

Cities are the way of the future.  
Can we make them  
better for everyone?

# EARTH GOES URBAN

**HOW'S THIS FOR A SHIFTING LANDSCAPE:** Only 13 percent of people were urban dwellers at the dawn of the 20th century, but by 2050, 70 percent of the global population will reside in cities. In 1970, the world had two “megacities”—New York and Tokyo—with populations over 10 million, while today there are 23; by 2025, there are expected to be 37. The world’s anticipated population growth in the next few decades, from 7 billion now to around 9 billion in 2050, will take place largely in cities throughout the developing world. Because the vast majority of humanity will soon be urban, the quality of life in our cities is becoming more critical than ever.



Some governments are rushing to harness the benefits of modernity and redefine themselves. In China, the modest fishing town of Shenzhen has transformed in just three decades to become an international industrial behemoth, and in Brazil, the positioning of Sao Paulo as a center of global trade, finance, and technology has spurred the country's middle class to grow by 50 percent since 2003. At the same time, many cities are buckling under the weight of more people than they can sustain, reflecting the natural course of fertility as well as an unprecedented level of rural migration. In Nigeria, the rough-and-tumble commercial and industrial hub of Lagos has by some estimates seen its population double over the past decade and a half to 21 million, and in Bangladesh, about 115,000 people are crammed into every square mile of Dhaka, making it the densest city in the world, with thousands of slums.

The massive strains upon these cities often trigger doomsday scenarios of scarce food, dwindling water, insufficient sanitation, substandard housing, rising poverty, and civil strife, which are all valid fears. But in every corner of the globe, the rise of the city is also being viewed as a moment of enormous promise, an opportunity to actually spread the blessings of modernity while ushering in an era of sustainable, smart growth. At this critical juncture, scholars across disciplines at NYU are at the forefront of determining what makes cities succeed and how they can be equipped to flourish far into the future.

And there's no better place to start than at home, in New York City.

**“A**lthough New York was the epicenter of the financial crash, even I've been surprised by how well it's rebounded,” says Richard Florida, a world-renowned voice on cities and urban affairs. “The diversity of its economy, its people, and its overall resilience made it come out in better shape than it went in.”

The author of *The Rise of the Creative Class* (Basic Books) and co-founder of the Atlantic Cities website, Florida was appointed Global Research Professor at the School of Continuing and Professional Studies last year, and he dove into his new role by helping initiate a major study of New York's economic resilience in the challenging early years of the 21st century. Launched in conjunction with Rosemary Scanlon and Hugh Kelly of NYU's Schack Institute of Real Estate and Mitchell Moss of the Robert F. Wagner Graduate School of Public Service, the study aims to comprehensively analyze the unique factors that have enabled the city to weather major challenges, including 9/11, the 2008 global financial crisis, and Hurricane Sandy.

Much of New York's durability has been credited to its shift from an economy deeply dependent on finance, insurance, and real estate to one increasingly rooted in creative-class and technology jobs, Florida notes. But in addition to appraising these thriving components of the New York economy, he and his collaborators are also scrutinizing the city's growing class divide and analyzing how to reverse it.

“This study is not just about expanding New York's fabulous creative economy,” Florida says. “It's about making sure the benefits of the knowledge-based creative and tech economies are extended to include a much broader segment, especially those who work in the low-wage service economy. We'll be looking at new mechanisms of job creation, upgrading services, transit accessibility. It's incredibly meaningful to me as a student of global cities, as I see New York as an example for other cities around the world as they try to make themselves more competitive, thriving, better places for all residents.”

Implementation is finally taking center stage alongside innovation. That notion spurred Bloomberg Philanthropies to grant \$24 million in 2011 for what it dubbed Innovation Delivery Teams in five U.S. cities: Atlanta, Chicago, Louisville, Memphis, and New Orleans. By hiring and funding dedicated professionals focused on urban innovation and weaving them into the fab-

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ric of each city's municipal leadership right under their mayors, the goal was to expeditiously target top policy issues. A partnership was forged with the Wagner Innovation Labs, headed by Neil Kleiman at the Wagner School, to provide technical assistance and real-time assessments for the initiative.

“I don't think there's any precedent for this amount of money directly funding mayors just to be innovative,” Kleiman says. “When you're elected mayor, it's like being in a shooting gallery. There are so many problems coming so fast, you don't have the bandwidth to be strategic and plan out major government reinventions and reforms. So the idea here was to actually build innovation into the infrastructure, and it's led to an incredible array of concrete changes in every city.”

In Memphis, it's meant a revival of three economically flagging neighborhoods, which the city's innovation delivery team tackled by convening conversations among stakeholders to envision changes and catalyze plans to make them happen. In Chicago, it's meant an effort to cut red tape for small businesses, which led to a prototype for a restaurant start-up program that simplified the bureaucratic requirements for opening a small eatery. And in New Orleans, it's meant a multipronged onslaught to reduce the city's murder rate, which is nearly 10 times the national average. The response has been “startling,” according to New Orleans Mayor Mitch Landrieu.

“The innovation delivery teams are designed to be like Navy Seal teams that move into all the areas of government and have the authority of the mayor to change everything and anything,” Landrieu said in an interview on his YouTube channel. “One question that's always asked of me is: Would I recommend this to other mayors? And I would absolutely recommend it, but they should not do it if they're not going to give the teams the authority to break a lot of glass.”

As Kleiman notes, the initiative is less about the brilliance of the particular ideas than the way they're implemented.

“Innovation is not some big eureka moment,” he says. “It's not like, ‘Wow, we never thought to help small businesses by cutting red tape.’ But the idea is: Can we cut red tape, do it in six months, do it in a way that all the agencies are working tighter and taking the best advantage of technology, and we're simultaneously tapping input from businesses, communities, and various levels of the bureaucracy? The infrastructure to do that doesn't mean 400 people. It means three or four people who work at the highest levels of municipal government being strategic, knowing the data, and building in ownership and commitment from all the relevant agencies. What we've learned is that having that innovation infrastructure is hugely beneficial.”

**P**aul Romer likes to speak of a city itself as a “unit of analysis,” an entity deserving of its own unique field of study. Romer, an economist at the Leonard N. Stern School of Business, directs the Urbanization Project, whose aim is to advance forward-thinking policies to guide the rapid growth of cities.

One of the project's initiatives, Urban Expansion, is an idea pioneered by Romer's colleague, Shlomo Angel, an adjunct professor at the Wagner School, who argues that what cities need is a kind of carefully calculated sprawl, not unlike the Manhattan Commissioners' Plan of 1811, which laid out the city's street grid when most of the island was still farmland. Whereas much urban planning is currently concerned with containing cities, Angel insists that growth is inevitable, and the smarter approach is to prepare for it instead of letting it happen haphazardly.

The other prong of the Urbanization Project is an idea cultivated by Romer to create what are essentially start-up cities on vacant land in de-

veloping countries. These so-called “charter cities” would be guided by principles of reform that allow a country to use a new city to experiment with approaches to improving economic and social life. The idea has not been without critics: Some question the ability of capacity-constrained governments to successfully launch new cities. Others feel that too much foreign involvement in the governance of charter cities would border on neocolonialism. Romer counters that the idea is not about advocating any particular style of governance but rather is a process that provides new strategies to frustrated governments in rapidly urbanizing countries.

Although these two ideas—of guiding sprawl and creating new cities wholesale—may seem divergent, they're linked by a common interest in thinking ahead about what our overwhelmingly urban world will look like in the decades and even centuries to come, and considering the consequences if we don't.

“What could happen is we miss the opportunity to speed up progress and make life so much better far into the future,” Romer says. “People in most government positions rarely have a chance to step back and say, ‘What can we do today that will make a difference in 20 or 50 years?’ But once you outline

what enormous benefits it will have in the future, officials are willing to take these steps.”

Romer is bringing this same emphasis on broad foresight to the new Marron Institute on Cities and the Urban Environment, of which he became the interim director earlier this year. The institute, which was launched last winter with a \$40 million gift from Donald Marron, chairman of Lightyear Capital, is gearing up to become a leading-edge interdisciplinary vehicle for exploring what makes cities livable and successful.

By helping to connect scholars at the university and beyond, the institute intends to push the discussion about cities forward, to initiate its own contributions, and to link researchers with public-policy makers to advance new ideas. With global urbanization rapidly under way, the timing for such an initiative could not be better, according to Romer.

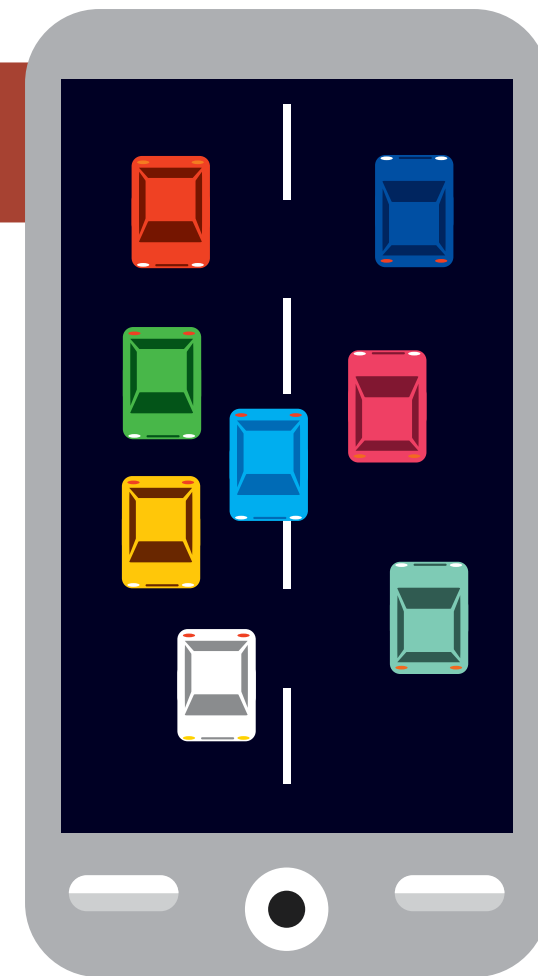
“Urbanization is something that has a beginning and an end,” he says. “What's important is to use the window we've got right now to influence how it takes place, because we're going to live forever with the cities we've built”

—Jennifer Bleyer

## HOW WE'LL GET AROUND

**O**ne recent rainy weekday afternoon, John Falcocchio, a veteran professor of transportation planning and engineering at NYU-Poly, found himself among a snarl of cars inching down Lexington Avenue. Because the right lane was reserved for buses, and the left curb was packed with parked cars, commercial vehicles stopping to unload had brought traffic in the moving lane to a halt. While a jaded New Yorker might dismiss this as inevitable, and an idealist dream of a future in which cars and trucks would be banned from the avenue, Falcocchio, who has decades of experience managing city transportation systems, imagined a subtler solution: “Is it really a good policy to allow people to park at rush hour on the curb?” he asked.

Mundane municipal matters, like parking policy, might not always figure into ambitious plans for the transportation of the future, but Falcocchio insists that minute adjustments can enable more efficient use of our existing roads and rails—and this will be essential as we prepare an already stressed transit system for continued population growth. New technologies that collect data from particular bottlenecks and congestion areas will point the way to solutions: Falcocchio mentions the Spanish port city of Santander, which has been outfitted with 12,000 sensors on everything from its buses to its parking spaces. Digital street signs indicate to drivers the number of available parking spots on each block, preventing the speculative circling that would otherwise clog side streets.



The success of even an apparently low-tech strategy like congestion pricing in New York, Falcocchio says, would depend on advanced statistical modeling to predict the behavior of commuters who'd be priced out of their cars. “What happens to them? Are they going to the transit system?” he asks. “Is there room to handle that?”

One researcher poised to help address these kinds of questions is Claudio Silva, who's been working with the New York City Taxi and Limousine Commission's records of the 540 million taxi trips taken during 2009, 2011, and 2012. Silva, a computer scientist at the new Center for Urban Science and Progress, a public-private research center launched jointly by New York City, NYU, and a consortium of universities and enterprises, envisions a not-too-

distant future in which such a trove of information could be put to work not just for cab drivers and city planners, but individual urban dwellers as well.

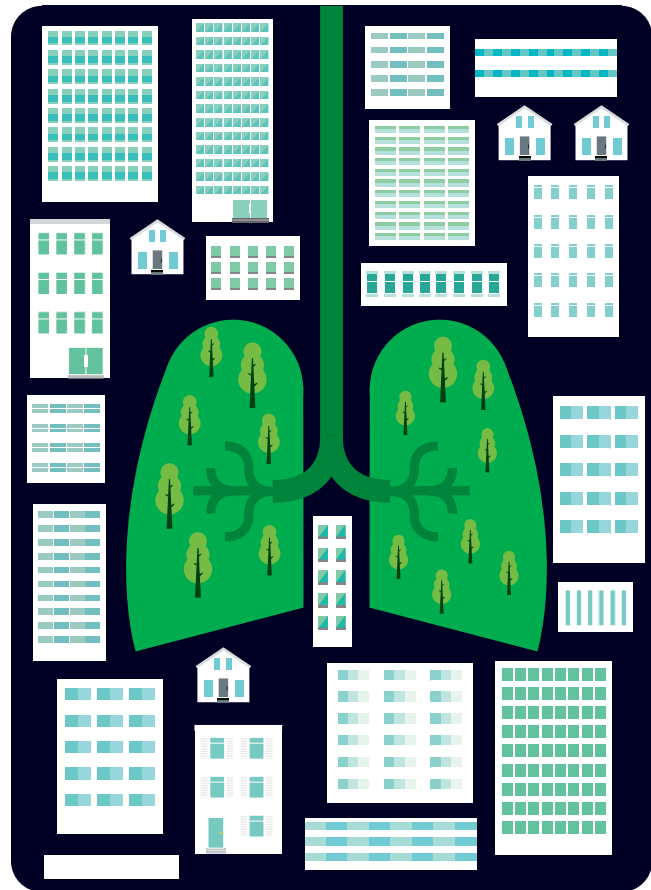
"In cities, one of the big challenges is finding the optimal way to use multiple modes of transportation," Silva says. He imagines a smartphone app that, like a much more advanced Google Maps, could judge how fast you walked, use real-time MTA logs to get you to a subway station just as a train arrived, and have a cab waiting for you when you got out. Much of the data needed to create such an app, Silva says, already exists—housed in city records and in the GPS-enabled mobile phones and digital pedometers we carry. Bikes outfitted with accelerometers could tell city officials about road conditions. Your GPS device, if allowed to communicate with those around it, could direct you to avoid crowded sidewalks—or, Silva suggests, lead you away from danger in an emergency.

Collecting this data from the various companies and agencies that own it and putting it to work in user-friendly programs will be an "immense amount of work" for computer scientists and transportation officials alike, Silva says. Another obstacle is a very real concern about privacy. When it comes to data about people's whereabouts, it will take time to reach consensus about what "should be available and what should not be available." In the meantime, as computer scientists work to develop reliable methods for "anonymizing" data, they might rely upon volunteers who "donate" their personal information for research.

"Nobody actually wants to own data about particular people moving around," Silva says. Ideally, the transportation planners of the future would know "where you are" without needing to know "who you are."

—Eileen Reynolds

## HOW WE'LL BREATHE EASY



**W**hen Tae Hong Park takes his 4-year-old twins on an outing in New York City, he checks a living, shifting sonic diagram to see where the quietest spots are. As a pioneer in mapping sound—he is associate professor of music technology and composition at NYU's Steinhardt School of Culture, Education, and Human Development—Park sees the city of the future as one in which we can seek out, or avoid, aural landscapes. "In extreme cases, high levels of noise can lead to hearing loss," Park says, "and studies have also shown noise affecting hypertension and stress levels."

Measuring noise and archiving it for patterns are at the heart of Park's new venture, Citygram, a partnership between the Steinhardt School and the California Institute of the Arts (CalArts) that allows the public to see the acoustic energy of cities on digital maps. The project's first iteration, "Citygram One: Visualizing Urban Acoustic Ecology," received a \$59,000 Google Research Award. NYU and CalArts campuses are the test models.

In Park's vision, city dwellers will carry personal sensors to take stock of noise concerns and meet them head-on, at the community level, too. Noise is just a start. "I am quite confident that if we can measure it, visualize, store its data, we will be able to better address not just noise levels but all types of pollution, including electromagnetic, smell, humidity, and light pollution," Park says.

In the future, that knowledge will come in a highly individual way, through personal monitoring—the ability to use smartphones or inexpensive monitors to detect environmental hazards, says George Thurston, director of the Program in Exposure Assessment and Human Health Effects at the Department of Environmental Medicine at the NYU School of Medicine. These devices are central to what Thurston calls "crowd-sourcing" of environmental awareness. "As people start learning how bad pollution is, using the Internet to spread the knowledge, it precipitates action," he explains. "People can make more efficient and better decisions."

A case in point, he says, is London's famous "pea soup fog." Once people learned that it was particles of coal surrounded by condensation, they moved toward cleaner fuels, from coal burning to heating oil to natural gas. There's no more London fog. Auto fuels have seen a similar evolution, moving from leaded to unleaded gasoline, and now to hybrids and even electric cars. (Thanks in part to research conducted at NYU about the dangers of leaded gasoline on children's health.)

"The developing world cities," Thurston says, "are now facing what New York City faced just 50 to 100 years ago with respect to air and water pollution." And with its waterways and air cleaner than they have been in ages, New York may serve as an example that "these can be achieved at the same time that economic growth occurs. We are a species good at adapting things," Thurston says. "But knowledge, in this case, is power."

Awareness is crucial to keeping our cities clean, too, says Robin Nagle, clinical associate professor and director of NYU's John W. Draper Program. With each American generating, on average, between 4.5 and 8 pounds of garbage a day, personal responsibility represents the start of great strides in areas such as recycling. But that's hardly enough. "Even if I lived a zero-waste life and didn't generate discards of any kind," she says, "it'd be like trying to turn the ocean pink by using an eyedropper."

With that in mind, Nagle implores the public to acknowledge the valuable work of the people who help keep our cities clean, which she explores in her book, *Picking Up: On the Streets and Behind the Trucks With the San-*

*itation Workers of New York City* (Farrar, Straus and Giroux). "As we think about how to change the system, we have to think about the labor and the people who will do it," she says.

The goal is to make those loads lighter, for everyone's sake. Recyclable plastics, electronics, and automobile parts are just some of the products that cities need to pressure manufacturers to consider. It's cities that can bring market pressure to bear, argues Nagle, who also speaks of "reuse" or "repurposing" centers for items that, formerly, would have been "discards."

City-wide composting is also part of her vision of an environmental "utopia"—a onetime fantasy that's turning real since Mayor Michael Bloomberg announced an ambitious plan in June to start collecting food scraps across the five boroughs. Even better, the early pilot programs have shown an unexpectedly high level of participation. "If we have the political will," she says, "we could recalibrate the whole system."  
—Roy Hoffman

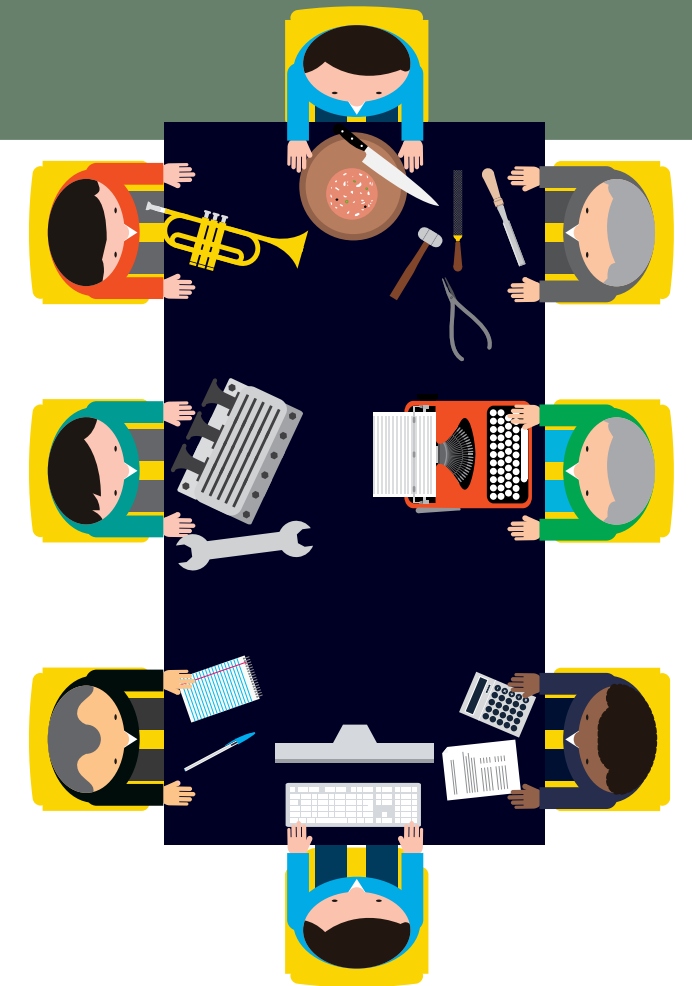
## HOW WE'LL MAKE ENDS MEET

**"I**f you're creative, young, and energetic, you come to New York," says Mitchell Moss, director of NYU Wagner's Rudin Center for Transportation Policy and Management. "You don't go to Schenectady." It's an axiom almost as old as the Big Apple itself, which has long lured strivers seeking lucrative career opportunities. And yet research by Moss and master of urban planning candidate Carson Qing (WAG '13) suggests that you may no longer need to live in New York City—or even in its storied suburbs—to work here.

The Rudin team has discovered the rise of "supercommuting"—living in one county and traveling more than 60 miles to work in another. Studying census data, they observed the trend in 10 of the nation's largest metropolitan areas. If the phenomenon continues, our future coworkers will be more likely to live in Dallas and work in Houston, or to make money in New York and spend it on a house in the affordable suburbs of Philadelphia.

At the same time, Moss has observed the opposite: people making an effort to live very close to where they work—a migration that has fueled the revitalization of once-abandoned neighborhoods in Brooklyn, Hoboken, and Jersey City. But he sees both trends as evidence of the same broad cultural shift: "The traditional organization of work, in which you commute from the suburbs to a central city, is no longer the only way in which people function," he says.

That reorganization includes not just where we're working, but what we're doing to make money, according to Arun Sundararajan, a professor of



information, operations, and management sciences at the Leonard N. Stern School of Business, whose research interests include peer economies and the digital technologies that shape them.

"The fraction of people who are going to call themselves freelancers, or who will be doing what we traditionally would have called freelancing, has been expanding rapidly," he says, thanks in part to online marketplaces, such as the arts-and-crafts hub Etsy and TaskRabbit, a virtual staffing agency of 11,000 carefully vetted would-be personal assistants for hire for individual errands, including dog walking and furniture assembly.

Income needn't stop at odd jobs, either. With Airbnb, you can turn your

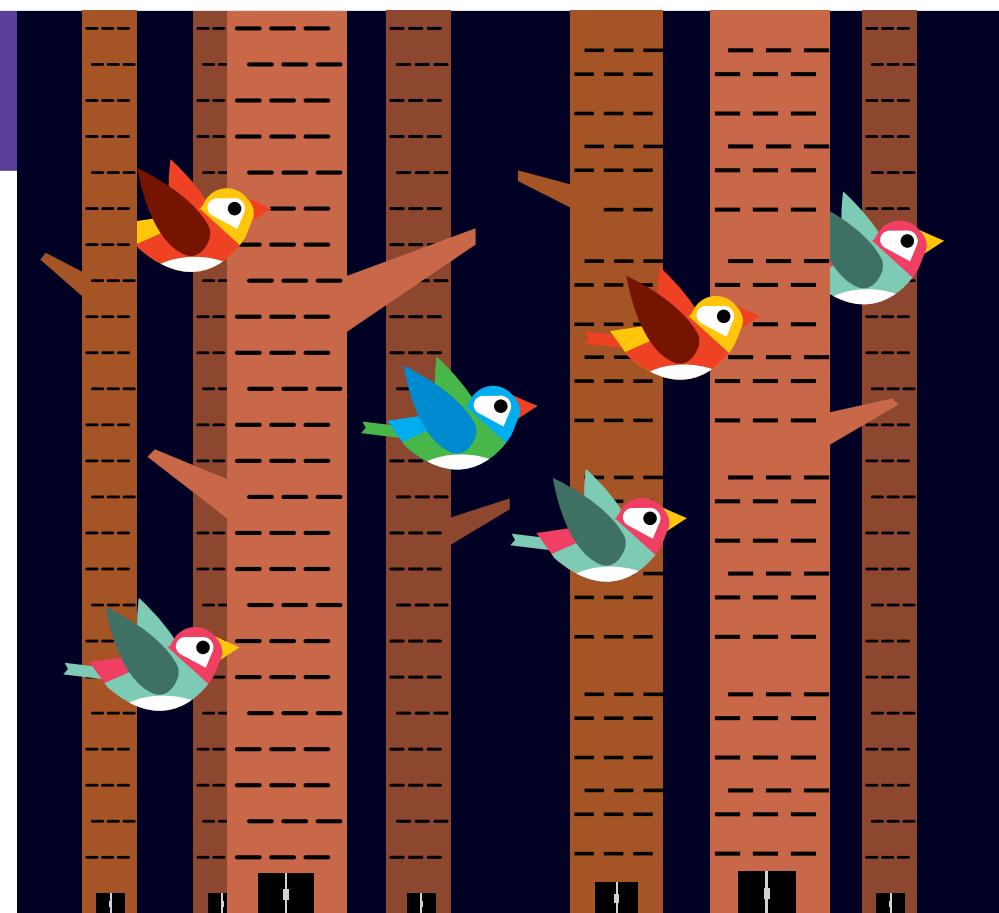
home into a property that generates revenue while you're on vacation. Peer-to-peer car-sharing sites like Sidecar can earn pocket change for drivers who give rides to their car-less peers. A site called SnapGoods allows you to rent out useful possessions—a chainsaw, say, or a tennis racquet—to neighbors who don't own them. Because of the logistics of sharing, densely populated areas are perfect markets for such services, so expect them to take off as cities grow. "In a city, you don't have 10,000 square feet to fill with everything you could ever possibly need, so the idea of getting something only when you need it is appealing," Sundararajan explains.

But peer marketplaces face some legal hurdles: Sidecar recently came under fire by New York City's Taxi and Limousine Commission, and a panel recently ruled Airbnb does not violate NYC's hotel law. "It will be a painful process," Sundararajan says, but he predicts that as increasing numbers of city dwellers express their desire to make use of such services, regulatory policy

will have to catch up.

That's not to say that in the future we'll all get rich renting out vacuum cleaners and spare bedrooms. Sundararajan notes that peer marketplaces are likely to remain most valuable to part-time workers looking to supplement more traditional sources of income. But the new ability to piece together a living may be changing fundamental assumptions about work life. The old idea about retirement, for example—"I'm going to work for 10 hours a day until I'm a certain age, and then I'm going to stop"—stands to become obsolete.

But will virtual marketplaces, ever-growing commutes, and technologies that allow us to work remotely spell the death of the office building? Moss says not to count on it, pointing to the fleet of buses that shuttle workers to Google's Mountain View, California, campus each day. "People want to be near people," he says—and that's not likely to change. —E.R.



## HOW WE'LL COHABIT

number of single-parent homes.

This transition has, in turn, undermined the justification for the traditional urban/suburban split, sociology professor Kathleen Gerson says. Proximity to work was less important when it was just dad shuttling back and forth, but with both parents—or the only parent—working, some now find it more important to live close to the office in a family-friendly urban setting. "It makes no sense to separate home and work the way suburbs were once designed to do," Gerson says. "That's why even the suburbs will start to look more like cities."

Families, of course, are not the only ones settling in cities. Many retirees are also choosing to forgo shuffleboard in the Sunbelt for the cultural attractions and conveniences of city life. Add to them the regular injection of young people in search of work and a mate (or two), as well as immigrants from pretty much everywhere, and the stresses on housing, schools, and infrastructure mount quickly.

But most American cities are not equipped to handle this change, Ger-

**F**ifty years ago, *The Jetsons* introduced Americans to a model version of family life in 2063, a future in which dad's workday was only an hour long and mom's chores were handled by a robotic maid. While this technoutopia—with meals prepared at the press of a button and quick trips to distant planets—hasn't quite materialized (yet), many of its gadgets are within technological reach. It's the show's social structure that now looks quaint.

The nuclear family exemplified by George, Jane, Judy, and Elroy is eroding. The Organisation for Economic Co-operation and Development recently completed a study examining how this unit has transformed since the 1960s, and how it might continue to evolve over the next generation. An aging population, lower birth rates, and rising divorce rates have dramatically shrunk the size of the average household and increased the

son notes. Even prosperous cities—such as Seattle and San Francisco—are actively losing families despite continuing to top lists of the most desirable places to live. "The city has to evolve to retain families who don't want to move to the suburbs," says Arthur L. Carter Journalism Institute professor Suketu Mehta. A native of Bombay but raised in Jackson Heights (his current subject of study), Mehta (WSUC '84) says that humans can stand to have a little less space than the mid-20th-century American ideal. "I know immigrants to the city will continue to have large families—they're not afraid of density," Mehta explains.

As a result, many "magnet" cities find themselves becoming economically bifurcated between those who can afford even modest urban real estate and all the city's benefits, and those who cannot. San Francisco recently began offering universal preschool and after-school programs, as well as a working-family tax credit to help stanch the outflow of its middle-class families. But it's an effort that more cities will have to make in the coming decades. As Mehta says: "A city without children is like a forest without songbirds."

—John Bringardner

## HOW WE'LL GET EQUAL

**I**t's no secret that cities generate wealth and opportunity. As Patrick Lamson-Hall, a research scholar at NYU Stern's Urbanization Project, puts it, "Nobody really gets poorer when a society is urbanized." Building a new city is a tremendous economic project, with jobs and whole industries created to support the construction of essentials such as roads and housing. And compared to their rural counterparts, city dwellers enjoy greater access to health care and education, significantly higher incomes, and even longer life expectancies. But what can happen, when governments and city officials fail to invest that newfound wealth in the future, Lamson-Hall (WAG '13) cautions, is that the poor get poorer relative to the rich. "Urbanization is a great force for improving lives," he says. "But it doesn't do that equally across the board."

The poorest workers in China's most rapidly urbanizing areas are currently seeing their incomes double every two to three years. That's an impressive windfall, until you consider that incomes for the highest earners in those societies are doubling every two to three months. And in cities with breakneck population growth such as Mumbai and Lagos, residents packed into informal settlements with no access to water, sewer, or ambulance services contend with pollution caused by the unceasing snarl of traffic.

Because the cost of providing basic infrastructure to an area that wasn't planned is nine times higher than the cost of providing it to an area that was, a city that fails to spend at the start risks creating isolated urban pockets doomed to long-term cycles of poverty.

But you don't have to look to the developing world to find such pockets, NYU sociologist Patrick Sharkey argues. The author of *Stuck in Place: Urban Neighborhoods and the End of Progress Toward Racial Equality* (University of Chicago Press), he has studied the informal strategies and institutional mechanisms that have kept African-Americans isolated in the most disadvantaged sections of America's cities, decades after the passage of the Fair Housing Act in 1968, at the height of the civil rights era.

His findings are startling: "The families we see in very disadvantaged neighborhoods are the same ones we've seen over multiple generations,"



Sharkey explains. He calculates that 72 percent of African-American adults living in the poorest, most segregated urban neighborhoods were raised by parents who grew up in similar neighborhoods a generation earlier. If the patterns do not change, the same families who lived in the ghetto in 1970 will still be there in 2070.

"It's the cumulative exposure to neighborhoods with low-quality institutions, high stressors, fewer public spaces, and more pollution that seems to have substantial consequences on kids' developmental trajectories," Sharkey says. Breaking the cycle will require what he calls a "durable policy of investment" in neighborhoods that have suffered decades of governmental neglect—an effort that would involve federal efforts to end exclusionary zoning, expand affordable public housing, and strengthen connections between police and community groups.

It's an investment worth making, as true integration—with people of all races and income levels living together in close quarters—is the essential democratic promise of urban life. "When we're in close contact with each other," Lamson-Hall says, "there's more turmoil, more churn, and people are more aware of inequality and of the possibilities of what life can look like."

—E.R. and R.H.