THIS IS THE CENTURY OF THE CITY. People who for generations have called rural communities home are migrating to urban centers in droves and for the first time in history, more than half of the world’s population lives in a city or metropolis. By 2050, researchers estimate that 70 percent of us will be urban dwellers.
As new and bigger cities take hold worldwide, they are defining public health. Then again, cities always have.

“Urban health is at the root of public health—and vice versa,” says Sandro Galea, MD, DrPH ´03, the Gelman Professor and Chair of Epidemiology. From 1854, when London physician John Snow made the connection between a public water pump and the spread of cholera, to 21st century restrictions on cigarette smoking in New York City, the urban environment has been a vital entry point for understanding health and a laboratory for improving it.

The Mailman School’s mission flows from its urban roots. Since the 1930s, the School has partnered with New York City’s Department of Health and Mental Hygiene and committed itself to research and service to improve the well-being of surrounding communities.

With the pace of urbanization quickening globally, Mailman School scholars have stepped up their own long-standing efforts, pounding the pavement from Dhaka, Bangladesh, to Orange, New Jersey, to reimagine cities for the coming decades. Here, we highlight a few of those projects.
“TREES—A BREATHE OF FRESH AIR,” declares a poster for MillionTreesNYC, an initiative to plant 1 million saplings throughout the Big Apple’s five boroughs. Los Angeles and Shanghai have embraced similar reforestation plans. Indisputably, bulking up the canopy enhances shade and promotes carbon sequestration. But is it doing anything for human health?

The hypothesis that trees decrease air pollution and thus minimize asthma triggers sounds reasonable. But it might not be true, says Gina S. Lovasi, PhD, MPH, assistant professor of Epidemiology. A study she led this year—with New York’s Department of Parks and Recreation and the Department of Health and Mental Hygiene—revealed that increased tree cover didn’t protect children in poor New York communities from developing asthma, and might even have increased their risk of pollen allergies. That doesn’t mean city planners should halt the volunteer shovel brigades, she says, “but it does change the conversation about how we can plan these massive plantings in a way that minimizes unintended consequences.”

The first wave of research in the relatively young field of urban health generated a panoply of theories about how the environment could affect well-being, Lovasi says, but it’s time for researchers to take a critical look at the evidence. Indeed, says Peter A. Muennig, MD, MPH ’98, assistant professor of Health Policy and Management, “a lot of ideas we’ve come up with in public health and urban planning are just based on common sense and correlational studies.” In their disparate projects, both Muennig and Lovasi aim to buttress the field’s foundation with hard data.

In addition to her tree work, Lovasi investigates the link between walkability and obesity. Once again, her data has turned prevailing hypotheses on their head. Urban planners had assumed that people from disadvantaged communities would realize a greater boost in well-being from environmental improvements. In 2009, Lovasi’s team reported exactly the opposite. Conventional measures of walkability, they found, did not predict healthy weight among residents of disadvantaged communities, as they had among those of more affluent ones. In response to such discoveries, Lovasi has broadened her analyses to include environmental factors, including safety and comfort, and to delve deeper into the relationships among such considerations. “The more I look at this,” she says “the more complexity I see.”

For Muennig, an ambitious urban renewal program in China promises the
possibility of untangling such complexity, prospectively. Inspiration struck on a trip to Hong Kong in 2011, when he read a newspaper article about plans for a massive housing lottery in Chongqing, a municipality of 29.2 million people in southwest China. The program will provide rent subsidies to 1 million randomly chosen lower-middle-income families who relocate from dilapidated apartments in neglected neighborhoods into government-financed housing projects designed with the latest in health-promoting features: parks and playgrounds, access to public transport, exercise facilities, neighborhood shops, community centers, and health clinics.

In those lucky lottery winners, Muennig envisions an unprecedented opportunity to test the effect of these urban design elements in real time. “It is so rare that we public health researchers have a chance to actually run an experiment like this,” he says. He pitched his idea to the president of Chongqing University, and a collaboration was born.

If Muennig can secure funding, the team will assess family dynamics, psychological well-being, obesity rates, and biochemical and gene expression markers in 4,500 residents before they move and again five years later. In the process, they mean to tease out the effects on health of quality of housing, access to green spaces, pollution levels, and other features of city living. “We need the data,” says Muennig. “To get it, we’re basically going all the way from gene to society.”
IN THE POPULAR IMAGINATION, slums in the developing world call up visions of society’s most downtrodden, desperate individuals, trapped in the fallout of globalization, constrained to a life of perpetual poverty. But as rapid urbanization propels a torrent of people from rural areas around the world into cities, that vision must shift, says Lynn P. Freedman, JD, MPH ’90, a professor of Population and Family Health. “We need to begin to understand slums as zones of transition,” says Freedman. “These are places where people with aspirations, incredible drive and energy, and hopes for their own future are trying to make a better life.” Their success hinges, she says, on whether local, regional, and national policies lock them into dead-end situations or deploy their momentum for society’s greater good.

Freedman was a lawyer in private practice when she enrolled at the Mailman School in the late 1980s, diving into the growing movement to promote women’s health and combat maternal mortality. Back then, maternal health was a rural problem: The miles separating women in developing countries from medical assistance posed a significant threat to safe childbirth.

With more and more women now residing in urban slums—many within walking distance of a hospital—those geographic statistics have shifted. Yet the problem of access remains. “Maybe it’s the human rights lawyer in me, but addressing problems in public health is a deeply political pursuit,” says Freedman, who directs Mailman’s Averting Maternal Death and Disability (AMDD) Program. “If you scratch the surface deep enough, it’s always about access to and distribution of power and resources.”

Freedman’s team spent much of the past year in Dhaka, the capital of Bangladesh, studying one of the few maternal and newborn health programs designed for slum residents. Of its 15 million residents, some 3.5 million make their homes in Dhaka’s slums; every day, another 1,000 people emigrate from rural parts of the country. Yet officials have refused to extend basic services like sewage and electricity into many of these crowded settlements, convinced that improvements will draw even more migrants.

That leaves nongovernmental organizations to fill the gaps. Among them, the nonprofit BRAC (formerly the Bangladesh Rural Advancement Committee) has found success with a program called Manoshi, which trains community health workers to provide prenatal care in women’s

FLOODS AND OTHER EXTREME WEATHER EVENTS COMMON IN BANGLADESH POSE A PARTICULAR HAZARD IN THE SLUMS, WHICH ARE DISPROPORTIONATELY SITED IN LOW-LYING AREAS.
homes and invites the women to deliver at local birthing centers with ties to nearby hospitals. Women with more serious health concerns get help navigating the overwhelming and often abusive government medical system. Launched in 2007, Manoshi serves more than 6.3 million women in slums throughout Bangladesh; in its first five years of operation, maternal mortality plummeted from 294 per 100,000 births to 135.

BRAC and the Bill and Melinda Gates Foundation, which funds Manoshi, invited Freedman to identify the elements that have contributed the most to the program’s success. “That gave us the chance to think big about slums and to look beyond the health sector to understand a wider set of issues,” she says. Freedman is currently investigating the absence of formal legal protections—access to secure housing or civil services in the slums, for example—and the resulting emergence of an informal, shadow system of social services to meet the basic needs of slum residents.

In addition to her directorship of AMDD, Freedman also serves as a senior adviser to the UN Millennium Project Task Force on Child Health and Maternal Health and was the lead author of the Task Force’s final report *Who’s Got the Power: Transforming Health Systems for Women and Children*. For her, the ongoing analysis has broad relevance.

“Gaining access to public health—even for the world’s poorest and most disenfranchised—speaks to basic questions of one’s entitlement as a citizen.”
THE LAST SEVERAL DECADES have been tough on Orange, N.J.—all 2.2 square miles of it. In the years after the Civil War, thriving hat manufacturers and a brewery made the city a center of industry. Rich and poor, as well as a melting pot of ethnicities and cultures, mingled on Main Street. During the 20th century, however, the situation reversed. Wealthier residents fled; factories failed; the construction of a major highway cleaved the town center. Inequities such as redlining—the federally sanctioned practice of denying mortgage loans in communities deemed “risky” based on race and other factors—cemented divisions based on wealth, class, and race.

The rise and fall of Orange mirrors that of hundreds of communities across the U.S., says Mindy Thompson Fullilove, MD, professor of Clinical Psychiatry and Clinical Sociomedical Sciences. Once set in motion, such divisions cascade. Reversing them is a herculean task. “The sorting of American cities by race and class,” she says, “that’s really the design issue that I think is fundamental to health.”

Fullilove began her career as a community psychiatrist in the early 1980s, working with poor communities of color hit hard by the epidemics of AIDS and crack cocaine. It was clear that the neighborhoods most devastated had already been crushed by destructive urban policies of the 1970s such as planned shrinkage, a scheme that withdrew city services from blighted neighborhoods. With her then-husband, Robert E. Fullilove, EDD, now the Mailman School’s associate dean of community and minority affairs, she launched the School’s Community Research Group in 1992 to understand the cascade that flowed from the loss and displacement such communities experienced.

At a conference in Paris the following year, Fullilove heard a talk by French architect and urbanist Michel Cantal-Dupart. If you want to pump life into an ailing neighborhood, he said, you can’t just address its local problems—you have to reconnect it to the urban ecosystem. That perspective gave Fullilove a new lens through which to see her own work. In 2000, Cantal-Dupart took her on a whirlwind tour of 43 French cities in 56 days. “His approach was to identify how places are deprived of the usual urban equipment”—be it parks, stores, or transportation—“that would otherwise connect them to the flow of the city,” she says.

Fullilove has already extended the concept to urban development efforts in New York, Pittsburgh, and, more recently,
Orange, her hometown. In *Urban Alchemy*, published this spring, she collects insights from her own fieldwork and that of several collaborators to formulate a set of principles to make a cleaved city whole again. The book, she hopes, will serve as a tool for community activists and students of urban health.

Meanwhile, efforts to stem the damage in Orange are hitting their stride with the help of an active community development group that includes Fullilove’s daughter, a community activist. The two have forged a partnership with the honors track of Orange’s public high school to create a walking tour called “Everything you want to know about the American city you can learn in Orange, N.J.,” to showcase the history, promise, and problems of the city.

Revitalizing a city demands celebration to counterbalance the hard work, says Fullilove, who included celebration as the ninth and final principle of urban restoration detailed in *Urban Alchemy*. Making merry to mark progress unites people. The networks among them grow, as does their capacity to affect change and their ability to imagine what’s possible. “Having a city fall apart around you is demoralizing,” Fullilove says. “When we celebrate, it creates a positive feedback loop that helps people work together.”

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In 2007, Fullilove was a cofounder of the University of Orange, a free institution that makes the city its campus, promoting connections within the community and empowering citizens to teach one another.