control noise levels and prevent adverse health outcomes.



1.5dB
BOSTON STREETS ARE
1.5 DECIBELS LOUDER
THAN ITHACA STREETS

4.2dB
OPEN STREETS ARE 4.2
DECIBELS LOUDER
THAN CLOSED STREETS



BIRGIT CLAUSS HENN

Associate professor of environmental health

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How different chemical combinations affect us, especially children.

BIRGIT CLAUSS HENN first developed a curiosity about environmental exposures after a middle school science project on the effects of pollutants on brine shrimp, sold in kits to children as “Sea-Monkeys.” Now, as an associate professor of environmental health and the director of the PhD program in environmental health at the School of Public Health, Claus Henn has built a solid portfolio of research that explores the issues she first inquired about as a child.

An environmental epidemiologist, Claus Henn’s primary interests revolve around gaining a deeper understanding of how mixtures of environmental toxicants affect fetal and child development. Claus Henn’s work focuses in particular on the impact of these toxicant mixtures on child brain development.

“There is an infinite number of possible combinations of chemical exposures, so one aspect I’m studying is whether there are certain combinations of chemical exposures that occur more often,” she says.

One of her favorite projects involves a cohort of children, who are now adolescents, in a region of Italy where there is a lot of ferroalloy industry, and thus, concern about exposure to metals in the community.

Claus Henn is also exploring the impact of multiple chemicals in combination with non-chemical environmental factors, such as stress or diet.

“There is an infinite number of possible combinations of chemical exposures.”

BIRGIT CLAUSS HENN, ASSOCIATE PROFESSOR OF ENVIRONMENTAL HEALTH

“What I love most about my work is being able to think about a real-world problem that I might actually be thinking about in relation to my own kids,” she says. “While there is utility for many chemicals in our world, we do owe ourselves an understanding of how they might be hazardous, especially for the developing little humans we want to protect.”

HEATHER MCKENNEY

Transparency and safe ingredients are compatible with good business.

A GROWING DESIRE among consumers to choose products that are safe for themselves and their communities helps drive the mission and values of Los Angeles–based The Honest Company, where School of Public Health alum Heather McKenney is the manager of toxicology and product safety.

A purpose-driven venture launched by business leader, actor, advocate, and author Jessica Alba, The Honest Company provides safe and effective consumer goods such as baby, beauty, personal care, and cleaning products and has built a loyal customer base through its commitment to safety, efficacy, and full transparency about the ingredients it uses.

“The company has a guiding standard that is not only about ingredient selection for its products, but also continued improvement around sustainability and giving back to the community,” says McKenney, who joined Honest as a research toxicologist in 2017 after receiving her MPH in environmental health in 2017.

Now she leads the toxicology and product safety team within the Research and Development division, where she evaluates the company’s stringent process for ingredient selection and clinical testing.

“I evaluate formulas from an acute standpoint of potentially irritating ingredients, as well as the chronic, low-dose effects of certain chemicals of potential concern,” she explains. The company’s NO List™ identifies more than 2,500 ingredients that are deemed potentially harmful to health and omitted from all Honest products.

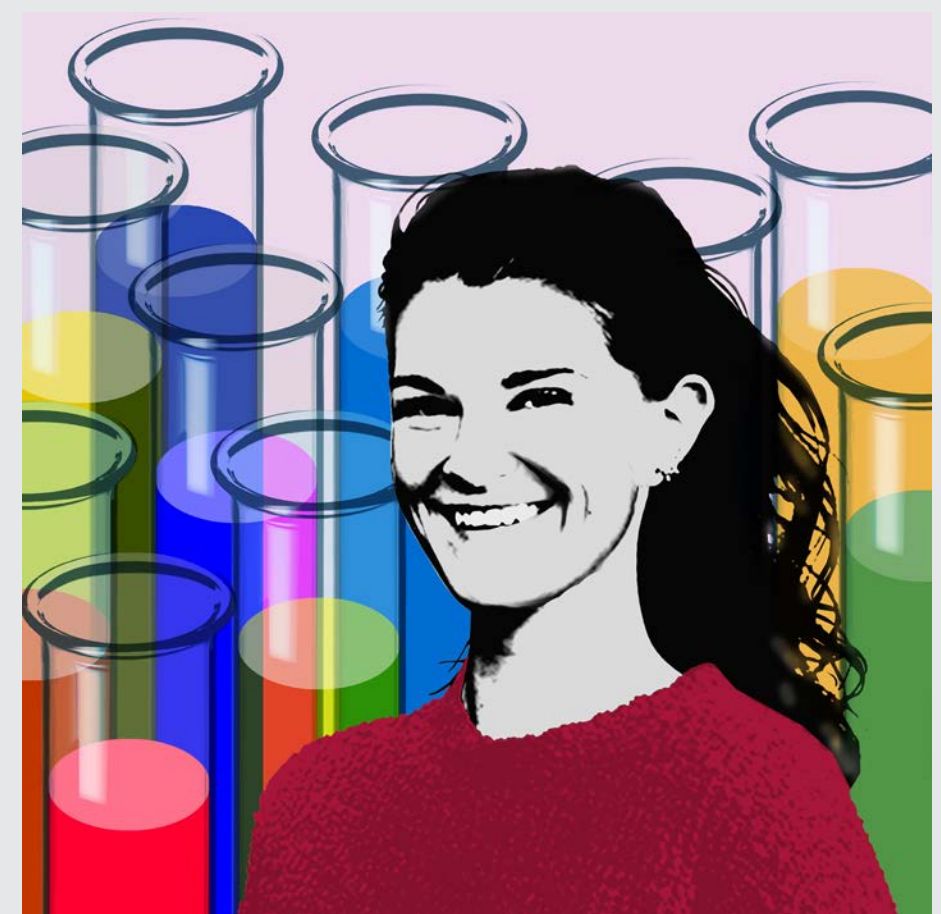
McKenney also engages with consumers on social media.

“As practitioners of public health, we owe it to our consumers and the general public to help educate them on ingredients and products, and guide them to make the best choices for themselves and their families.”

“We owe it to our consumers and the general public to help educate them on ingredients and products.”

HEATHER MCKENNEY (SPH '17), MANAGER OF TOXICOLOGY AND PRODUCT SAFETY AT THE HONEST COMPANY

Manager of toxicology and product safety at The Honest Company



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↓
Can sustainable sources provide affordable energy for cooling? That's one of the issues Madeleine Scammell examines as she researches the inequities of heat exposure.



RESEARCH

Who Feels the Heat?

MICHAEL D. SPENCER

C

limate change is a slow-motion disaster for some—and a not-so-slow disaster for the most vulnerable communities who have generally contributed the least to emissions, says Madeleine Scammell, associate professor of environmental health.

Increasingly, Scammell is studying heat in these communities, from Nicaragua to Chelsea, Massachusetts.

It began in 2008 with her research into an ongoing and still unexplained epidemic of chronic kidney disease in Central America that has killed thousands, most of them agricultural sugarcane workers. While pesticides were the initial culprit—and have not been ruled out—Scammell’s research with colleagues from SPH and National Autonomous University of Nicaragua has since identified high rates of the disease among other workers exposed to extreme heat, such as brickmakers.

Recently, Scammell has also been studying heat exposure closer to home—in fact, in her home city of Chelsea. While not as sweltering as some of the occupational heat found in Central America, urban heat in Chelsea and cities like it can still be dangerous and even deadly, especially for infants and older adults.

Scammell and colleagues received funding from the Barr Foundation to look at heat exposure in 30 households in Chelsea and neighboring East Boston, and how it is shaped by demographic inequities and other factors. The project is part of a partnership with Chelsea-based environmental justice organization GreenRoots, Inc. (where Scammell serves on the board), with city government involvement.

With COVID-19 and the Black Lives Matter movement making inequity impossible to ignore, public interest in the inequities of heat exposure has

“burgeoned,” Scammell says. “Urban heat islands tend to correlate with areas of cities that have been historically red-lined and not invested in.”

Scammell, co-principal investigator Patricia Fabian, associate professor of environmental health, and colleagues conducted questionnaires over Zoom (“the inequality was so apparent in terms of access to a device that you can use Zoom on, and have a good enough internet connection,” Scammell says), then dropped off temperature monitors for participants to place in their homes.

“Perhaps the big problem and solutions are in our energy sources and infrastructure.”

MADELEINE SCAMMELL,
ASSOCIATE PROFESSOR OF
ENVIRONMENTAL HEALTH

“Our goal in this study is to learn about experience of heat, thermal comfort, and coping mechanisms, so we can test solutions,” Scammell explains.

“Perhaps the big problem and solutions are in our energy sources and infrastructure. People are living in an urban heat island, struggling to pay their utility bills and dependent on an electricity infrastructure that’s owned by corporations in a deregulated market. How can they be affordable to people who rely on these utilities, and sustainable for the planet?”

That work on solutions is already underway. Scammell points to GreenRoots’ work with the Resilient Urban Neighborhoods and Green Justice Coalition, which focuses on “energy democracy”—specifically, community-owned microgrids, with an eye toward climate justice.

As for heat exposure among workers in Central America, Scammell says many countries and employers look to US regulatory agencies to set the bar. Public Citizen, the United Farm Workers Foundation, and Farmworker Justice have been advocating for an occupational heat standard here in the US, where it is estimated that millions of outdoor workers lack protection from the dangers of heat.

“It is all connected,” Scammell says.

PUTTING COVID-19 ON THE

“People are vulnerable for many reasons.”

PATRICIA FABIAN, ASSOCIATE PROFESSOR OF ENVIRONMENTAL HEALTH

IN THE EARLY DAYS of the COVID-19 pandemic, Massachusetts was one of the hardest-hit states, and the virus severely and disproportionately impacted communities of color. A team of faculty members, researchers, and students at the School of Public Health quickly launched into action and developed an interactive mapping tool that offered visual and analytical insight into exactly which populations, cities, and towns were most vulnerable to the coronavirus in the commonwealth.

Nearly two years after that initial surge, the team has continued to maintain and update this tool, which displays vulnerabilities that these communities continue to experience, based on a range of health, economic, environmental, and social factors.

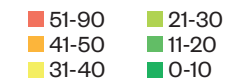
The story map also helped inform an environmental justice policy brief released by the Massachusetts Office of the Attorney General last year providing recommendations on how the commonwealth can strengthen environmental regulations that protect public health.

“Environmental justice communities have been disproportionately burdened by COVID-19 because of a combination of factors ranging from workplace exposures to overcrowded housing to environmental exposures that lead to higher rates of respiratory and cardiovascular disease,” says Jonathan Levy, chair and professor of environmental health. “Only by understanding the influence of environmental exposures can we protect vulnerable populations from this pandemic and future crises, including climate change.”

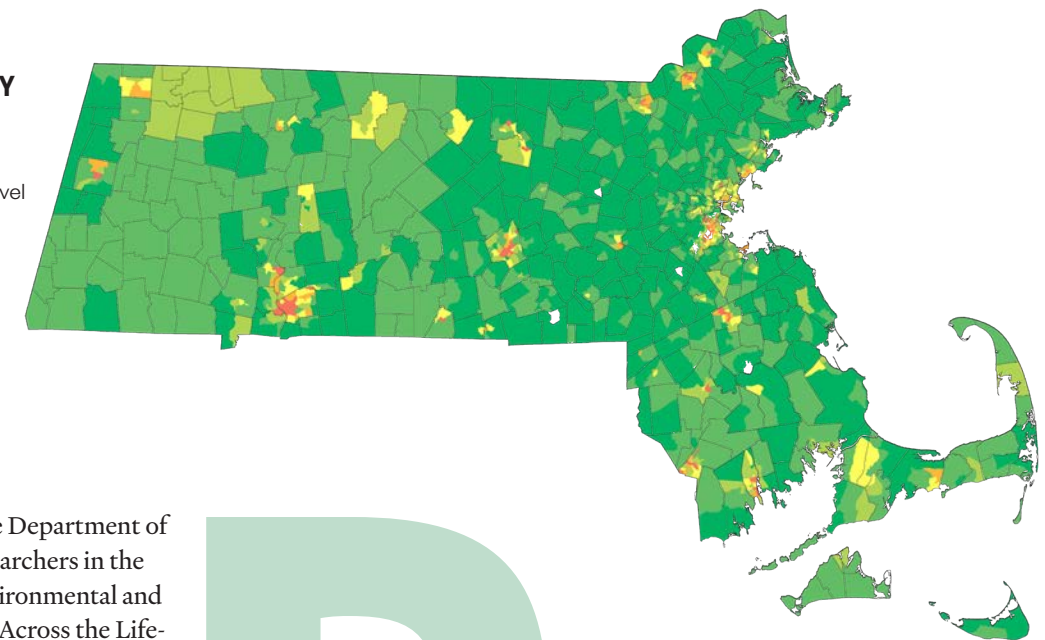
Spearheaded by Patricia Fabian, associate professor of environmental health, the story map is a collaborative project produced by faculty members

ECONOMIC VULNERABILITY IN MASSACHUSETTS

Families with incomes under 200% of the Federal Poverty Level by percentage:



Source: Center for Research on Environmental and Social Stressors in Housing Across the Lifecourse



and doctoral students in the Department of Environmental Health, researchers in the Center for Research on Environmental and Social Stressors in Housing Across the Lifecourse, and students in Fabian’s spring 2020 GIS for Public Health Data Analytics course.

The work was sparked by the efforts of Madeleine Scammell, associate professor of environmental health, who was one of the first to identify the surge of COVID-19 cases in the hardest-hit city in Massachusetts, Chelsea, and who helped identify town-by-town data on positive COVID-19 cases.

The tool presents seven categories of COVID-19 vulnerabilities that have most affected residents—health, economic, density & environmental justice, quarantine/isolation, environmental, heat, and housing—and displays the burden of each vulnerability in every city and town. It is populated with data from the Massachusetts Department of Public Health and other public government sources.

“People are vulnerable for many reasons, and we are highlighting what those disparities are in different neighborhoods and towns across Massachusetts,” says Fabian.

The idea for the mapping tool stemmed from a student midterm project in Fabian’s EH 811 class in the spring. MPH student Mark Hernandez developed a Boston-specific COVID-19 story map that highlighted vulnerable seniors, people with comorbidities, and single parents.

“My initial analysis highlighted how the COVID-19 crisis impacts health in a variety of ways, whether it be through job loss or isolation,” says Hernandez, who collaborated with MPH student Bilqis Williams (SPH’20) on the project last year. “After receiving positive feedback, I realized that it could also be a great informational tool for the general public.”

AN SPH TEAM DEVELOPS AN INTERACTIVE TOOL

THAT TRACKS COMMUNITY VULNERABILITY
TO COVID-19 BASED ON VARIOUS FACTORS.

CURING

MEDICAID

**MAKING
THIS VITAL**
PROGRAM
READILY
AVAILABLE
TO MORE
AMERICANS
IS CRITICAL
TO OUR
HEALTHCARE
SYSTEM.



*As one of the main financial backers
of safety-net care,*

MEDICAID IS A CRITICAL PILLAR OF THE US HEALTHCARE SYSTEM.

SPH researchers are investigating how the program and its complex interplay of state and federal policies can improve the health of populations, despite a host of challenges in determining eligibility and delivering care.

Taken in part from a “lightning talk” introducing the interdisciplinary work of the Medicaid Policy Lab, our researchers help explain, in their own words, why we should all care about Medicaid and what might be done to fix it—for the health of all.

ILLUSTRATION BY JOE MAGEE

A STATE-FEDERAL PARTNERSHIP PROGRAM THAT PROVIDES HEALTH INSURANCE TO MORE THAN 70 MILLION PEOPLE,

MEDICAID TOUCHES MOST AMERICAN LIVES.

Sarah Gordon

ASSISTANT PROFESSOR
OF HEALTH LAW, POLICY &
MANAGEMENT

Many of us, or our loved ones, will rely on it at some point over our lifetimes, as it is a primary payer for births, children, mental health care, and long-term care in the US, and is the largest source of funding for medical and health services for people with low incomes in the US.

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ADDRESSING
THE

GAP

Megan Cole Brabim
ASSISTANT PROFESSOR OF HEALTH
LAW, POLICY & MANAGEMENT

One of the biggest post-ACA challenges in Medicaid policy is that the 2012 Supreme Court ruling on the ACA left Medicaid expansion optional in states, thereby creating what's known as the "coverage gap," where in nonexpansion states, low-income, childless adults are ineligible for Medicaid yet make too little money to qualify for subsidies in the ACA marketplaces. Creating a public option that is "free" to low-income Americans—or expanding existing marketplace subsidies to persons under 100 percent of the federal poverty level—would help to address this critical gap.

15 IN AMERICANS CAN'T AFFORD TO USE THEIR INSURANCE.

Paul Shafer
ASSISTANT PROFESSOR OF HEALTH
LAW, POLICY & MANAGEMENT

THE BIDEN ADMINISTRATION IS TAKING MEANINGFUL STEPS TO EXPAND HEALTH INSURANCE COVERAGE, BUT WE NEED MEANINGFUL REFORMS TO ADDRESS UNDERINSURANCE: WHEN PEOPLE HAVE INSURANCE BUT CAN'T AFFORD TO USE IT. THIS AFFECTS ONE IN FIVE AMERICANS, MAKING THEIR INSURANCE CARD A PASSENGER IN THEIR WALLET RATHER THAN A VEHICLE TO GETTING THE CARE THAT THEY NEED.

IN

AMERICANS
CAN'T AFFORD
TO USE THEIR
INSURANCE.

55

TWO MILLION+

Nicole Huberfeld
EDWARD R. UTLEY PROFESSOR OF HEALTH LAW, BIOETHICS & HUMAN RIGHTS

As states slowly rolled out Medicaid expansion over time, Medicaid became one of the most important, most studied insurance rollouts—maybe in our history. As of now, there are more than 400 studies that show that Medicaid expansion improves individual and public health support providers—especially providers in rural hospitals—and stabilizes state budgets. In addition, Medicaid has the effect of doing things like improving access to care, improving health equity, and other important measures. Nevertheless, we have more than two million people across the country who remain in that coverage gap.

PEOPLE ACROSS THE COUNTRY REMAIN IN A COVERAGE GAP.

About 50 percent of patients at federally qualified health centers (FQHCs) are enrolled in Medicaid, about one in four are uninsured, and the majority of these patients come from racial and ethnic minority groups. For these populations, FQHCs provide comprehensive, culturally competent, quality primary healthcare services. And they provide these services to more than 30 million people across the US—about one in 11 people, one in 8 children, one in 5 Medicaid patients, and one in 3 people who are below the federal poverty level.

Megan Cole Brabim
ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT



FQHCs PROVIDE PRIMARY HEALTHCARE SERVICES TO 30 MILLION+ PEOPLE ACROSS THE US.

MEDICAID

EXPANSION

Paul Shafer
ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

If you're a parent in North Carolina and make more than \$744 a month for a family of four, you don't qualify for Medicaid. As a childless adult, there is no income-based pathway through which you can qualify for Medicaid in North Carolina, because it's not an expansion state and \$744 is not very much, particularly in the context of a global pandemic when availability of resources and jobs are heavily constrained. Even before the pandemic, North Carolina had over 200,000 people in the coverage gap, meaning that they made too much to qualify for Medicaid, but not enough to qualify for subsidies in the marketplace. Perhaps not surprisingly, the uninsured rate in the state rose to approximately 20 percent during the pandemic.

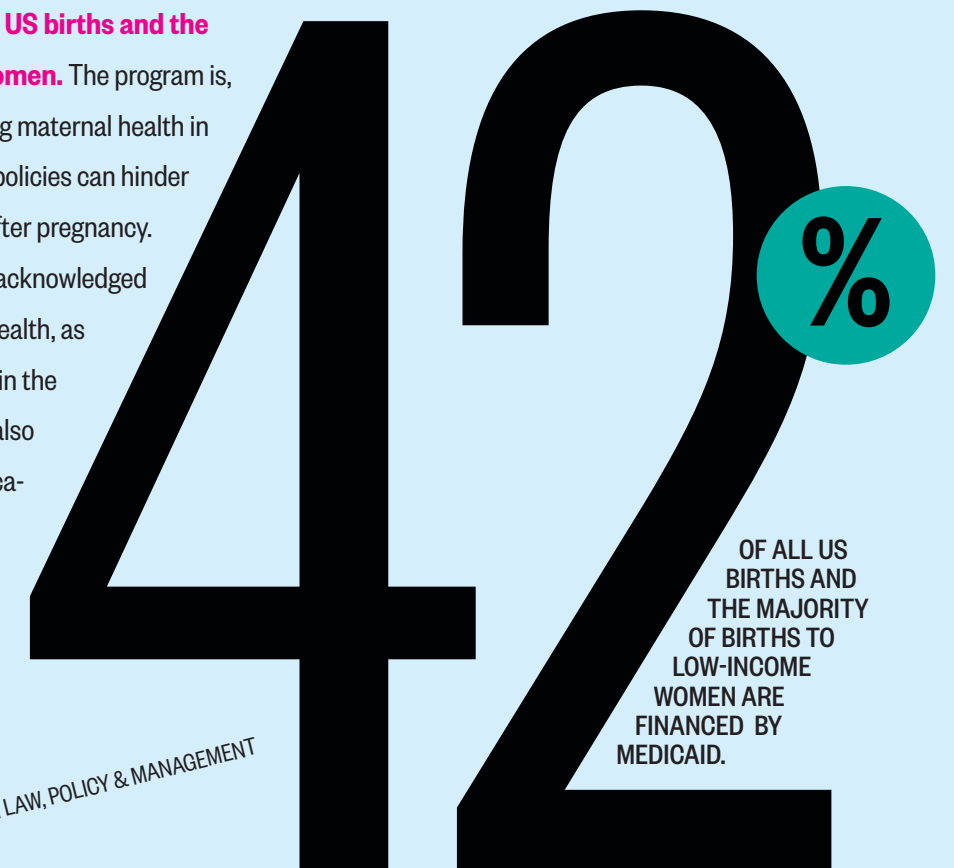
IS A KEY PIECE TO ENSURING ACCESS TO HEALTHCARE DURING PUBLIC HEALTH AND ECONOMIC CRISES.

IMPROVEMENTS

Megan Cole Brabim
ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

Our work has also found that Medicaid-accountable care organization implementation has been associated with things like relative improvements, cancer screenings such as pap testing and colorectal cancer screenings at federally qualified health centers, and improvements in indicators of maternal health, including timely access to prenatal care and decreases in low birth weight.

Medicaid finances 42 percent of all US births and the majority of births to low-income women. The program is, therefore, a key policy lever in improving maternal health in the US, yet current Medicaid eligibility policies can hinder continuity of care before, during, and after pregnancy. The postpartum period is increasingly acknowledged as a critical time to address maternal health, as one-third of maternal mortality occurs in the year after delivery. This period of time also offers opportunities to address complications from pregnancy or childbirth, as well as promote women's physical and emotional health.



Sarah Gordon
ASSISTANT PROFESSOR OF HEALTH LAW, POLICY & MANAGEMENT

more
than COVID-19

NOW IS THE TIME

EPIDEMIOLOGY

Responding to the COVID-19 pandemic is just one aspect of a field that runs the gamut from environmental hazards to health inequity.

COVID-19 HAS MADE STUDYING the patterns and spread of disease more crucial than ever before. But even before the pandemic, the field of epidemiology—the study of patterns and causes of health-related events in populations—had been evolving in scope and importance. With increasing concerns about emerging infectious diseases, environmental hazards, and global health disparities, epidemiologists play key roles in developing policies and interventions to protect and improve the health of populations.

“For most of us, our first identities are as epidemiologists. We share a passion for epidemiologic concepts, theory, methods, and applications; we love employing epidemiology tools to any of a range of research topics, even when outside our specific areas of research, as a way to stretch our learning and teaching.”

MARTHA WERLER, CHAIR AND PROFESSOR OF EPIDEMIOLOGY

The Department of Epidemiology unites around two parallel passions: the desire to serve the greater good of healthy populations, and a dedication to the teaching of epidemiology.

Epidemiology faculty are expert in a wide variety of research areas, and Martha Werler, professor and chair of epidemiology, says collaboration and mutual trust between faculty and staff give the department the feel of an extended family.

“For most of us, our first identities are as epidemiologists. We share a passion for epidemiologic concepts, theory, methods, and applications; we love employing epidemiology tools to any of a range of research topics, even when outside our specific areas of research, as a way to stretch our learning and teaching,” Werler says.

Research projects in the department include internet-based recruitment, enrollment, and data collection of couples seeking pregnancy; using machine learning to identify predictors of suicide; how air pollution and racial inequities affect cognitive decline; gun violence; and pressing public health threats such as COVID-19 and vaping.

“We are leveraging our areas of expertise and data resources to broaden our research portfolios in two ways: to encompass both individual-level and macro-level exposures and to consider these multilevel factors across the full life course,” Werler notes.

Originally established in 1981 as the Epidemiology and Biostatistics Department, the two areas separated in 1999. The doctoral program was the first offered at BUSPH. As of 2020,

119 students have received a doctoral degree in Epidemiology from BUSPH. “These alumni have gone on to practice epidemiology in academia, government agencies, and the private sector, including 56 professors, 12 leaders at health institutes, and 23 senior program directors in the pharmaceutical industry. Five of our alumni have written textbooks in epidemiology,” Werler says.

“By looking at our epidemiology studies with a new lens on fundamental race, racialization, ethnicity, and racism, we hope to move the needle to health equity.”

MARTHA WERLER, CHAIR AND PROFESSOR OF EPIDEMIOLOGY

Epidemiology has always been one of the most popular tracks at BUSPH, and Werler says the department is proud of the more than 2,600 public health professionals across the US and the globe that received a doctorate, MS in Epidemiology, or MPH degree, with a certificate in Epidemiology and Biostatistics or Chronic and Non-Communicable Diseases.

As the department looks to the future, Werler says they are acutely aware of the pervasive health disparities along racial and ethnic lines, currently thrown into sharp relief with the COVID-19 pandemic. She says they plan on spending critical time evaluating how epidemiologists can highlight and address the ways racism harms health.

“By looking at our epidemiology studies with a new lens on fundamental race, racialization, ethnicity, and racism, we hope to move the needle to health equity.”

RESEARCH

Professor Receives \$6 Million in NIH Grants to Study Air Pollution, Noise, and Dementia Risk

“The signals so far, including those from our study, suggest we should pay more attention to the possibility that noise affects cognitive risk as we age.”

JENNIFER WEUVE, ASSOCIATE PROFESSOR OF EPIDEMIOLOGY

Jennifer Weuve, associate professor of epidemiology, has received two grants from the National Institute on Aging (part of the National Institutes of Health) to explore links between environmental exposures and Alzheimer’s disease and related dementias (ADRD).

Totaling more than \$6 million, the grants fund a four-year study on air pollution and community noise exposure as risk factors for ADRD, as well as a five-year study on whether the olfactory system acts as a pathway for environmental toxicants to reach the brain and cause ADRD.

Few studies have determined if a combined exposure to air pollution and ambient noise amplifies one’s risk of cognitive decline and ADRD. In the Air-Noise-Dementia project, Weuve is focusing on the effects of combined exposure to aircraft noise and traffic-related air pollution such as fuel combustion pollutants from tailpipes and dust generated by tire and brake wear.

Weuve is utilizing data from the Chicago Health and Aging Project and the Parent Offspring Resilience and Cognitive Health study, two population-based cohort studies of older adults.

“This project will further advance our understanding of air pollution, noise, and ADRD by studying the effects of both



JANINE WIEDEL PHOTOGRAPHY/ALAMY STOCK PHOTO

exposures on brain structure and cerebrovascular disease that can be viewed on brain imaging,” she says.

In a study published in *Alzheimer’s & Dementia*, the journal of the Alzheimer’s Association, a team co-led by Weuve finds that 10 decibels more daytime neighborhood noise is associated with 36 percent higher odds of mild cognitive impairment and 30 percent higher odds of Alzheimer’s disease. The study is one of the first of its kind in the US.

“We remain in early stages in researching noise and dementia, but the signals so far, including those from our study, suggest we should pay more attention to the possibility that noise affects cognitive risk as we age,” says

Weuve. “If that turns out to be true, we might be able to use policy and other interventions to lower the noise levels experienced by millions of people,” she says, noting that the US Environmental Protection Agency last set community noise level guidelines back in the 1970s. “Those guidelines were set to protect against hearing loss. Many of our participants were exposed to much lower levels.”

The study included 5,227 older adults participating in the Chicago Health and Aging Project (CHAP), which has followed a total of 10,802 individuals 65 years old or older living on the South Side of Chicago since the 1990s. Participants were interviewed

and their cognitive function tested in three-year cycles.

For neighborhood noise levels, the researchers used a Chicago-area model from a previous study that gathered samples of A-weighted noise (the important frequencies for human hearing) at 136 unique locations during daytime, non-rush-hour periods between 2006 and 2007. The study then used these samples—combined with data on other geographic factors including land use and proximity to roadways and bus stops—to estimate noise levels in any Chicago-area location. Follow-up sampling found that the model was still accurate in CHAP participant neighborhoods in 2016.

Since 1976, the Boston University-based Framingham Heart Study (FHS)—the longest-running multigenerational epidemiological study in the world, started in 1948—has followed participants for incident dementia. The findings have helped to analyze the differences between normal, age-related changes in thinking and disease-related pathological alterations.

Now, thanks to a five-year, \$26.56 million grant from the National Institutes of Health, a new program called the Framingham Heart Study Brain Aging Program (FHS-BAP) will continue to survey and evaluate FHS participants for dementia, including cognitive assessments and brain imaging, and invigorate the FHS brain donation program and brain bank.

The FHS-BAP will feature three interrelated projects that focus on vascular and inflammatory contributors to Alzheimer’s disease (AD). One project will identify factors that are associated with AD risk and resilience using longitudinal analyses of FHS data including various genetic, clinical, imaging, lifestyle, and other traits. A second project will investigate the link between AD genetic vulnerabilities and chronic inflammation. A third project will study the impact of variants in genes affecting immune function on AD-related brain changes and cognitive performance.

Lindsay Farrer, chief of biomedical genetics at the School of Medicine and professor of biostatistics and epidemiology at the School of Public Health, one of two principal investigators, will lead the research.

The other principal investigator, Rhoda Au, professor of anatomy & neurobiology and neurology at the School of Medicine and of epidemiology at the School of Public Health, will coordinate research participant engagement in the program.



RESEARCH

Researchers Awarded \$26.56 Million Grant for Brain Aging Program

JOHN GREIM/LIGHTROCKET/GETTY IMAGES

SAMANTHA PARKER KELLEHER

The postpartum cardiovascular effects of pregnancy last beyond six weeks.

FROM EPIDEMIOLOGY doctoral student to assistant professor of epidemiology, Samantha Parker Kelleher (SPH’14) has dedicated much of her epidemiologic research at the School of Public Health to understanding the relationship between prenatal exposures and infant and childhood outcomes, as well as the role of adverse pregnancy outcomes in subsequent maternal health.

“There’s so much focus on the short-term impacts of pregnancy on maternal health, and what I’m interested in now is understanding how pregnancy outcomes impact the full span of a woman’s life, starting with the postpartum period,” Kelleher says.

Kelleher is the principal investigator for a five-year study funded by the National Heart, Lung, and Blood Institute in which she is examining the role of adverse pregnancy outcomes and the maternal risk of coronary heart disease (CHD) among participants in the study.

“We know that women with a history of preterm birth are at an increased risk

for subsequent maternal cardiovascular disease,” she says. “The next step is to see if there are any earlier signals of cardiovascular disease that we can use to identify women who are at risk of a heart attack or coronary disease later on.”

Kelleher is working toward this goal in a pilot project that examines postpartum blood pressure among women delivering at Boston Medical Center. It focuses on the one-year period after delivery, beyond the traditional postpartum period of six weeks.

“There is research that shows pregnancy-related cardiovascular outcomes can lead to maternal morbidity and mortality in the full year postpartum,” she notes. “The trajectory of hypertension right after delivery could be a means to get women into care before they have these severe outcomes.”

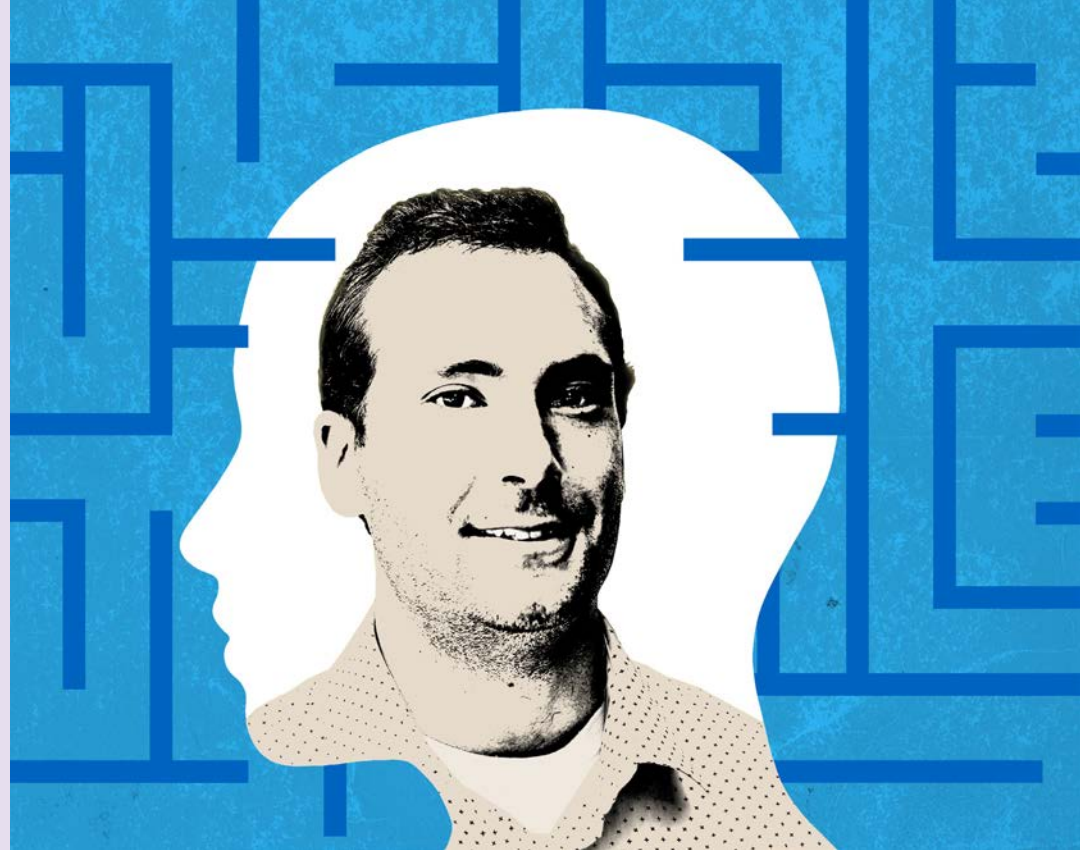
“I’m interested in understanding how pregnancy outcomes impact the full span of a woman’s life.”

SAMANTHA PARKER KELLEHER,
ASSISTANT PROFESSOR
OF EPIDEMIOLOGY

Assistant professor of epidemiology



ERIC RUBENSTEIN



Assistant professor of epidemiology

Children with intellectual & developmental disabilities (IDD) become adults with IDD; research should span the life course.

PERSONAL AND PROFESSIONAL passions guide Eric Rubenstein, assistant professor of epidemiology, in his work improving the health of people with intellectual and developmental disabilities (IDD).

“The IDD community has been my community for much of my life,” says Rubenstein, who has been a Special Olympics coach for 21 years. “This is a population that has co-occurring health conditions but also faces disparity and inequity that harm health.”

He points out that often, it’s overlooked that children with IDD eventually become adults with IDD, which is the reason his research centers on issues that impact the health of this community across the life course.

He is the principal investigator of a study evaluating pregnancy and maternal health outcomes in women with IDD. “For much of American history, it

was legal to forcibly sterilize this population under eugenics laws,” he says.

Due to this history, little is known about pregnancy in this population. But as their civil rights advance, Rubenstein says more women with IDD are expected to become pregnant and start families, so bringing disabilities into conversations about maternal health and pregnancy disparities is critical.

Rubenstein is also using Medicaid data to explore the link between Alzheimer’s disease and sleep apnea among people with Down Syndrome to gather population-level information about the community, which is often difficult to reach in a clinic.

“**The IDD community has been my community for much of my life.**”

ERIC RUBENSTEIN, ASSISTANT PROFESSOR OF EPIDEMIOLOGY

“Among my friends and the athletes I coach, I have seen how the healthcare system can negatively impact their health,” says Rubenstein. “Translating the energy I get from working with the community and the community’s unique needs into my research has been a great part of my life and work.”

PRACTICUM STUDENTS

Practicum students help shape COVID-19 response in Winthrop.

THREE MASTER OF PUBLIC HEALTH students played a vital role in shaping understanding of COVID-19 in the Town of Winthrop, Massachusetts, during multiple waves of the pandemic.

Kerra Washington, Mia Haddad, and Meredith Daly joined the COVID-19 Response Team in the town’s Department of Public Health & Clinical Services in June 2020, diving into contact tracing data analysis, policy implementation, and community outreach and education.

Drawing from federal and state-level data and guidelines, they connected with local governing bodies, retail businesses, and restaurants to answer business inquiries on safety measures and procedural processes around reopening.

“I learned more than I could have in any other practicum,” says Daly, MPH student and public health program director for the Town of Winthrop. “We analyzed policies and guidelines and put them into a digestible form to ensure that businesses and organizations were in compliance.”

Washington adds that the students also managed the town’s influenza

response, planning and directing multiple clinics including a hybrid drive-through/in-person option, with safety measures in place.

“We relayed to people the validity of getting a flu shot in combination with other safety measures, such as social distancing and mask wearing,” she says. “It has been a rewarding experience as a public health student to have worked at the local and state levels during a global pandemic.”

“**I learned more than I could have in any other practicum.**”

MEREDITH DALY, MPH STUDENT AND PUBLIC HEALTH PROGRAM DIRECTOR FOR THE TOWN OF WINTHROP, MASS.

The students also developed social media campaigns to keep the public informed about COVID-19, from social distancing guidelines and safe holiday celebration activities to COVID-19 guidebooks for children.

“Our posts have seen a lot of positive responses, and one of my favorite components is being able to communicate with the community and talk about COVID-19 safety measures in a health-orientated way,” Haddad says.

Kerra Washington; Mia Haddad; Meredith Daly, MPH student and public health program director for the Town of Winthrop, Massachusetts



How well is your community?

ILLUSTRATION BY JOE MAGEE

The top nine states—Massachusetts, Hawaii, New Jersey, Maryland, New York, California, Connecticut, Washington, and Colorado—all have populations with generally lower-than-average

“The rankings are intricate, and well-being is influenced by community context. Specifically, within a zip code, environmental context changes. Our goal is to capture well-being of neighborhoods by obtaining comprehensive coverage of individuals residing within a neighborhood to more accurately reflect health and well-being with a high level of precision,” says Kimberly Ann Dukes, BEDAC executive director.



The intersection of

everything

NOW IS THE TIME

BIOSTATISTICS

Advances in every field of public health—
especially interdisciplinary collaborations—
depend on the patterns biostatistics reveal.

BIOSTATISTICS IS AT THE ROOT

of all major advances in public health, helping distinguish key patterns on which to base sound decisions that promote better health and a higher quality of life around the world.

The Department of Biostatistics at the School of Public Health emphasizes cutting-edge research interests and methods, including statistical genetics, clinical trials, and Bayesian statistics. The department offers outstanding educational programs with world-class faculty to train future biostatisticians for a career ranked among the best in job satisfaction and pay.

“Our biostatistics faculty and students are an integral part of multidisciplinary research teams, providing unique training opportunities in applied biostatistics for students,” says Josée Dupuis, professor and chair of biostatistics. “Our excellence in research synergizes with our

“Our biostatistics faculty and students are an integral part of multidisciplinary research teams, providing unique training opportunities in applied biostatistics for students.”

JOSÉE DUPUIS, CHAIR AND
PROFESSOR OF BIOSTATISTICS

strong commitment to teaching and mentoring the next generation of biostatisticians.”

Biostatistics faculty teach courses for the Epidemiology and Biostatistics certificate in the Master of Public Health (MPH) degree program, as well as the Master of Science (MS) in Applied Biostatistics. In 2020, 100 percent of graduates from the MS in Applied Biostatistics program were employed or continuing their education within six months of graduation. The Master of Science (MS) in Biostatistics degree program and Doctor of Philosophy (PhD) in Biostatistics are also jointly administered by the BUSPH Department of Biostatistics and the Department of Mathematics & Statistics at the BU Graduate School of Arts & Sciences.

“Our department is very supportive, collegial, collaborative, and student-centered,” Dupuis says. “I am proud of the impact of the research led and supported by BUSPH biostatisticians and alumni, and of the outstanding educational programs that we offer.”

Initially founded as a joint department with Epidemiology, Biostatistics became an individual department in 1999. Since the beginning, the department’s accomplishments have included the 2012 creation of the L. Adrienne Cupples Award for Excellence in Teaching, Research, and Service in Biostatistics, the founding of the Summer Institute for Research Education in Biostatistics (SIBS), and collaboration with research projects like the Framing-

“We’ve done a lot of impactful research in a variety of areas, specifically with substance use, neurological conditions like Alzheimer’s disease and chronic traumatic encephalopathy (CTE), and infectious diseases.”

JOSÉE DUPUIS, CHAIR AND
PROFESSOR OF BIOSTATISTICS

ham Heart Study, the longest-running cardiovascular health study in the US.

Key department projects include research on Alzheimer’s disease and infectious diseases including HIV, hepatitis C, tuberculosis, and COVID-19.

“We’ve done a lot of impactful research in a variety of areas, specifically with substance use, neurological conditions like Alzheimer’s disease and chronic traumatic encephalopathy (CTE), and infectious diseases,” Dupuis says.

Via research and teaching, Dupuis sees the department expanding their role in key emerging areas of biostatistics that are now arising from the availability of large databases. With the increasing amount of data collected every day, investigators and biostatisticians will be able to answer public health questions using data collected for non-research purposes.

“Because of possible biases in these convenience samples, the role of biostatisticians in applying and developing statistical approaches to extract meaningful information from these large datasets will be of the utmost importance,” Dupuis says. “We anticipate being at the forefront of the critically important training of public health professionals to be savvy data consumers.”

Genes can more than double dementia risk, but good cardiovascular health can halve it, according to a recent School of Public Health and School of Medicine study published in the journal *Neurology*.

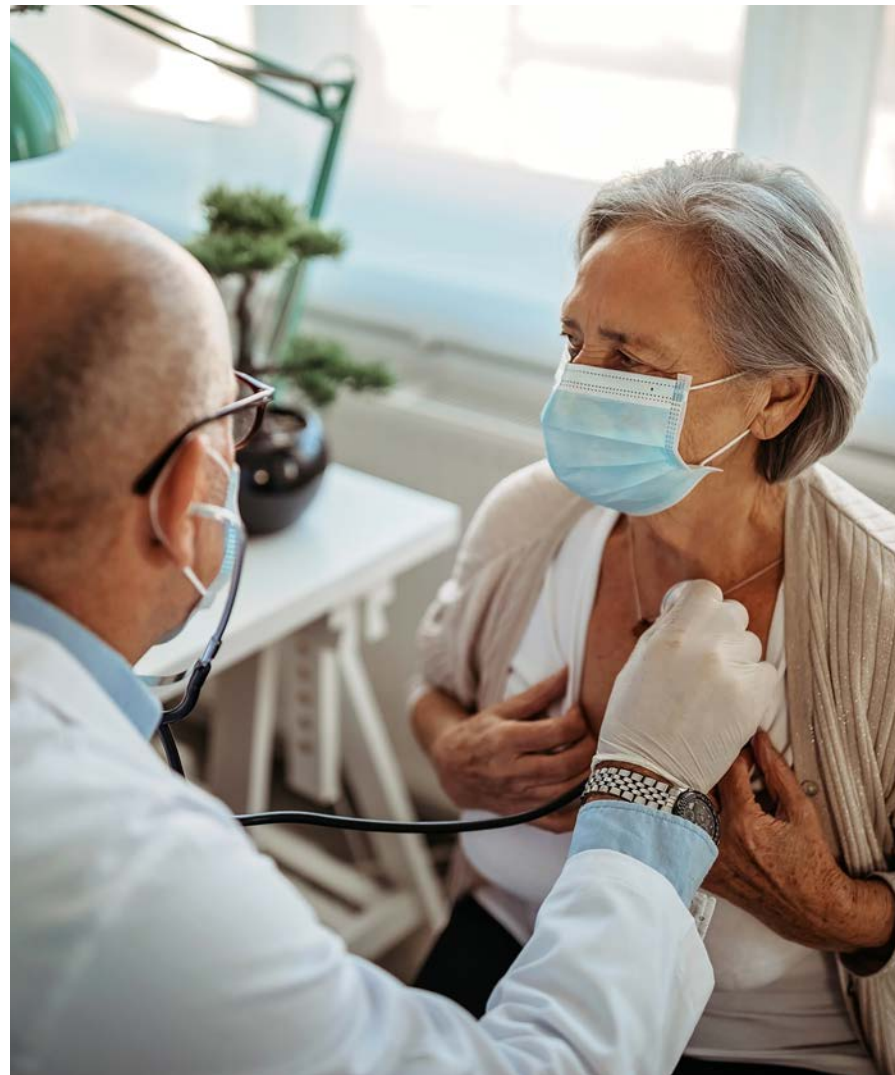
“Just because you have a high genetic risk of dementia doesn’t mean that you can’t lower your risk by adopting a healthier lifestyle,” says study lead author Gina Peloso, assistant professor of biostatistics.

Peloso and colleagues used data from 1,211 participants in the second-generation cohort of the long-running, BU-based Framingham Heart Study (pg. 62).

The researchers found that participants with a high genetic risk score based on several common gene variants were 2.6 times more likely to develop dementia than participants with a low genetic risk score. They also looked separately at the dementia-associated APOE ε4 genotype, found in 10–15 percent of the general population, and found that participants with at least one APOE ε4 allele were 2.3 times more likely to develop dementia than participants without one.

They then scored participants on the American Heart Association’s seven components of cardiovascular health—physical activity, cholesterol, healthy diet, blood pressure, weight, blood glucose, and smoking status—and found that participants with a favorable cardiovascular health score were 55 percent less likely to develop dementia than participants with an unfavorable score.

The researchers did not find any interaction between genetic risk score or APOE ε4 and cardiovascular health, indicating that either can independently add to or subtract from a person’s risk of developing dementia.



RESEARCH

Genes and Cardiovascular Health Both Affect Dementia Risk

EY/GETTY IMAGES

RESEARCH

Irregular Heartbeat Is Less Deadly But More Common

BARCROFT MEDIA/GETTY IMAGES



A first-of-its-kind School of Public Health study shows a decline in deaths related to atrial fibrillation (irregular heartbeat) over the last 45 years.

But the study, published in *The BMJ*, also finds that the increasingly common condition still takes an average of two years off of a person’s life, compared to three years back in the 1970s and early 1980s.

“The prognosis of individuals with atrial fibrillation has improved over time, but atrial fibrillation is still associated with a major gap in life expectancy as compared to individuals without atrial fibrillation,” says study senior author Ludovic Trinquart, associate professor of biostatistics.

Trinquart and colleagues at SPH and in Denmark analyzed health data from three generations of Framingham Heart Study (pg. 62) participants from 1972 to 2015.

In the first period (1972–1985), a participant with atrial fibrillation lived an average of 2.9 fewer years 10 or more years after diagnosis than a comparison participant without atrial fibrillation.

In the second period (1986–2000), the gap narrowed to 2.1 years, and in the third period (2001–2015), to 2.0 years.

“The prognosis of individuals with atrial fibrillation has improved over time, but atrial fibrillation is still associated with a major gap in life expectancy as compared to individuals without atrial fibrillation.”

LUDOVIC TRINQUART, ASSOCIATE PROFESSOR OF BIOSTATISTICS

“Improvement in the excess mortality associated with atrial fibrillation may be explained by continued improvements in early detection, management, and treatment,” Trinquart says. “But the findings of this new study highlight that atrial fibrillation remains a very serious condition. Advances in prevention will be essential to stem the epidemic of atrial fibrillation and reduce its associated mortality.”



HICKS

Clinical associate professor

JACQUELINE

72

■ Taking the mystique—and fear—out of learning biostatistics.

AS JACQUELINE HICKS (SPH'14) was finishing her PhD at SPH, the Department of Biostatistics was looking for a clinical faculty member—a professor whose primary focus would be student instruction, rather than research. Hicks, who had discovered a passion for teaching as a master's student, was perfect for the job. Eight years later, she remains at SPH as a clinical associate professor. "What has made me stay," she says, "is that—compared to other universities' schools of public health—BU places a heavy emphasis on *good teaching*."

Hicks especially enjoys teaching introductory courses like Quantitative Methods for Public Health, a core course required of all Master of Public Health candidates. "It's one of the most feared courses among the MPH students—particularly those who have math or stat phobia," she says. Hicks

enjoys taking those nervous students by the hand and showing them that they are more capable than they realize. "I help them get over that phobia," she says, "and help them understand they can use this knowledge in an everyday setting, not just in public health."

Bala Pillalamarri (SPH'21) took Hicks's quantitative methods course as she was beginning her MPH studies. "Dr. Hicks worked patiently with the students to condense the concepts to a fundamental level," she says, "and she was always available for all our questions." When Pillalamarri later became a teaching assistant for the quantitative methods course, she says, she found herself emulating many of Hicks's teaching techniques. Hicks works primarily with graduate students, but each summer she put her teaching talents to

“BU places a heavy emphasis on *good teaching*.”

JACQUELINE HICKS (SPH'14),
CLINICAL ASSOCIATE PROFESSOR
OF BIOSTATISTICS

work introducing younger students to biostatistics.

She teaches and mentors undergraduate students as co-director of BU's federally funded Summer Institute in Biostatistics (SIBS). The program brings college students with interest in math, statistics, health, and biology to campus for six weeks to introduce them to the field of biostatistics, with the goal of recruiting more people to the profession. It's a highly successful program, with more than 60 percent of participants eventually earning graduate degrees in biostatistics or related fields.

Interacting with SIBS students during the six-week residency is fulfilling, "but what I really enjoy is what comes after," Hicks notes. She often keeps in touch with SIBS participants,

“There’s a lot of funding to get these students into grad school,” she says, “but at that point, the inequities are already there, and they’re really difficult to overcome.”

JACQUELINE HICKS (SPH'14),
CLINICAL ASSOCIATE PROFESSOR
OF BIOSTATISTICS

helping them with graduate school applications and sharing in their academic and professional successes. "So many of them have earned master's degrees and PhDs and are leaders in the field in different academic institutions

and in pharmaceuticals. It's great to see what they've done."

Her summers also include running a biostatistics lab for high schoolers enrolled in Upward Bound, a program designed to support low-income and first-generation college-bound students, many of whom come from minority communities. Hicks got involved with Upward Bound after helping many minority undergraduates prepare for graduate school. "There's a lot of funding to get these students into grad school," she says, "but at that point, the inequities are already there, and they're really difficult to overcome." She hopes that providing extra support to minority students while they are still in high school will help many more of them succeed in college and beyond.

ELIZABETH MULVEY

73

Partner at Crowne & Mulvey LLP



(Elizabeth Mulvey continued)

Data analysis can end gridlock at the intersection of law and statistics.

DURING HER 20 YEARS as a partner at Crowne & Mulvey LLP, Elizabeth Mulvey (SPH'21) has tried hundreds of medical malpractice cases throughout New England. Working with so many people who've been injured by the healthcare system sparked her interest in improving patient safety. "It's better to prevent harm," she says, "than to give people compensation for it."

Mulvey enrolled in the part-time master's in biostatistics program to explore the idea of harnessing data to reduce devastating medical mistakes. "I've certainly never thought that doctors and nurses set out to hurt patients," she says. "But having represented lots of people over the years, it seems like there are particular types of patients and particular situations that tend to have bad outcomes. And I've always wondered, if you had enough data, could you identify risk factors for bad outcomes and perhaps prevent them by making people aware of them?"

Mulvey sees several other intersections between statistics and the law. A current topic of discussion in the field, for example, is structural racism in the legal system and whether minorities are treated differently by the courts. Thirty years ago, she says, there were no definitive ways to answer those questions. "Now, so much data is computerized that it's available for analysis, so there are ways to explore questions like that and to document disparities."

More broadly, she believes, lawyers are sometimes called upon to interpret statistics but aren't always up for the challenge. "Unfortunately, most people went to law school because they weren't

good at math. You show them something with statistics, and they want to head for the hills." But statistics can be powerfully persuasive—to an opponent, to a jury, to a judge. "And so I think lawyers are well served to understand statistics," Mulvey says, so they can use them correctly in their own arguments and identify when they're being misused in someone else's.

"I was always sort of a math kid," Mulvey reflects, but as a high schooler, she didn't see many practical applications for mathematics and so let her interest wane. During her first biostatistics course at SPH—Quantitative Methods for Public Health—her mathematical abilities were immediately obvious, says her instructor, Professor Michael LaValley.

"She did very, *very* well in the class," he says. "She really stood out—and there were some really good students in that class, so to be a standout was quite something." When Mulvey asked

"It's better to prevent harm than to give people compensation for it."

ELIZABETH MULVEY (SPH'21), PARTNER AT CROWNE & MULVEY LLP

to take LaValley's logistic regression course without completing all its prerequisites, he readily agreed, knowing Mulvey would have no problem mastering the material. "And she proved me right," he says.

Mulvey has finished the requirements for her biostatistics degree, but she isn't finished flexing her math muscles. BU's Evergreen program allows area residents age 58 and over to audit classes for a nominal fee, and Mulvey is already planning to use the program to continue taking statistics courses.

BRAD FRANCIS

With financial operations humming, focus turns to streamlining academics.

IN DECEMBER 2019, the Department of Biostatistics hired new administrative director Brad Francis to manage a \$2.8 million operating budget and oversee 40 researchers and their grant portfolios. Within months, the COVID pandemic upended the department's work, putting his administrative expertise to the test. "Brad's creativity and problem-solving skills proved invaluable," says professor and biostatistics department chair Josée Dupuis, "making it possible for us to switch to remote work seamlessly."

Francis came to the department with grant and financial management proficiency he'd acquired in previous positions at Harvard University and the Massachusetts Institute of Technology. Soon after he was hired, he utilized his past experience—and his considerable talent with spreadsheets—to develop entirely new systems and workflows for tracking salary distributions and grant portfolios in the department.

As department chair, Dupuis has found the new systems incredibly useful, especially in identifying faculty

members with the bandwidth to take on new research projects or teaching assignments. A principal investigator herself, she has used the tools to help her decide how to allocate her own time and research funding through projections. "The up-to-date portfolio information," she says, "has allowed me to investigate multiple scenarios to weather the pandemic."

With his new financial systems humming along, Francis is now turning his attention to the academic side of the department, looking for ways to streamline work for the department's academic staff.

He points out that the goal of everything he's done is to make administrative tasks as seamless as possible for students, researchers, and faculty, "so that they can do the best job that they can—and focus on what they're here to focus on."

"[The goal is to help everyone] focus on what they're here to focus on."

BRAD FRANCIS, ADMINISTRATIVE DIRECTOR, DEPARTMENT OF BIOSTATISTICS

Administrative director, Department of Biostatistics



SANDEEP

Distinguished alum creates a culture of quantitative decision making.

IN MARCH 2021, the Department of Biostatistics at the School of Public Health named Sandeep Menon (SPH'03, GRS'10) the first recipient of its newly established Distinguished Alumni Award. For Menon, who is the senior vice president and head of early clinical development at Pfizer, the award is the latest in a series of professional accolades. Last year, for example, the Royal Statistical Society in the United Kingdom honored Menon with its Statistical Excellence in the Pharmaceutical Industry Award, citing his influential leadership and his role in "creating a culture of quantitative decision making." In 2017, he was elected a fellow of the American Statistical Association, a significant honor given to less than one percent of its membership.

Menon says he doesn't believe in basing decisions on just gut instinct. "I believe in data-driven decision making based on science," which has become the norm at Pfizer, he says, and he's

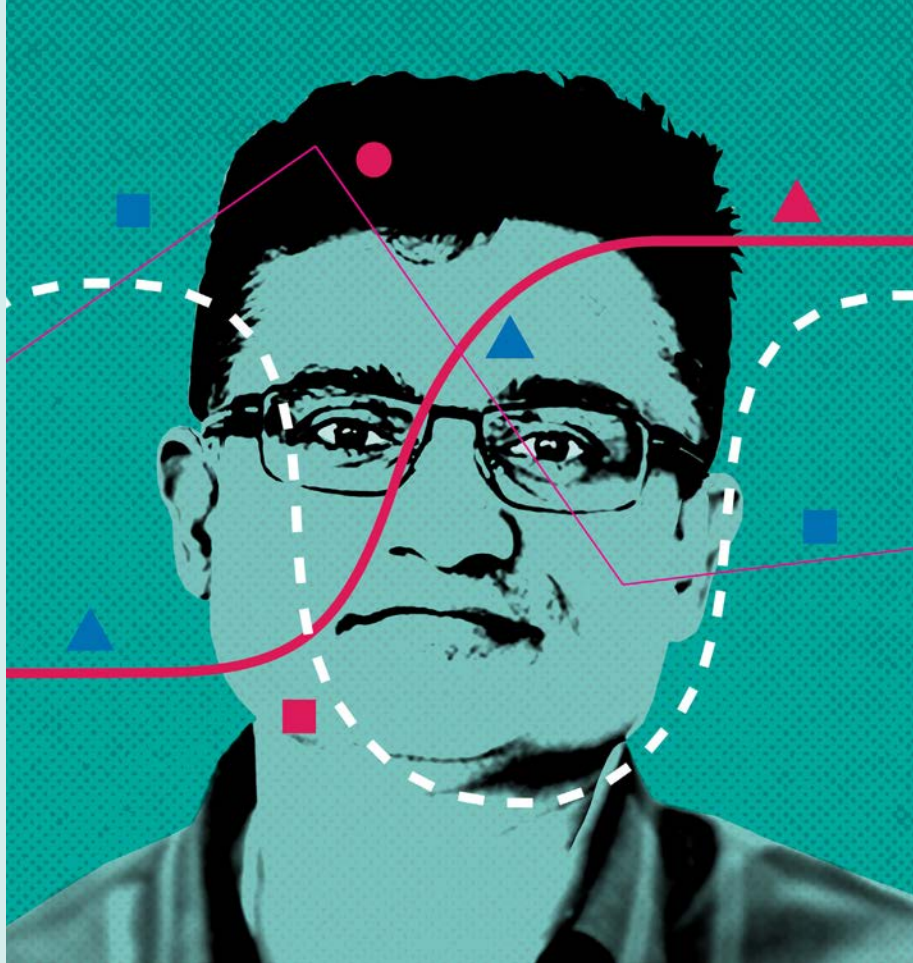
proud to have contributed to that culture, at his own company and across the pharmaceutical industry.

Always a well-rounded student who loved sports and extracurriculars as much as math and science, Menon completed medical school at the top of his class in India in 1999; he later came to SPH with the intention of studying epidemiology. Hearing Professor Timothy Heeren's introductory lecture in biostatistics, however, set him in a new direction. "Tim talked with so much clarity and passion on how medicine and mathematics can be blended," Menon recalls. "That was my game changer. After that first semester, there was no looking back."

"I believe in data-driven decision making based on science."

SANDEEP MENON (SPH'03, GRS'10), SENIOR VICE PRESIDENT AND HEAD OF EARLY CLINICAL DEVELOPMENT AT PFIZER

Another turning point came during his final semester in the Master of Public Health program, when he enrolled in



MENON

Senior vice president and head of early clinical development at Pfizer

Professor Joseph Massaro's class on clinical trials. "I went to Joe's office a couple of times a week, just to talk about clinical trials," he says. "It was amazing how much I learned. I decided, 'This is my career. I will work in clinical research.'"

He went on to earn his PhD in biostatistics at BU, writing his thesis on adaptive designs in clinical trials, which, he explains, allows researchers to use interim data to make adjustments to ongoing trials, giving flexibility and the potential to considerably reduce cost and save time as compared to traditional clinical trial designs.

"Always be that curious student and be brave to try new things."

SANDEEP MENON (SPH'03, GRS'10), SENIOR VICE PRESIDENT AND HEAD OF EARLY CLINICAL DEVELOPMENT AT PFIZER

Menon joined Pfizer in 2010, designing clinical trials as a mid-level biostatistician. He quickly moved up the ranks and today oversees early-stage development of nearly all of Pfizer's drugs and reports directly to the company's president of research and development. Few statisticians reach the rank of senior vice president, and Menon hopes his career path will inspire other statisticians to recognize their potential. "Biostatisticians have the tools to enhance decision making in the healthcare industry," he says.

One of the best ways to keep upgrading your skills is to teach and collaborate on innovative research. Menon worked as a teaching assistant while he was a BU student and has continued lecturing and teaching ever since. He holds adjunct faculty positions at the Indian Institute for Management, Tufts University School of Medicine, and SPH, where he teaches a class on adaptive trial designs and is actively involved in research collaborations. He believes that a passion for learning and for keeping abreast of innovations in the field are key to growing one's career.

1%

IN 2017, SANDEEP MENON WAS ELECTED A FELLOW OF THE AMERICAN STATISTICAL ASSOCIATION, A SIGNIFICANT HONOR GIVEN TO LESS THAN ONE PERCENT OF ITS MEMBERSHIP.

sph by the

RANKING

8

U.S. News & World Report

BEST

graduate schools of public health

APPLICATION NUMBERS

4,244

total applications as of July 2021

STUDENTS

1,308

students as of July 2021

ALUMNI

10,692

alums living in

117

countries*

*Estimate as of July 2021

numbers

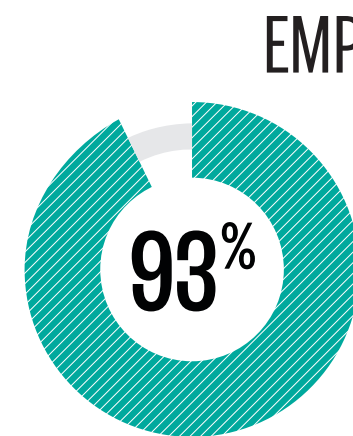
FACULTY

323

STAFF

223

2020 GRADUATE EMPLOYMENT



EMPLOYED
FULL
TIME

or pursuing
advanced
education
within 6
months of
graduation

RESEARCH FUNDING

\$55.7M

awarded in 2020

RESEARCH AWARDS

341

MEDIA MENTIONS



1,449

this year

PEER-REVIEW PUBLICATIONS



1,654

this year

PUBLIC HEALTH CONVERSATIONS



140K+

people engaged in
Public Health Conversations

A world of

difference

NOW IS THE TIME

GLOBAL HEALTH

With public health collaborations from America to Zambia, the Department of Global Health makes a world of difference.

IN ZAMBIA, 80 percent of infant deaths occur after delays in care. In India, children with pneumonia may go undiagnosed in locations where x-rays and radiologists aren't available. In Sub-Saharan Africa, patients with HIV may not receive critical care due to service delivery issues.

Global health study has led to important reductions in illness, injury, and death, but there is still much to do to improve the health of global populations. The faculty, staff, students, and alumni of the Department of Global Health at the School of Public Health are at the forefront of this essential research.

The department is energized by a wide range of expertise among

“Our community thrives on partnerships with collaborators and alumni around the world to ensure that our scholarship, education, and practice is firmly based on, and relevant to, the local context.”

PATRICIA HIBBERD, CHAIR AND PROFESSOR OF GLOBAL HEALTH

faculty, specifically in addressing health challenges in more than 40 countries around the world, says Patricia Hibberd, chair and professor of global health.

“Our community thrives on partnerships with collaborators and alumni around the world to ensure that our scholarship, education, and practice is firmly based on, and relevant to, the local context,” she says.

Established as the Department of International Health in 1991 by William Bicknell, Global Health has been a vital part of SPH for three decades. A founding member of the Consortium of Universities of Global Health, the department has decades-long research collaborations in Zambia, India, and South Africa. Every year, 27 primary faculty members publish more than 200 peer-reviewed articles and oversee approximately \$15 million in awards from the National Institutes of Health, the Bill and Melinda Gates Foundation, USAID, World Bank, WHO, and other funding agencies.

Global Health leads five certificates in the Master of Public Health program in which more than 200 students each year are enrolled, and faculty also teach courses in the Master of Science in Population Health Research and the Doctor of Public Health programs. Many Global Health courses embrace a practice-based approach that allows

“We expect to play a significant role in understanding and generating new knowledge around the evolving epidemic and the expected ones to come.”

PATRICIA HIBBERD, CHAIR AND PROFESSOR OF GLOBAL HEALTH

students to tackle real-world global health problems in collaboration with partnering organizations all over the world.

The department's research and educational efforts are directly relevant to, and make tangible improvements in, people's lives all over the world, Hibberd says.

Achievements include research that provided the evidence base to upgrade the World Health Organization's recommendations for treatment of childhood pneumonia; studies that led to updates in the recommendations for breastfeeding by HIV-infected women; and efforts to improve national policy for HIV surveillance, treatment, and follow-up in several countries in Sub-Saharan Africa. In the last year, numerous global health faculty members have worked to help optimize testing strategies and approaches for COVID-19 vaccination in the US and globally.

Hibberd says future department plans include playing a pivotal role in global strategies for infectious disease mitigation: “COVID has changed the world and changed the department. We expect to play a significant role in understanding and generating new knowledge around the evolving epidemic and the expected ones to come.”

RESEARCH

Early US COVID Deaths May Have Been Undercounted by 36 Percent



“Racial and socioeconomic inequities in US mortality have widened significantly as a result of the COVID pandemic, especially when considering total excess deaths.”

DIELLE LUNDBERG (SPH'19), RESEARCH FELLOW IN THE DEPARTMENT OF GLOBAL HEALTH

The death toll early in the US COVID-19 epidemic was likely much higher than official reports, according to a first-of-its-kind School of Public Health study.

Researchers from SPH, the University of Pennsylvania, and the Robert Wood Johnson Foundation estimated the number of deaths from February through September 2020 to exceed what would be expected in a normal year, or “excess deaths.” For every 100 excess deaths directly attributed to COVID-19, there were another 36, meaning 36 percent of all excess deaths were not directly attributed to COVID-19.

The study found more of these additional deaths in counties with greater income inequality, more non-Hispanic Black residents, less home ownership, and higher population density, indicating a pattern related to socioeconomic disadvantage and structural racism.

“Excess deaths can provide a more robust measure of the total mortality effects of the pandemic compared to direct tallies of COVID deaths,” says study lead author Andrew Stokes, assistant professor of global health at SPH.

Stokes and study co-author Dielle Lundberg (SPH'19), a research fellow in the Department of Global Health, were part of a team that analyzed county-level mortality data from the National Center for Health Statistics (NCHS) for 1,021 counties with 10 or more COVID-19 deaths from February 1 to September 23, 2020. Previous studies have estimated excess deaths at the national and state levels, but this was the first study to examine the question at the county level, allowing the researchers to examine how patterns of excess deaths vary by demographic and structural factors.

LIGHTROCKET/GETTY IMAGES

PETER ROCKERS

Society will reap great benefits from the support and nurture of children.

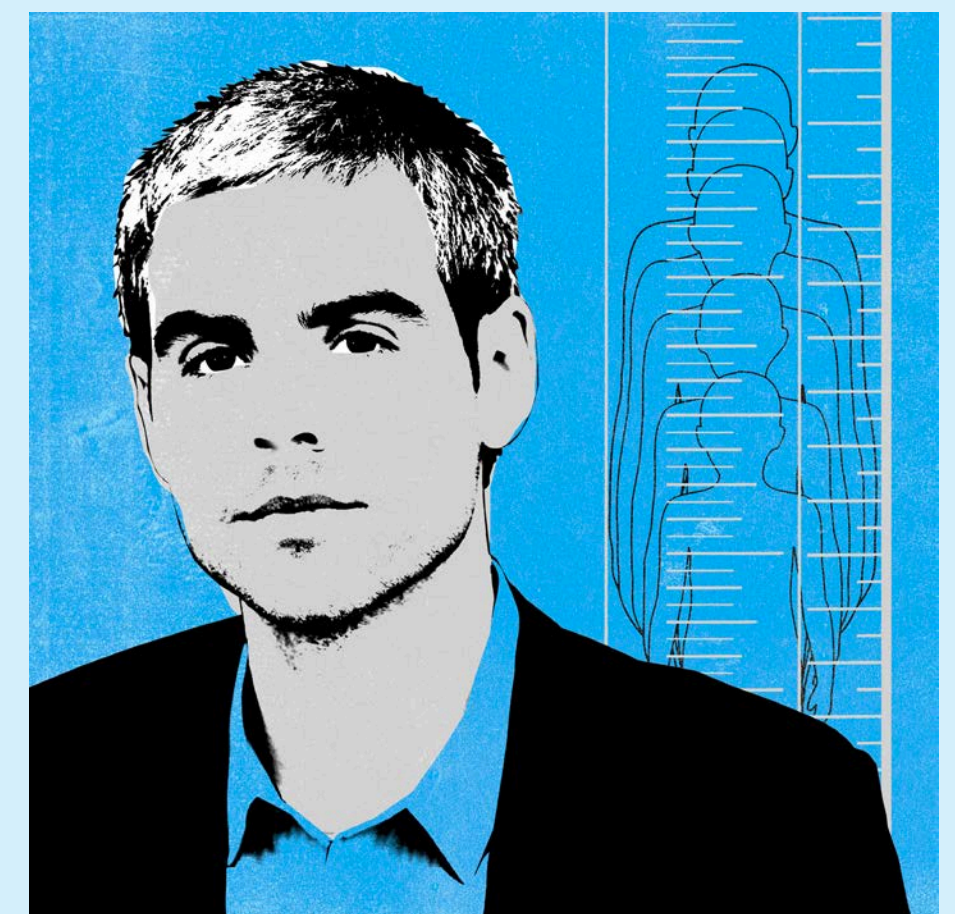
GROWING UP WITH PARENTS

who were teachers, Peter Rockers, assistant professor of global health, has long believed that society has a collective responsibility to support and nurture children.

“The medical model often frames child development from a deficits perspective, but it is important that we begin to frame this issue with a perspective that centers on nurturing children’s capabilities,” he says.

Director of the Global Health Program Design, Monitoring and Evaluation certificate at the School of Public Health, Rockers conducts research primarily focused on the design and evaluation of behavioral and health system interventions to improve early childhood development in low- and middle-income countries. He is co-principal investigator for a study in South Africa evaluating the impact of a comprehensive, at-home parent support intervention delivered by community health workers on children’s neurodevelopment, and works

Assistant professor of global health



in Indonesia and Zambia evaluating the effectiveness of a home-based growth chart intervention that allows parents to track their child’s physical growth and respond with improved nutrition.

Rockers is also a member of the Boston University Faculty Alliance for Early Childhood Well-Being, a cross-disciplinary group of BU faculty members who are collaborating to launch the Institute of Early Childhood Well-Being. The institute began operations at the BU Wheelock College of Education & Human Development in 2021, with the goal of pioneering new approaches for sustaining children’s health and well-being locally and globally.

“The growing global effort focused on child development has great potential to positively impact millions of children whose creativity will benefit society in profound ways,” he says.

“It is important we frame [child development] with a perspective that centers on nurturing children’s capabilities.”

PETER ROCKERS, ASSISTANT PROFESSOR OF GLOBAL HEALTH

THOMAS

Diversity, equity, and inclusion are essential for a globally focused department.

THOMAS LEE, JR. (SPH'19) finished his Master of Public Health (MPH)—which included a practicum advocating for the LGBT community in Botswana—in December 2018, and within months joined the Department of Global Health (DGH) as its academic program administrator.

In June 2019, his conversations with colleague Pawandeep Kaur (SPH'15), DGH's clinical trial director, led the pair to co-found the DGH Diversity & Inclusion Committee to help faculty and staff think critically about interactions with students, one another, and the communities they work with around the world.

"Creating this group was proactive," says Lee. "We weren't reacting to any negative incident or conflict in the department, but rather trying to get ahead of potential conflicts and create a space out of a positive intention."

Lee and Kaur were aware of the school's existing focus on diversity and inclusion and noted increased emphasis

on diversity across the University. As employees of a globally focused department, they wanted opportunities to discuss these issues in a global context.

After several months gauging DGH's needs and interests, the committee's core working group decided on a two-pronged approach. First, they would host monthly discussions for interested faculty and staff; second, they would schedule workshops and trainings led by outside speakers.

"Creating this group was proactive...to get ahead of potential conflicts and create a space out of a positive intention."

THOMAS LEE, JR. (SPH'19), ACADEMIC PROGRAM ADMINISTRATOR, DEPARTMENT OF GLOBAL HEALTH

Lee sees his diversity work not as a distraction from his primary responsibilities, but an extension of them. His role is to improve the experience of students, he says, "and thinking about this topic *does* improve the student experience. It makes our department better."



LEE, JR.

Academic program administrator, Department of Global Health

RUPAL RAMESH SHAH

A unique perspective impacting public health around the globe.

FROM HER HOMETOWN in Kilimanjaro, Tanzania, to the US, South Africa, and Haiti, Rupal Ramesh Shah (SPH'15) has gained a world of experience in global health, and particular expertise in quality improvement and infectious disease prevention and treatment.

In 2018, as a tuberculosis laboratory consultant for Partners in Health, Shah helped launch the first Biosafety Level 3 Laboratory in Haiti's Central Plateau. She later became a grant manager for the nonprofit organization Health Equity International, and along the way, shared numerous recommendations with leaders she worked with on how to improve public health services delivery.

"As an immigrant and a Tanzanian Indian American working in global health, I had unique perspectives and ideas about how we can be changemakers and deliver public health thoughtfully," Shah says. "I realized that I didn't always want to be the person giving the recommendations—someday I wanted to implement them."

That ambition led Shah to become executive director of Konbit Sante,

a nonprofit organization based in Falmouth, Maine, that is dedicated to improving Haiti's healthcare system.

The organization partners with public and private hospitals and clinics in the city of Cap-Haitien to provide training, conduct research, deliver equipment, and improve infrastructure in a region still dealing with the effects of the 2010 earthquake.

"Access to clean drinking water, vaccinations, and holistic nutrition are basic needs that are still missing for many people—in Haiti, and across the globe."

RUPAL RAMESH SHAH (SPH'15), EXECUTIVE DIRECTOR OF KONBIT SANTE

"Access to clean drinking water, vaccinations, and holistic nutrition are basic needs that are still missing for many people—in Haiti, and across the globe," Shah says. "As a lean organization, I take pride in knowing that we are able to do a lot of impactful work on the ground."

Executive director of Konbit Sante



RESEARCH

COVID-19 in Africa Is Severely Underestimated, Zambia Deaths Show

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“We will only end the COVID-19 pandemic if we ensure equitable access to a vaccine. Without the full data picture of the spread of COVID-19 in Africa, it will be impossible to ensure COVID-19 vaccines can get to the people and places that need it most.”

CHRISTOPHER GILL, ASSOCIATE PROFESSOR OF GLOBAL HEALTH

The global community has assumed that Africa somehow “dodged” the COVID-19 pandemic in 2020, but a School of Public Health study in Lusaka, Zambia’s capital, indicates that Africa’s low numbers may simply be due to lack of testing, with the coronavirus actually taking a terrible but invisible toll across the continent.

Published in *The BMJ*, the study finds that over 15 percent—and potentially as many as 19 percent—of recently deceased people arriving at Lusaka’s main morgue over the summer of 2020 tested positive for the coronavirus, peaking at 31 percent in July. Despite most having had COVID symptoms, few were tested before death.

“Our findings cast doubt on the assumption that COVID-19 somehow skipped Africa or has not impacted the continent as heavily,” says study co-author Lawrence Mwananyanda, an adjunct research assistant professor of global health at SPH based in Lusaka. “This study shows that with proper diagnostics and testing, we can begin to identify the scale of COVID-19 in African countries such as Zambia.”

The findings also have important implications for global health decision makers, says study corresponding author Christopher Gill, associate professor of global health. “We will



↑ The back door of the morgue at University Teaching Hospital in Lusaka, Zambia. “BID” stands for “brought in dead.”

only end the COVID-19 pandemic if we ensure equitable access to a vaccine. Without the full data picture of the spread of COVID-19 in Africa, it will be impossible to ensure COVID-19 vaccines can get to the people and places that need it most,” he says.

As of August 23, about 2.7 percent of Zambia’s 18 million residents have been vaccinated, according to the World Health Organization.

An estimated 80 percent of people who die in Lusaka pass through the University Teaching Hospital morgue. From June to September 2020, polymerase chain reaction (PCR) tests on 364 recently deceased people found the coronavirus in 70 of them.

While the majority of COVID-19 deaths in the United States and Europe have been in older adults, most of the deceased people who tested positive in this study were under 60 years old, including seven children. The

researchers say that such a high proportion of pediatric deaths was particularly surprising given how rare COVID-19 deaths in children have been reported elsewhere.

Of the 70 people who tested positive, the researchers had next of kin and/or hospital data on 51, finding that 44 had typical COVID symptoms. But only six (all of whom died in the hospital) had been tested before death.

The researchers were well positioned to track COVID in Zambia. With funding from the Bill & Melinda Gates Foundation, they have been conducting the Zambia Pertussis/RSV Infant Mortality Estimation Study at the University Teaching Hospital morgue in Lusaka since 2017. In that ongoing study, nurses and physician assistants approach families who have lost a child between the ages of four days and six months for consent to conduct a nasal swab of the infant, and to offer grief counseling.

>15%

OVER 15 PERCENT—AND POTENTIALLY AS MANY AS 19 PERCENT—OF RECENTLY DECEASED PEOPLE ARRIVING AT LUSAKA’S MAIN MORGUE OVER THE SUMMER OF 2020 TESTED POSITIVE FOR THE CORONAVIRUS, PEAKING AT 31 PERCENT IN JULY.

Source: *The BMJ*

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This issue of *SPH This Year* is dedicated to the memory of our colleague and friend Professor David Jones, the founding editor in chief of Public Health Post.

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