Brooklyn

Kings County looks good in violet

LONG BEFORE celebrities named their kids after a certain New York City borough and *Girls* and *Broad City* set their action there, NYU's then financially strapped Bronx–based campus, University Heights, was sold and the College of Engineering and Science was merged into the Polytechnic Institute of Brooklyn. The year was 1973, and the resulting school became the Polytechnic Institute of New York, and engineering suddenly disappeared from NYU's portfolio. There were many reasons—crime, isolation—why parts of New York City (Brooklyn among them) weren't hot property. That reality was the believable plot driver in *Saturday Night Fever*, as John Travolta's character, Tony Manero, sought to escape his bridge-and-tunnel life.

That was then. One reacquisition of the merged institute, several name changes, and many groundbreakings later, NYU's downtown Brooklyn campus is at the heart of what has become the East Coast's version of Silicon Valley (though unlike the original, it's also the hipster epicenter of the universe).

"NYU has had this uncanny ability throughout its history to be in the right place at the right time," says Lynne Brown, senior vice president for university relations and public affairs. She chalks up NYU's presence in Brooklyn to "either strategic serendipity or serendipitous strategy."

The Great East River Crossing began about a dozen years ago, when the university, long since back on its financial feet, began to regret not having an engineering school. That was the strategic aspect. "Without an engineering base, some of the largest pots of research money were inaccessible to us," says Brown. "But creating an engineering school from whole cloth is incredibly difficult." Polytechnic was an obvious choice, but there were several years of stop-and-start talks before the two institutions agreed to affiliate in 2008. (The formal legal merger took place in 2014.)

Meanwhile, says Brown, Brooklyn had rapidly morphed into "this quite exciting hub of cool, creative people." NYU's footprint now extends to Brooklyn Heights, the Brooklyn Navy Yard, Downtown, DUMBO, and Sunset Park.

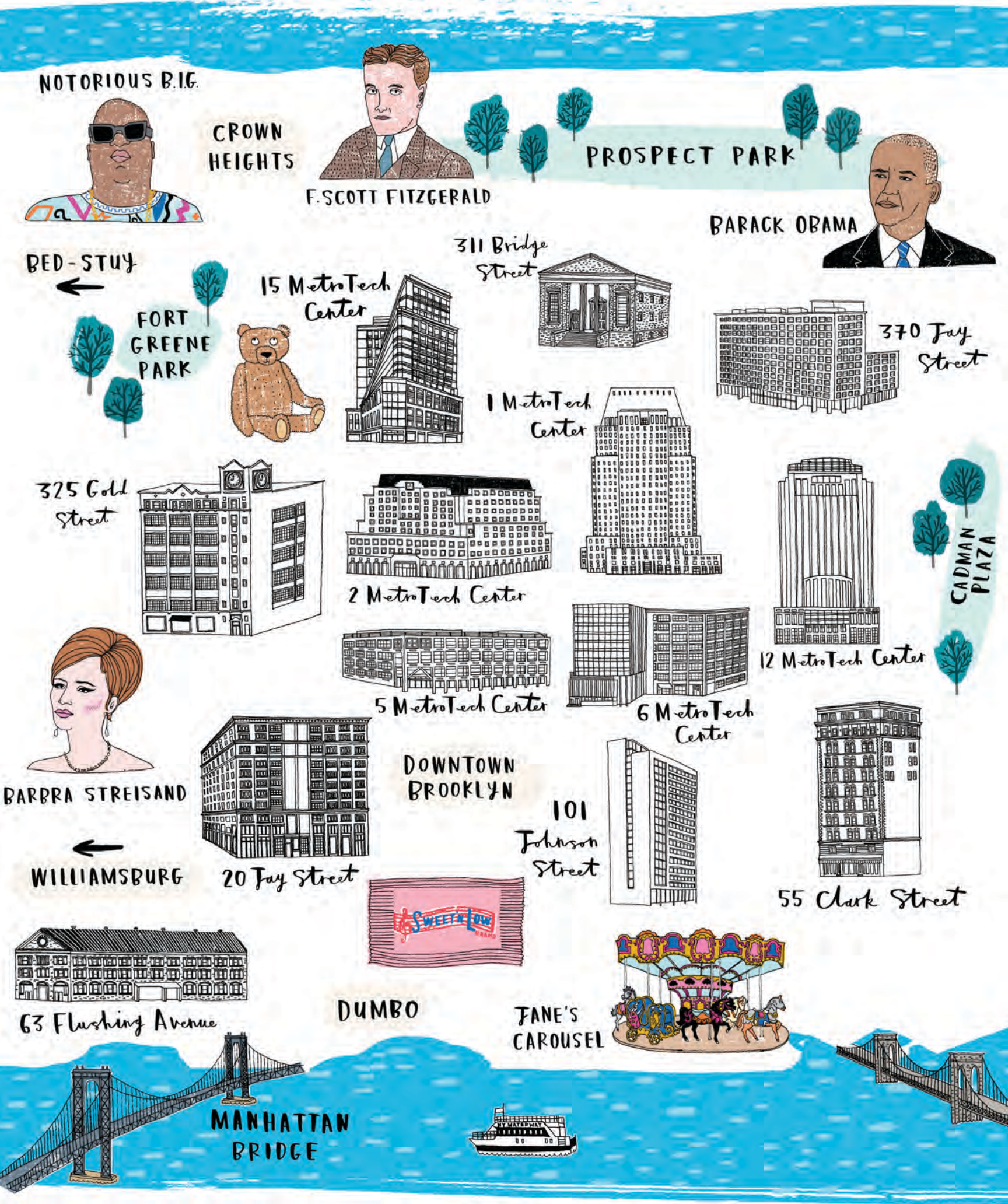
With the Tandon School of Engineering serving as the technological hub of the downtown campus, it was particularly serendipitous when, in 2011, New York City decided to turn over underused city properties to institutions that promised to invest in the applied sciences. NYU bid on and, in 2012, won the former MTA headquarters at 370 Jay Street—abandoned for more than a decade—and began the planning to turn 500,000 square feet into a new academic hub for the university.

Thus began the cross-pollination that has made the campus a place where engineering intersects with urban science, data analytics, gaming, cybersecurity, wireless technology, entrepreneurship, media arts, and recorded music. "It's like a petri dish, this swirl of talent," says Brown. "We now have this amazing cluster.... [The Tandon folks] realize that engineering more and more calls on artistic and creative expression, and the artists and creative people realize more and more that what they want to do has a technological basis."

As with all great endeavors, NYU's presence is kinetic and always evolving. Come explore all the points of NYU's place in the Brooklyn universe.

→

BY LINDSY VAN GELDER Illustrations by Charlotte Farmer

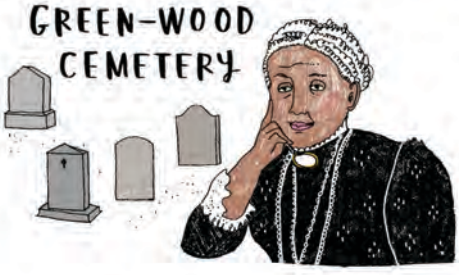

NOTORIOUS B.I.G.
CROWN HEIGHTS
F. SCOTT FITZGERALD
PROSPECT PARK
BARACK OBAMA
BED-STUY
FORT GREENE PARK
15 MetroTech Center
311 Bridge Street
370 Jay Street
1 MetroTech Center
325 Gold Street
2 MetroTech Center
CADMAN PLAZA
12 MetroTech Center
5 MetroTech Center
6 MetroTech Center
BARBRA STREISAND
DOWNTOWN BROOKLYN
101 Johnson Street
WILLIAMSBURG
20 Jay Street
55 Clark Street
SWEETN LOW
63 Flushing Avenue
DUMBO
JANE'S CAROUSEL
MANHATTAN BRIDGE

CONEY ISLAND

150 55th Street

NYU LANGONE HOSPITAL - BROOKLYN

GREEN-WOOD CEMETERY



SUSAN MCKINNEY-STEWARD

SUNSET PARK

PARK SLOPE

87 35th Street

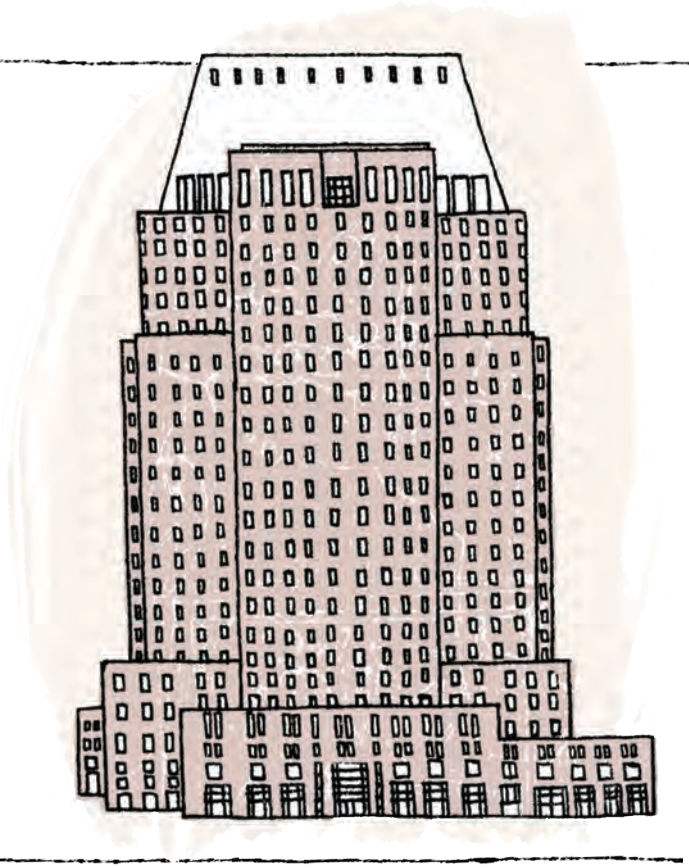
RED HOOK

1 Pierrepont Plaza

ELVIS PRESLEY

* PLEASE NOTE: We've taken a bit of liberty with building placement

BROOKLYN BRIDGE



1 MetroTech Center

HOME TO: NYU IT

AS WELL AS...

THE TANDON DEAN

JELENA KOVAČEVIĆ previously headed up the Department of Electrical and Computer Engineering at Carnegie-Mellon University. We asked Kovačević, the new dean as of mid-August, about her vision for the Tandon School of Engineering.

Q: What do you want to do at Tandon?

A: I want Tandon to keep on its momentous rise. It's gone through some amazing transformations. Research expenditures have doubled over the past five years, to $48 million. It has risen through the *US News & World Report* rankings from 80 to 41. The class that entered in 2017 was 20 percent minorities and more than 40 percent first generation to attend college. And the current incoming class is 43 percent women. It takes huge financial aid to be able to support such diversity. I would like for this gritty, scrappy, Brooklyn-based school to become the top research institution that gives back.

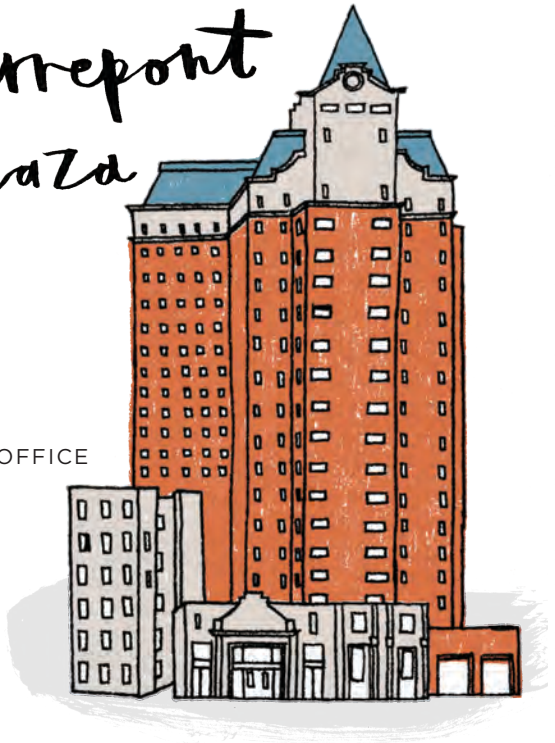
Q: You're the first female dean since the engineering school was founded in 1854, and that's kind of a big deal.

A: When I was growing up in Yugoslavia, that was not the case—it just was not that unusual to see women leaders. I want little girls, but also little boys and kids of all races, to look at me and say they can grow up to be the dean, or anything they dream of.

Q: Were you always a math nerd?

A: Yes! I've been a math nerd for as long as I can remember, and I'm proud of it. But I liked a bunch of other things like languages and history. I went to a music school in parallel to my regular school. In fact, I believe that math and music (and arts) are intimately connected. Mathematicians talk about "beautiful proofs" and "beautiful equations" and think visually. I think today is a great time to connect, because technology can be used to impact almost any area. A great example is 370 Jay Street [see page 37], which is going to house programs from Tandon as well as Steinhardt and Tisch.

1 Pierrepont Plaza

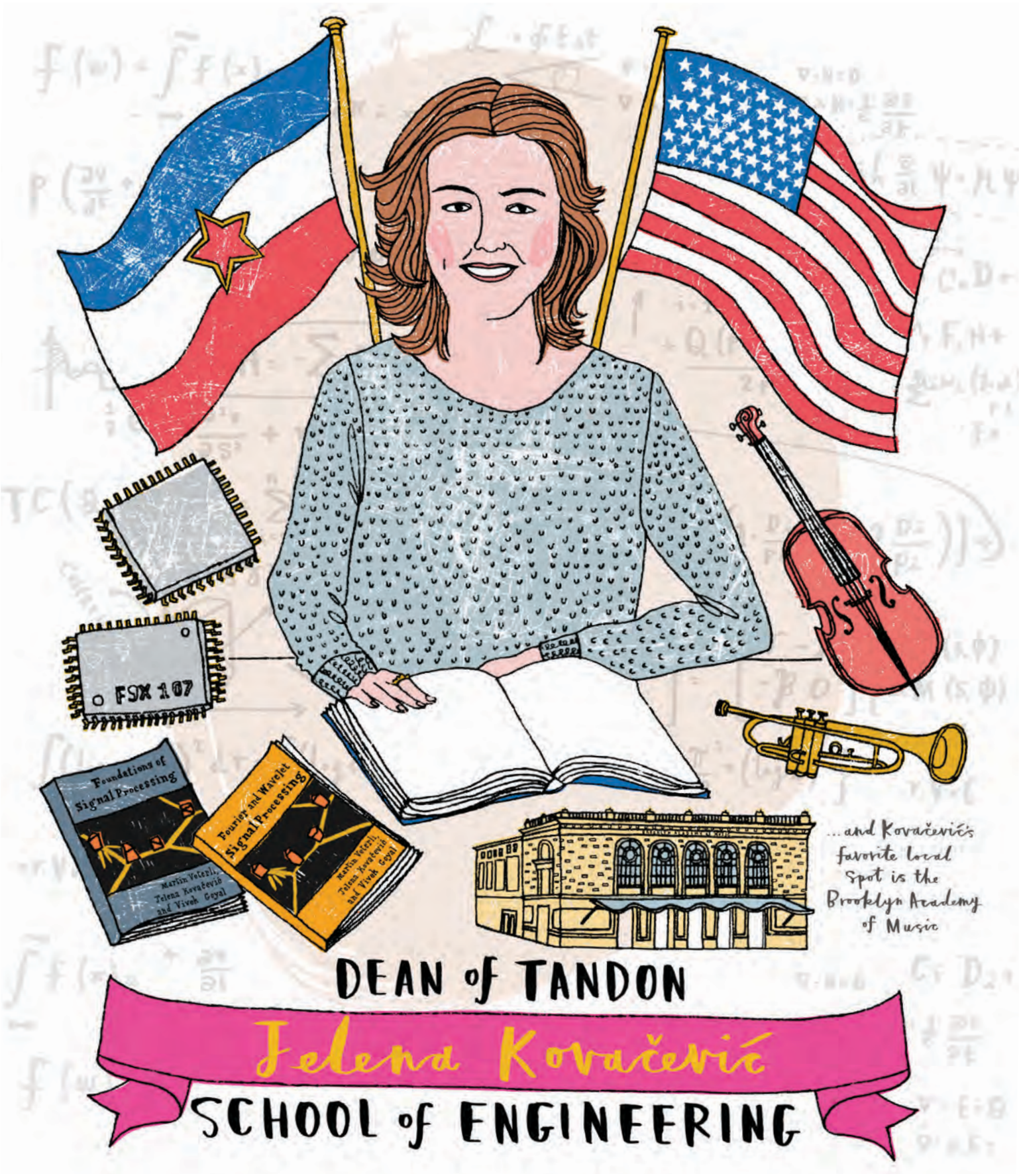


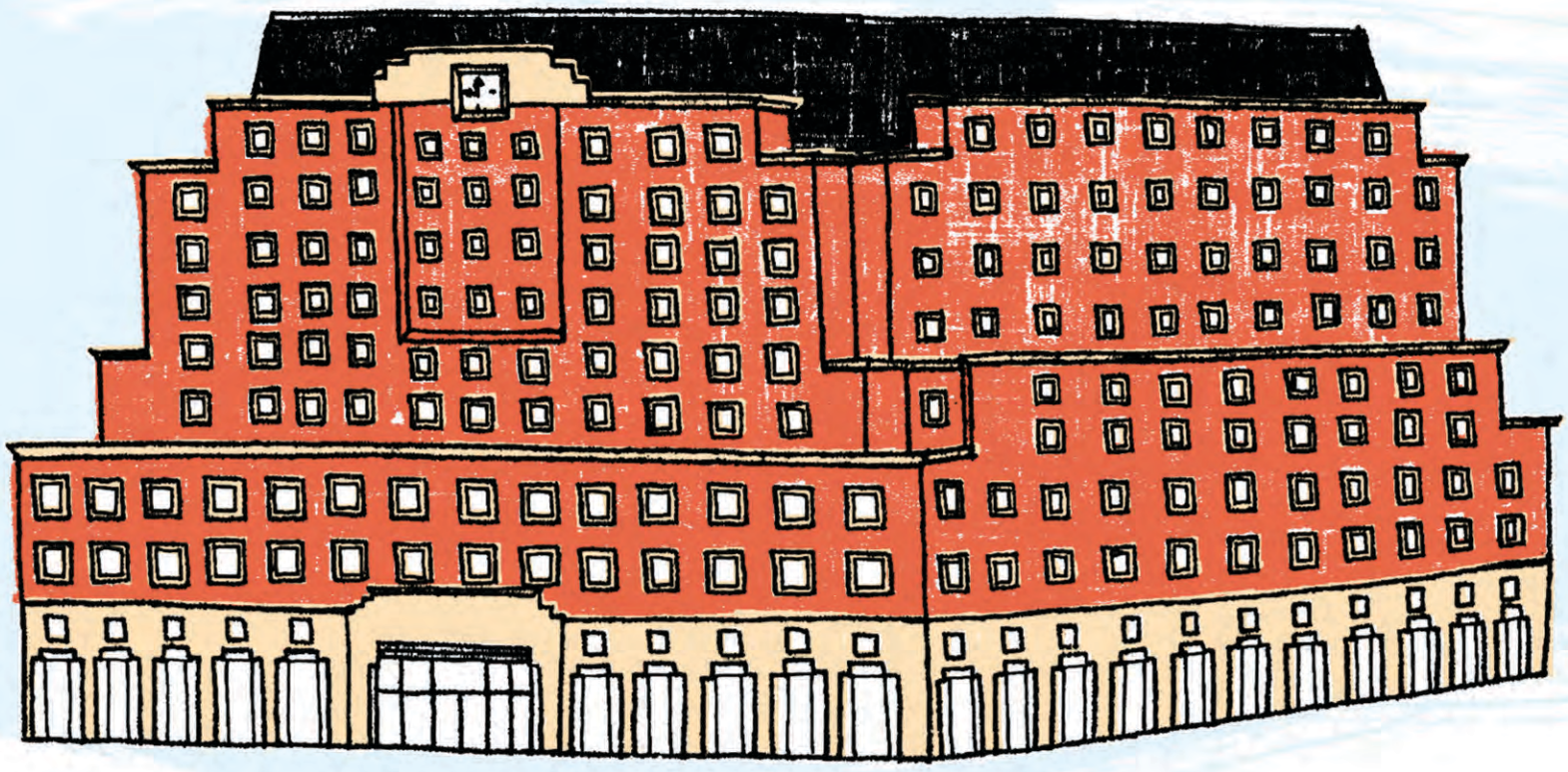
HOME TO:
FINANCIAL AID OFFICE

AS WELL AS...

REGISTRAR

In June, with just two exceptions—the School of Medicine and the College of Dentistry—all of the back-end operations for NYU registration moved from Manhattan to this new base in Brooklyn. Face-to-face assistance is available around the corner at 5 MetroTech Center or at 383 Lafayette Street in Manhattan.


Foundations of Signal Processing
Martin Vetterli, Jelena Kovačević and Vivek Goyal
Fourier and Wavelet Signal Processing
Martin Vetterli, Jelena Kovačević and Vivek Goyal
...and Kovačević's favorite local spot is the Brooklyn Academy of Music
DEAN of TANDON
Jelena Kovačević
SCHOOL of ENGINEERING



2 METROTECH CENTER

HOME TO: CENTER FOR ADVANCED TECHNOLOGY AND TELECOMMUNICATIONS
CENTER FOR CYBERSECURITY
COMPUTER SCIENCE AND ENGINEERING DEPARTMENT
ELECTRICAL AND COMPUTER ENGINEERING DEPARTMENT
MAGNET
MOSES CENTER FOR STUDENTS WITH DISABILITIES
TANDON CARD CENTER
VISUALIZATION AND DATA ANALYTICS LAB
AS WELL AS...

NYU WIRELESS / CIMS, MED, TANDON

In the not-too-distant future, you will have a superspeedy 5G phone—and much of the technology was born here. "NYU Wireless has become synonymous with 5G," says Sundeep Rangan, associate professor of electrical and computer engineering at Tandon. This preeminence began five years ago with the research of the program's founder, Theodore Rapport, a professor at three schools: Tandon (electrical engineering), Courant (computer science), and the School of Medicine (radiology). NYU has teamed up with Columbia and Rutgers under the aegis of the National Science Foundation's Platforms for Advanced Wireless Research "to build one of the first 5G test beds over about 20 city blocks near the Columbia campus," Rangan says. Another big project for the National Institute for Standards and Technology is the study of millimeter wave communications technology and how it can help first responders transmit information to one another in remote areas.

ABILITY PROJECT / STEINHARDT, TANDON, TSOA

This lab brings together adult wheelchair users, hearing-impaired children, autistic teenagers, and others with students who are learning how to become designers, engineers, or occupational therapists for disabled people. Most recently, students worked with children from Brooklyn's Midwood neighborhood who were adjusting to cochlear implants and having difficulty with balance. "They designed an adjustable balance board that wasn't as steep as a conventional one, with tilt stops to further limit movement," says codirector Anita Perr. They also constructed a game that taught new hearers how to determine which direction a sound was coming from by following a light.

EDTECH ACCELERATOR / STEINHARDT

Three years ago when this endeavor started, New York City had about 800 educational technology companies and the Bay Area had 1,000. Now, according to Dominic Brewer, Steinhardt's dean, the figures are reversed thanks in part to this initiative, which is helping to create a thriving community of entrepreneurs. Among the many start-ups that have been incubated or accelerated through the project's conferences, festivals, boot camps, classes, and mentorship programs is one that teaches history courses through virtual reality and another that uses an app to help millennials just out of school learn how to handle their finances.

PHOTO: SHELLY CHEN AND KEVIN ZENG

GAME CENTER / TSOA

Five years ago the center was "squatting at 721 Broadway," then it moved to 2 MetroTech, which was "great," says the center's director, Frank Lantz. Owing to expansion, the center—which teaches game design as a major or minor—is moving again, this time around the corner to 370 Jay Street, and Lantz is psyched: "We're calling it MTA: Media, Technology, and the Arts. That building and the Brooklyn campus are the cutting edge of the intersection of design and technology—two worlds that in many universities are kept apart." *A Memoir Blue* (pictured) is a single-player magical realism game created by Shelley Blue (TSOA '18) and Kevin Zeng (TSOA '17).

BROOKLYN STORY: THE TEDDY BEAR The creation of this childhood staple was sparked by, of all things, a shooting expedition. When Bed-Stuy store owner Morris Michtom saw a *Washington Post* cartoon of Theodore Roosevelt refusing to kill a black bear that had been captured for him during a 1902 hunting trip, his wife, Rose, sewed a plush velvet version of the animal. They put it in their shop window with the label "Teddy's Bear." It was a hit, so the Michtoms sent it to the president with a request for permission to make more with his name. The Ideal Novelty and Toy Company was born, and Roosevelt adopted the bear as the Republican Party symbol in the 1904 election.

GOVERNANCE LAB (GOVLAB) / TANDON

When the GovLab relocated here four years ago, "we thought we were going to the ends of the earth—that Midtown was where things happen and Brooklyn was [strictly for] your grandparents," says founder and director Beth Simone Noveck; she's also a Tandon professor of technology, culture, and society. "Now it's hard for me to meet people in Manhattan." One immediate perk was a dramatic increase in space, "probably by a factor of five," she says. The generous new footprint has allowed the GovLab to host monthly ideas lunches, open to the public, with speakers who work at the intersection of government and technology. The GovLab space also contains public art installations that focus on open government. One example: Zach Hyman's sculpture *Media Flow* (at right) is a wave of thousands of plastic balls representing the problem-solving process.

5 METROTECH CENTER

HOME TO: BERN DIBNER LIBRARY OF SCIENCE AND TECHNOLOGY
EXPOSITORY WRITING PROGRAM
FACULTY INNOVATIONS IN TEACHING AND LEARNING CENTER
GAME INNOVATION LAB
GENERAL STUDIES PROGRAM
HIGHER EDUCATION OPPORTUNITY PROGRAM
OFFICE OF GLOBAL SERVICES
OFFICE OF STUDENT AFFAIRS
PFIZER AUDITORIUM
RESEARCH AND TEACHING LABS
RESEARCH SPACE FOR MASTER'S/PHD RESEARCH
STUDENT ACTIVITIES
STUDENTLINK CENTER
TECHNOLOGY, CULTURE, AND SOCIETY DEPARTMENT
TECHNOLOGY MANAGEMENT AND INNOVATION
TRIO PROGRAM
UNDERGRADUATE AND GRADUATE ACADEMIC AFFAIRS
AS WELL AS . . .

BROOKLYN STORY: Shirley Chisholm was the first African American woman elected to the United States Congress; she represented New York's 14th District between 1969 and 1983. As if that weren't impressive enough, in 1972, when she ran for president of the United States, she became both the first black candidate for a major party's nomination and the first woman to run for the Democratic Party's nomination.

PHOTOS: ZACH HYMAN (SCULPTURE); PHOTOFEST (CHISHOLM)

COMPUTER ENGINEERING LAB / TANDON

"Battery technology has not improved in 200 years," says Francisco de Leon, a Tandon associate professor of electrical and computer engineering. At the school's Power Lab, he and his students "want to make all cars electric, and the biggest challenge is the batteries." To go several hundred miles on a charge, a battery would need to be huge—and expensive. One of the lab's current research projects ("the sexiest one," de Leon notes) is to put power in the roadways instead of the cars.

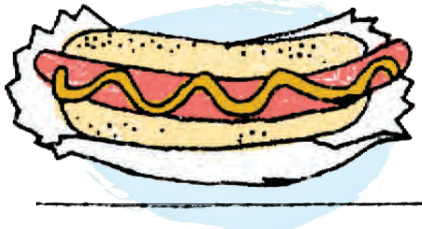
"While you move, instead of having HOV lanes, you have E lanes reserved for electric cars, perhaps the last mile from Long Island and New Jersey into the city," he explains. A car with a small battery might receive a wireless charge as it goes through an E-ZPass booth or other designated station. Tweaking such a wireless connection to be as fast and efficient as possible is the Power Lab's next frontier.

The team has partnered with HEVO, a small Red Hook company that itself was incubated at Tandon's Future Lab. "They licensed our technology, and now they're getting funding," says de Leon. (HEVO eliminates the need to plug cars into charging stations.) In theory, de Leon adds, the Power Lab "could be in the middle of nowhere," but "other than being in California or maybe Cambridge, Massachusetts," being in Brooklyn is the best place for making such connections between research and commerce.

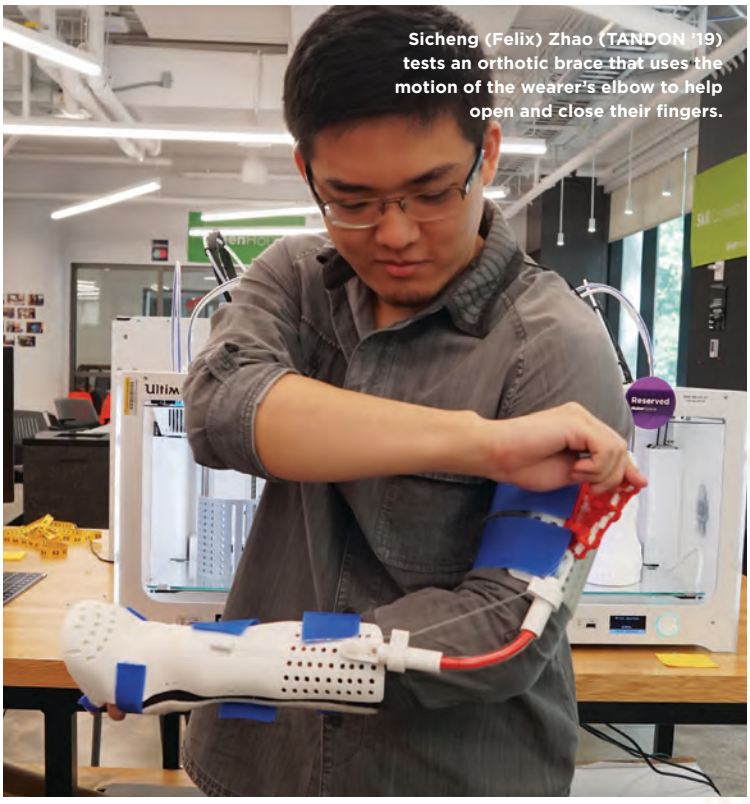
6 MetroTech Center

ALSO KNOWN AS ROGERS HALL AND JACOBS ACADEMIC BUILDING

HOME TO: APPLIED PHYSICS
ATHLETICS AND GYMNASIUM
CENTER FOR K12 STEM EDUCATION
CHEMICAL AND BIOMOLECULAR ENGINEERING
CLASSROOMS
COPY AND MAIL CENTER
ENGINEERING TEACHING AND RESEARCH LABS
GENERAL ENGINEERING
INSTITUTIONAL RESEARCH
IT HELPDESK
JASPER KANE DINING CENTER
MATHEMATICS
MECHANICAL AND AEROSPACE ENGINEERING
MEDIA SUPPORT
NANOLAB CLEAN ROOM
POLYTECHNIC TUTORING CENTER
RESEARCH/TEACHING LABORATORIES AND CLEAN ROOM
STUDENT HEALTH CENTER
AS WELL AS . . .



BROOKLYN STORY: HOT DOGS The origins of the frankfurter remain as unclear as its ingredients, but we do know Coney Island has played a pivotal role in its ascendancy, beginning with German immigrant Charles Feltman. Some credit the pie vendor–turned-restaurateur with putting the wiener in a bun (he called it a red hot) so beachgoers could eat without the need for utensils or plates; this supposedly happened around 1869. In 1916, Nathan Handwerker left Feltman's employ to open Nathan's Famous at Surf and Stillwell Avenues, with the first hot-dog-eating contest occurring there on July 4, 1972.



Sicheng (Felix) Zhao (TANDON '19) tests an orthotic brace that uses the motion of the wearer's elbow to help open and close their fingers.

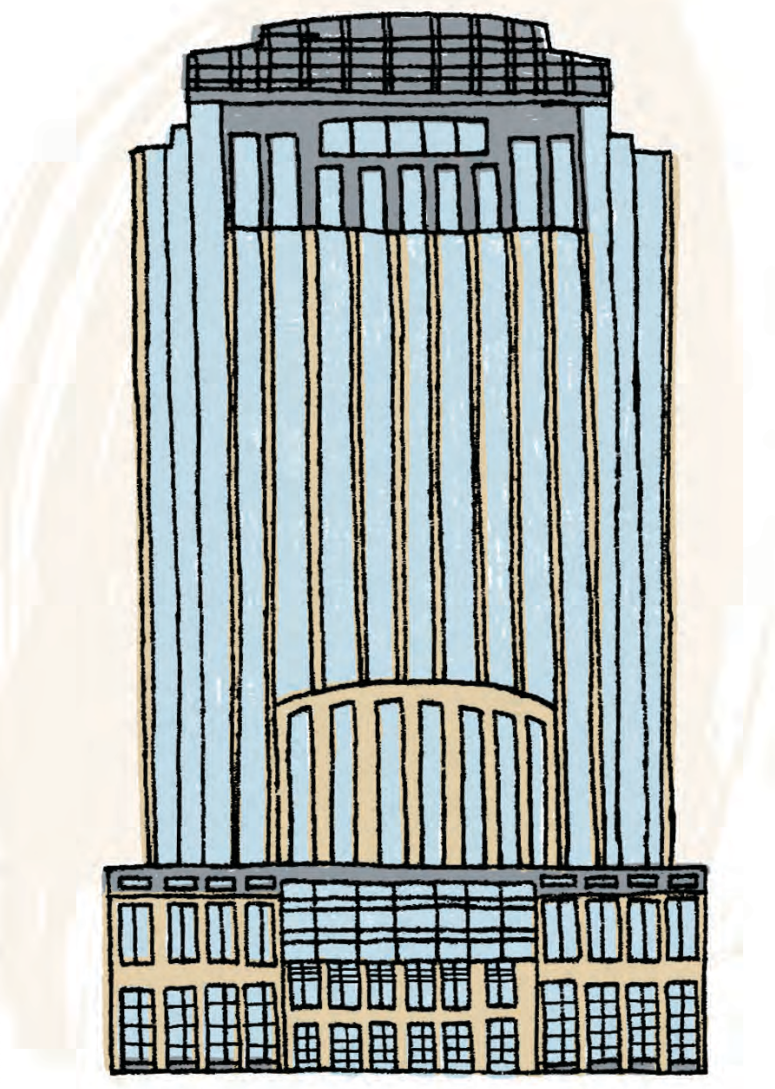
PHOTO: GABRIELLA CAMMARATA

MAKERSPACE / TANDON

The lab where the NYU community can crank out high-tech toys and tools occupies 10,000 square feet in the basement and first floor of Rogers Hall (aka 6 MetroTech). Enormous windows allow passersby to catch a glimpse of MakerSpace's many 3-D printers, laser cutters, and soldering stations. "You can see the students working, and I think that's a really cool, nice touch," says lab manager Victoria Bill; she is also an adjunct professor in Tandon's engineering department.

The original Polytechnic space (and, before that, a safety razor factory), Rogers is now the main research building for Tandon. "It's very convenient for engineering students to come in between classes," Bill says. But the space is open to anyone from NYU and, through an application process, to any New York City middle or high school student. There's a swipe-in station at the front, and the center has clocked more than 80,000 entries.

The MakerSpace team has also partnered with the School of Medicine and the Ability Project to teach a course in creating 3-D-printed biomedical devices. Bill describes one such apparatus as "more an orthotic than a prosthetic because it doesn't replace fingers. It goes on top of fingers and helps people to open and close their hands and gives them functionality." Students will consult with patients about their needs, design the gear, construct it on 3-D printers, and then test it on patients.



12 MetroTech Center

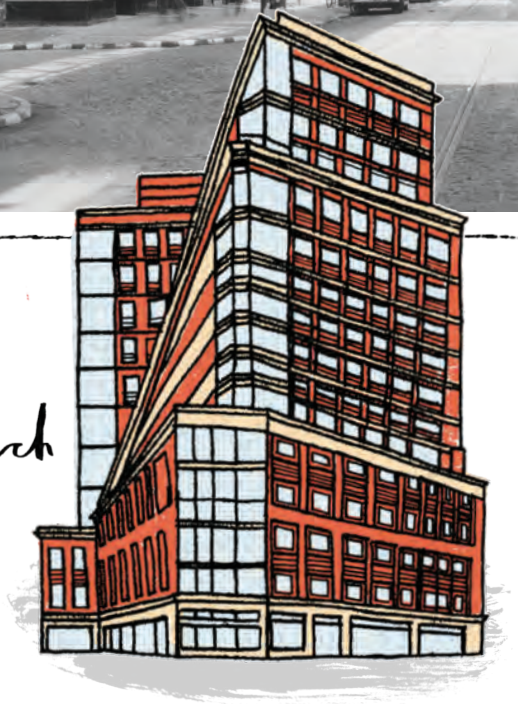
HOME TO: FINANCE AND RISK ENGINEERING / TANDON

For starters, the Department of Finance and Risk Engineering gives far more weight toward engineering talent than toward business savvy in its applicant selection. "We don't screen on finance skills," says chair Peter Carr. His field is predicated on the notion that the economic and finance sides of risk management can be taught—and that real skill comes in looking at data as mathematicians and computer scientists, recognizing economic patterns not unlike the way Google Images can "potentially identify a cat on the Internet." Carr's students partner with New York companies to solve real-world problems. "We're only two stops [on the subway] from Wall Street," Carr notes.

BROOKLYN STORY: The Myrtle Avenue el train at the intersection of Myrtle Avenue and Duffield Street (between what is now 15 MetroTech and 4 MetroTech), aka Old Myrt, opened in 1888 and operated for more than 80 years.

PHOTO: COURTESY OF THE NEW YORK TRANSIT MUSEUM

15 MetroTech Center



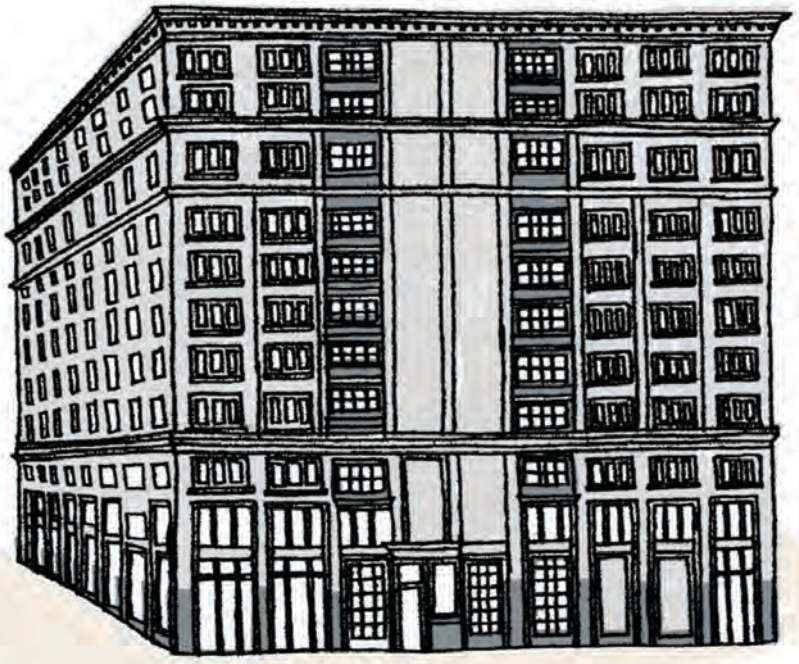
HOME TO: ACCESSIBLE AND RESILIENT TRANSPORTATION RESEARCH CENTER
CIVIL AND URBAN ENGINEERING*
INTERNATIONAL CENTER FOR ENTERPRISE PREPAREDNESS
URBAN FUTURE LAB

AS WELL AS...

*COMING SOON

C²SMART / TANDON

The Connected Cities for Smart Mobility toward Accessible and Resilient Transportation (C²SMART) Center studies emerging transportation technologies and solutions, from bike and car sharing services to driverless automobiles. "We're building a test bed here in downtown Brooklyn along the Flatbush Avenue corridor," says C²SMART senior associate director Shri Iyer. "We have cameras to view street activity, and we're building simulation models of the corridor on the virtual side." From the data they glean on both pedestrians and vehicles, his team will be "trying new strategies to help transportation systems," Iyer says. "We'll be looking at recorded footage to help us do predictive analyses on where crashes are likely to occur." Some of what they find out may be local rather than global. "Solutions that work in Manhattan don't necessarily work in Brooklyn," Iyer explains. "Brooklyn is actually becoming home to a lot of transportation start-ups"—most geared toward a driverless future.



20 Jay Street

HOME TO: DIGITAL FUTURE LAB / TANDON

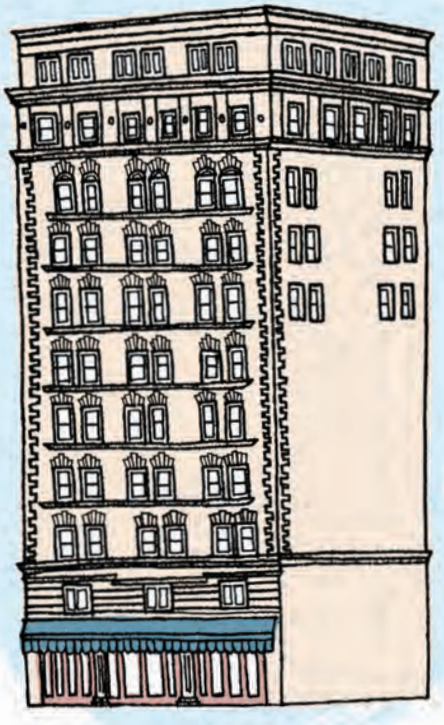
The name says it all: this lab incubates digital start-ups. Some companies that have been through the nurturing process recently include Paperspace, a next-generation high-speed cloud; Carmera, which provides maps for self-driving vehicles; Medivis, an augmented-reality technology developed by two School of Medicine residents to help surgeons visualize with holographs; and Spruce, which hopes to revolutionize the title insurance business with modern software. According to manager Craig Wilson, the lab's DUMBO address also puts it at "the epicenter of digital media in New York." (Major digital branding and marketing agencies including Big Spaceship, Carrot Creative, Huge, and Red Antler are right in the same neighborhood.)

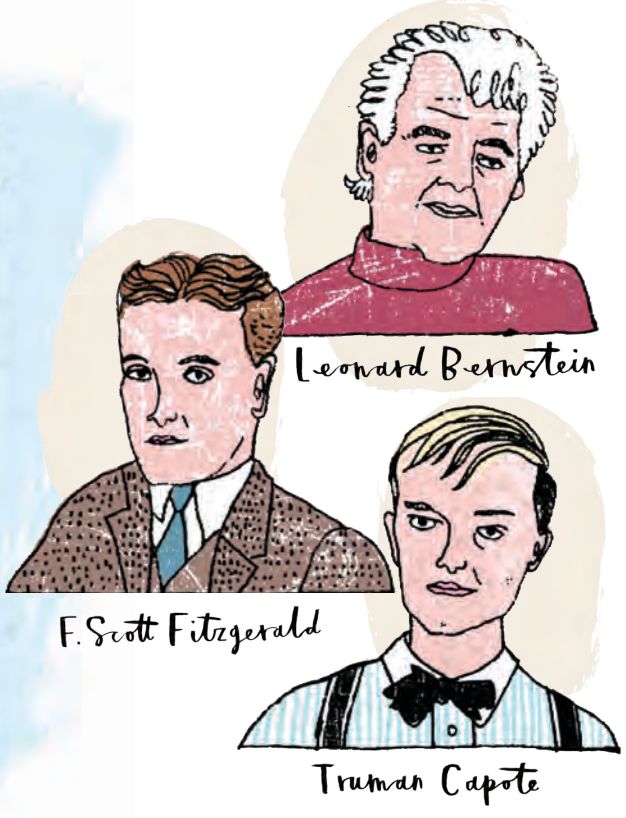
BROOKLYN STORY: GREEN-WOOD CEMETERY Before there were Central and Prospect Parks, New Yorkers flocked to Brooklyn's Green-Wood Cemetery, a rolling 478 acres of ponds, lush landscapes, and million-dollar views. Founded in 1838, Green-Wood was one of the first "rural cemeteries"—picturesque tracts used to replace church burial grounds that were filled to capacity. Among its permanent residents are artists Jean-Michel Basquiat and Louis Comfort Tiffany and physician Susan McKinney-Steward, a Crown Heights native who was the third African American woman to earn a medical degree in the entire United States and the first in New York State.

55 CLARK STREET

HOME TO: CLARK STREET RESIDENCE HALL

In its heyday, the St. George in Brooklyn Heights was the largest hotel in New York City. Presidents Harry Truman and Franklin Roosevelt slept there, Leonard Bernstein and the New York Philharmonic recorded on the premises, F. Scott Fitzgerald tippled in its bar, and Truman Capote regularly took dips in its saltwater pool. It was also the scene of the murder of Don Corleone's hitman Luca Brasi in *The Godfather*. A 1995 fire destroyed much of the original building, but sections were repurposed as a dorm for NYU and other schools.





HOME TO: AR/VR LAB / TANDON

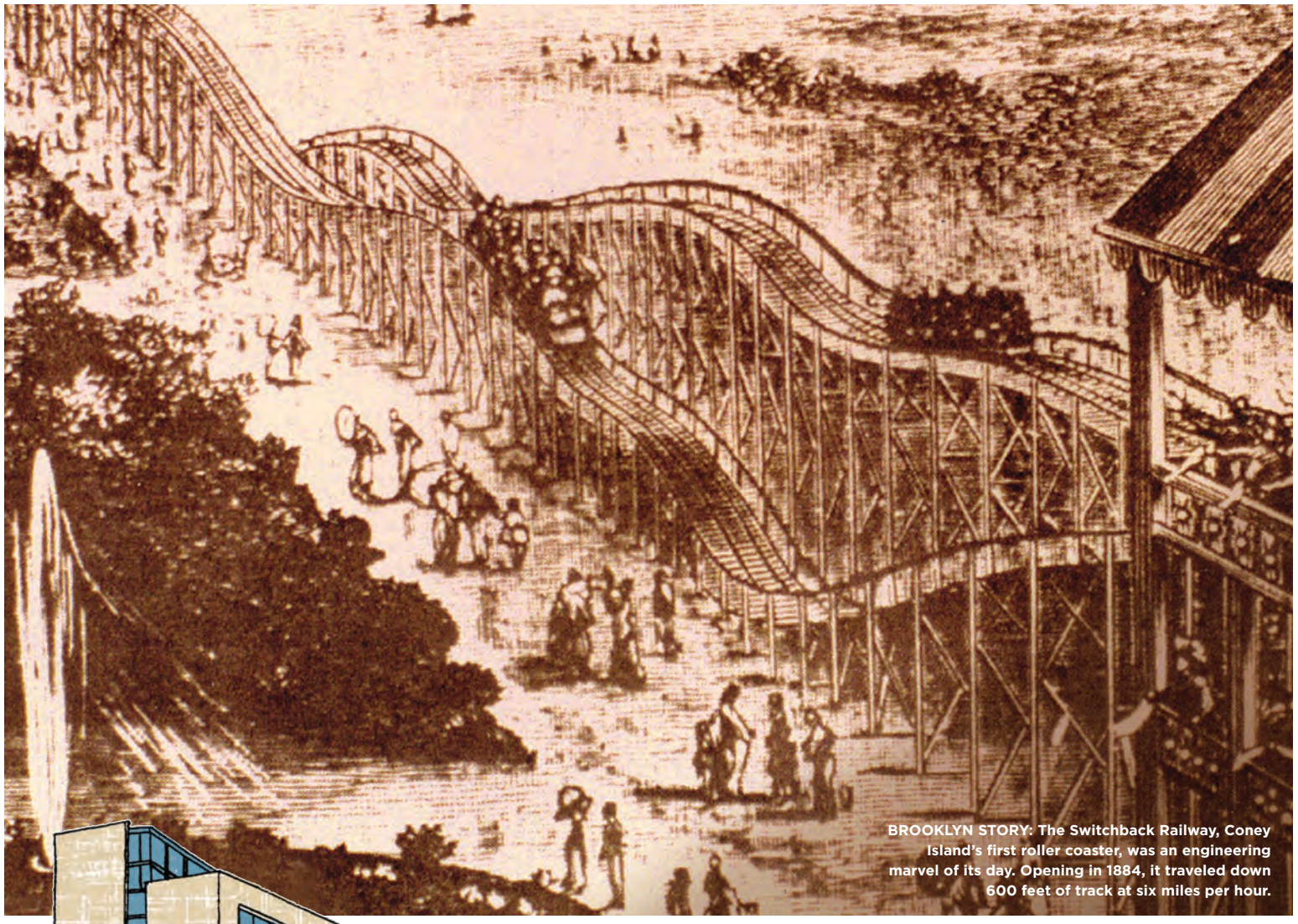
Using funding from the NYC Economic Development Corporation, the Mayor's Office of Media and Entertainment, and New York State, NYU—along with other institutions and universities—is establishing a 15,000-square-foot facility dedicated to augmented and virtual reality that will, among other things, provide workspace, equipment, and start-up support, and serve as a research and networking hub due to create 500 jobs.

BROOKLYN STORY: TWIZZLERS In 1845, two Brooklyn confectioners started selling licorice whips and other treats through Young & Smylie, a new candy company they named after themselves. In 1929, that same business, known as the National Licorice Company following a merger, introduced Twizzlers to the world. They also played a role in the most monumental achievement in history, 1969's Apollo 11 moon landing. After his "One small step" remark, Neil Armstrong supposedly delivered the second sentence uttered on the celestial body: "I could sure go for some Twizzlers right now."

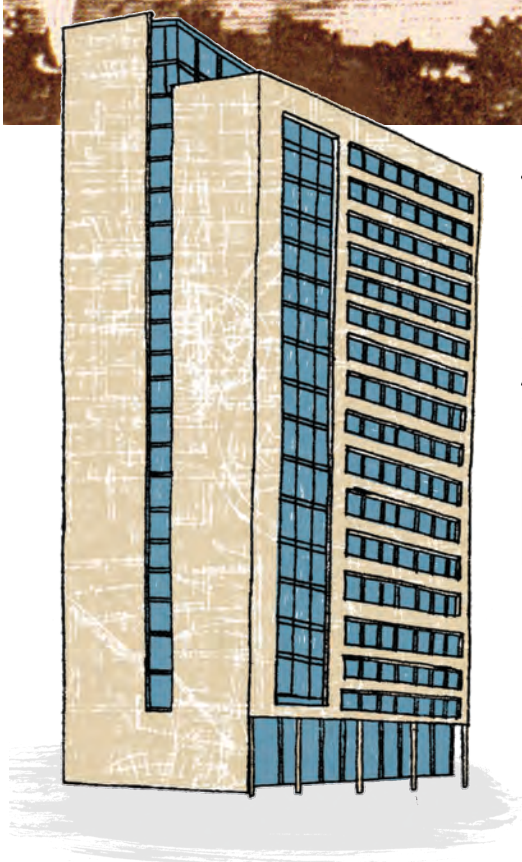
HOME TO: VETERANS FUTURE LAB / TANDON

Serving one's country invariably means that "you give up a piece of yourself and you never get it back," says lab director James Hendon. "It could be time, or it could be other things. Our job is to close that gap." The endeavor is New York City's first business incubator exclusively for military veterans, who get training in entrepreneurship thanks to a partnership with New York State and Barclays. Topics range from developing cybersecurity tools to building a better bartending kit.

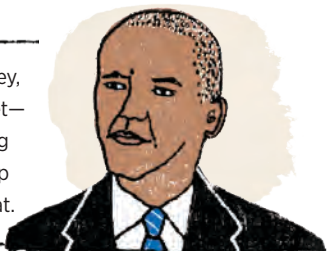
BROOKLYN STORY: BRIDGE ART It's no wonder why the first bridge to connect Manhattan to Kings County has figured so prominently in literature, film, photography, and painting: a hybrid cable-stayed and suspension span opened in 1883, it's a feat of engineering and design with a dramatic 14-year construction backstory. Among the most famous renderings are those by (below, clockwise from top left) Joseph Stella, Georgia O'Keeffe, Émile Renouf, and Andy Warhol.



BROOKLYN STORY: The Switchback Railway, Coney Island's first roller coaster, was an engineering marvel of its day. Opening in 1884, it traveled down 600 feet of track at six miles per hour.



BROOKLYN STORY: BARACK OBAMA Park Slope real estate is already pricey, but the allure of presidential history likely added to the value of 640 2nd Street—which recently sold for more than $4 million. In the mid-1980s, after graduating from Columbia University, Barack Obama lived on the historic brownstone's top floor with his girlfriend Genevieve Cook, the daughter of an Australian diplomat.



101 Johnson Street

HOME TO: OTHMER RESIDENCE HALL

For most of the early 20th century, this site held a small factory, producing goods from tire rims to coats. Before that it housed a fire commission, and before that, a veterinary hospital. Then during World War II, the lower floors were boarded up and the upper floors became a residence. The property later passed to Westinghouse High School and then to the Polytechnic Institute, which built the current 390-bed dorm tower in 2002.

HOME TO: NYU LANGONE HOSPITAL–BROOKLYN / MED

If Brooklyn were a city, it would be about the size of Houston, the fourth largest in the country, notes physician Bret J. Rudy, executive hospital director and senior vice president at NYU Langone Hospital–Brooklyn. "You can probably name some hospitals in Houston," Rudy says, "but Brooklyn? What rolls off your tongue?" And, he adds, "when people in Houston get sick, they do not go to Austin. So if you live in Brooklyn, why should you have to travel into Manhattan for healthcare?"

Thus it was a no-brainer when NYU Langone Health had the opportunity to merge with Lutheran Medical Center in Sunset Park in early 2016—a time when more than 30 percent of the babies born at NYU Langone's Tisch Hospital in Manhattan were going home to Brooklyn. Since the merger, more than 100 physicians have been hired and enhancements have been made in numerous areas, including internal medicine, surgery, neurology, and obstetrics. Construction of an ambulatory surgery center is being planned, wait times have been cut for emergency room visits, and the average length of hospital stays has been reduced.

Beyond the main building itself, the hospital system reaches far beyind the southwest Brooklyn community, with eight primary care centers, 40 school-based clinics, and 10 community medicine centers. The patient population is more foreign-born (and poorer) than the demographics encountered by residents in Manhattan, Rudy says. "Many of the patients we used to see there have been pushed out into the outer boroughs by the cost of living," he explains. Most speak Spanish, Chinese, Russian, Arabic, or something else rather than English as a first language, "and they come from countries where they haven't necessarily had good healthcare."

Such a diverse patient mix and health challenge offer a terrific learning experience for the medical students. "There's a breadth of clinical exposure in terms of lots of different, very advanced diseases," Rudy says. Conditions such as stomach cancer, chronic hepatitis, and disorders of the gallbladder are often seen at later stages. Surgeries that would have been relatively routine in conditions caught earlier are suddenly—and unnecessarily—complex. Many patients have preventable diseases, or they have diseases at a younger age. "Things like, quite sadly, you'll see a 41-year-old with uncontrolled hypertension," Rudy says.

If you're a medical student, he says, "you're going to see everything, a vast variety of disease, and you're going to have a real appreciation for the social determinants of health."

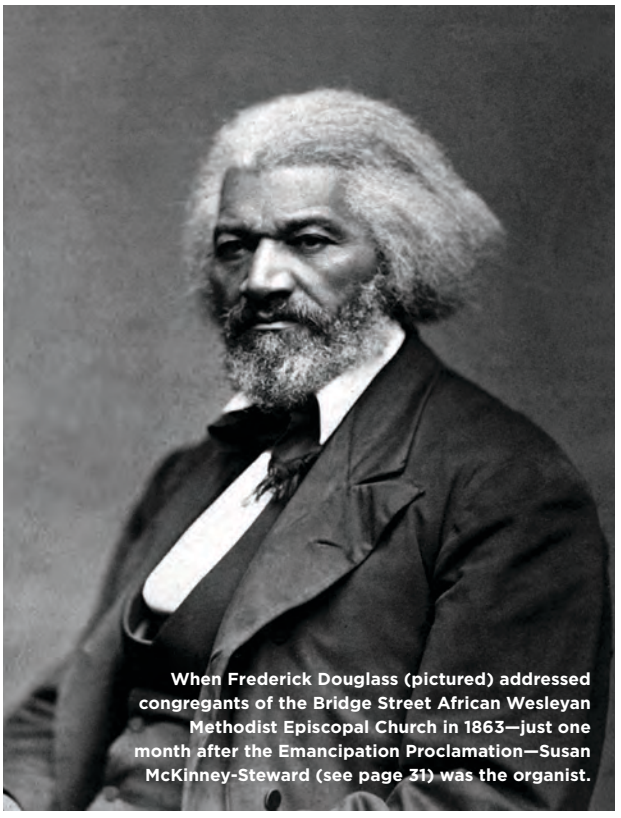
311 Bridge Street

HOME TO: TANDON GRADUATE ADMISSIONS
(A PORTION OF) TANDON UNDERGRADUATE ADMISSIONS
WASSERMAN CENTER FOR CAREER DEVELOPMENT

AS WELL AS...

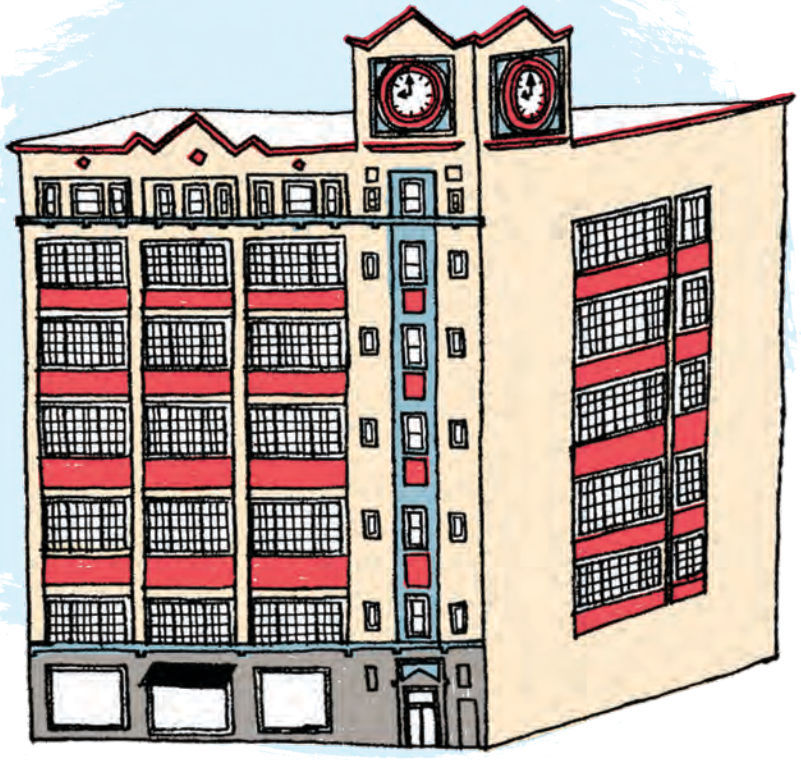
WUNSCH HALL / TANDON

The oldest building on campus and a registered landmark, Wunsch was built in 1847. It was later the home of the first black congregation in Brooklyn, the Bridge Street African Wesleyan Methodist Episcopal Church, where Frederick Douglass spoke. The church also served as a stop on the Underground Railroad and as a safe haven for black citizens during the 1863 Draft Riots, which began as a protest against Civil War conscription but exploded into anti-black scapegoating violence (and convinced many black Manhattanites to move to Brooklyn permanently). Wunsch houses Tandon's admissions office.



When Frederick Douglass (pictured) addressed congregants of the Bridge Street African Wesleyan Methodist Episcopal Church in 1863—just one month after the Emancipation Proclamation—Susan McKinney-Steward (see page 31) was the organist.

PHOTO: GEORGE KENDALL WARREN



325 Gold Street

HOME TO: MECHANICAL AND AEROSPACE ENGINEERING SENIOR DESIGN PROJECT CENTER

AS WELL AS...

CIVIL AND URBAN ENGINEERING STUDENT GROUPS / TANDON

The space serves as a home for two student groups. One is the Concrete Canoe Project, which focuses on the annual competition between engineering schools. Concrete? It's not the material one would ideally choose for floating. "It sinks," explains Magued Iskander, chair of civil and urban engineering. That's why Tandon students meet the challenge of building one such vessel every year. "They're works of art," Iskander says, demanding creativity as well as technical know-how.

Then there is the Steel Bridge Project. In a borough surrounded by bridges, engineering students spend months in the lab designing, constructing, welding, and tweaking a model span of their own. The specs to compete with other engineering schools in the region change yearly, according to Alexey Sidelev, adjunct professor of civil and urban engineering; in 2018 bridges were judged on their stiffness and on how quickly they could be assembled. Like their schoolmates and building mates at the Concrete Canoe Project, the Steel Bridge Project (at left) scored first-place honors in the regional competition.

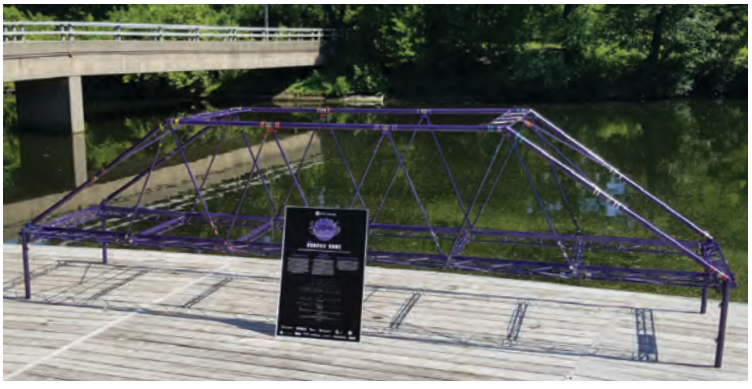
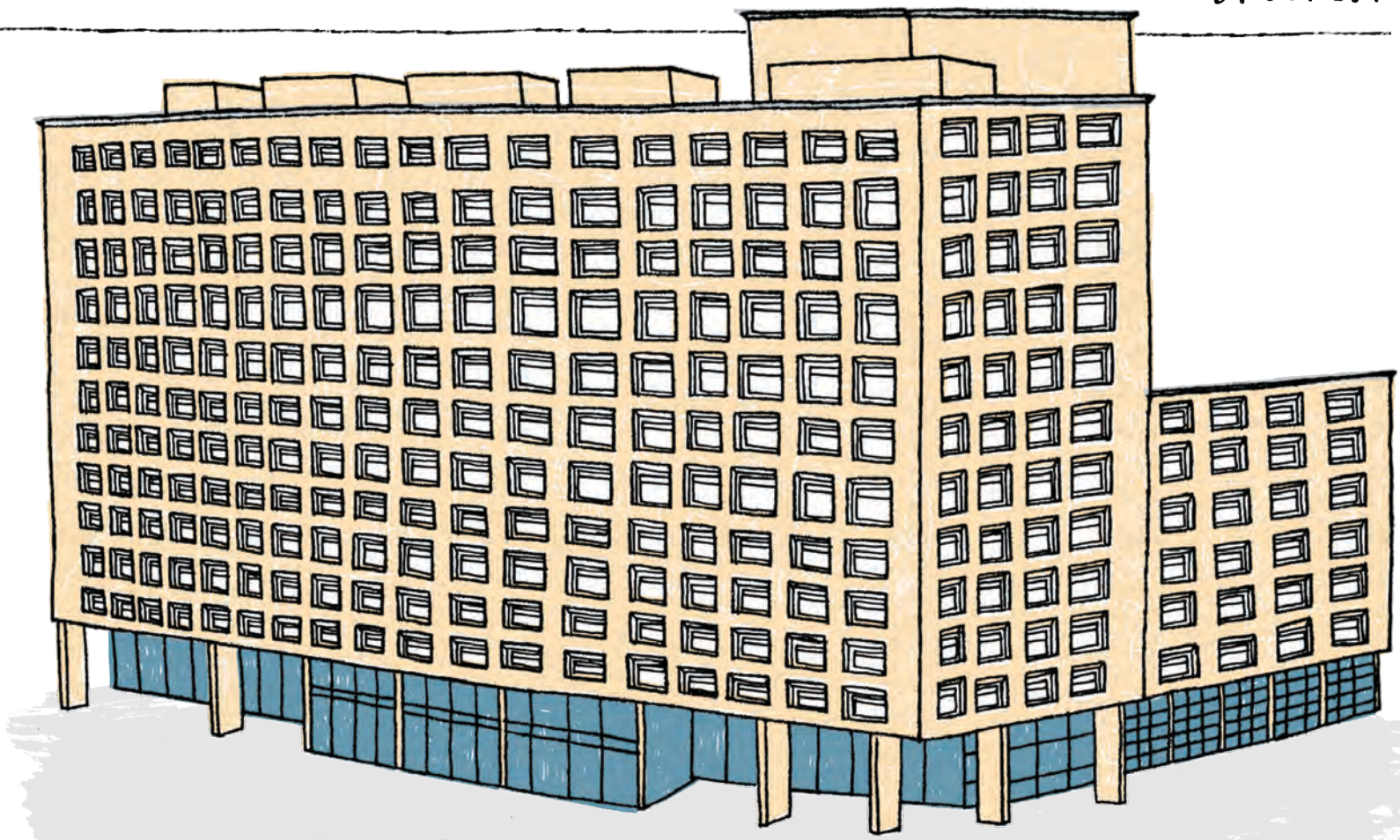


PHOTO: ALEXEY SIDELEV

BROOKLYN STORY: SWEET'N LOW Though discovered in 1879, saccharin didn't go big until 1957, when Benjamin Eisenstadt, owner of a Brooklyn Navy Yard cafeteria, created, marketed, and distributed a powdered form of the artificial sweetener. Eisenstadt received US patent number 3,625,711 for his creation—something he'd failed to do in the mid-1940s when he invented the modern-day sugar packet. Because of his earlier oversight, sugar manufacturers could steal his ingenious invention, which they did freely.

Filling a Gap

DEN In 2020, the College of Dentistry plans to open a Brooklyn-based dental clinic to serve both the NYU community and residents in the surrounding area. "Brooklyn is booming," says executive vice dean Michael O'Connor. "Even though you have this profusion of expensive real estate, you have people working or living there who can't afford a conventional dentist." The school's Manhattan location is "not as conveniently located as a safety net provider," adds the College of Dentistry's dean, Charles Bertolami. The mission is to integrate service to those who can't afford it with learning opportunities for students.



370 JAY STREET

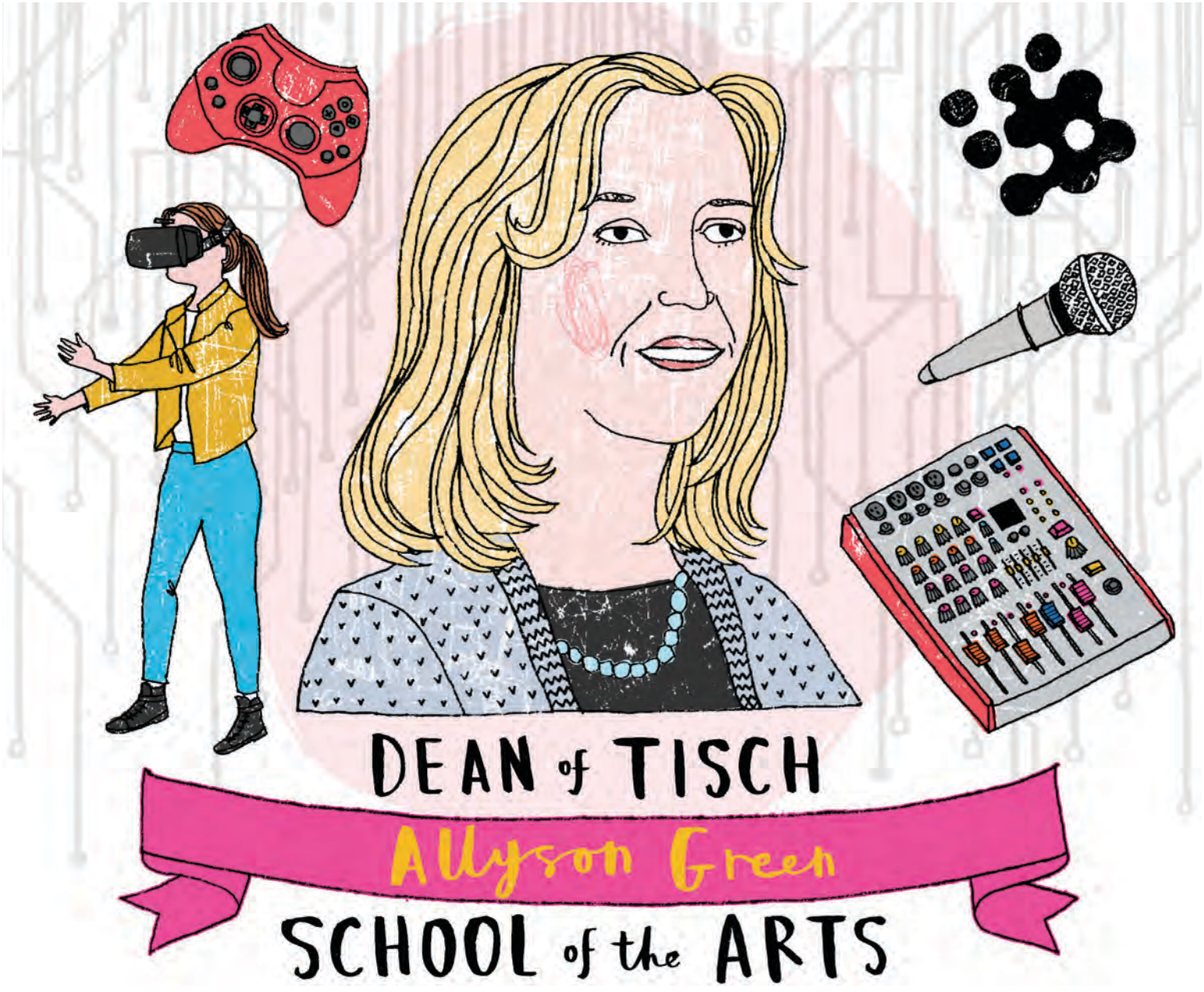
When the ground floor at 370 Jay Street becomes a retail space next fall, it will not be your average Anywhere McMall populated with the usual sneaker and kitchenware chain stores. The university has a 99-year lease with the city for the former headquarters of the Metropolitan Transportation Authority; the MTA acronym has been repurposed with the tagline "Media, Technology, and the Arts."

Enhancing the arts column will be a spacious gallery featuring rotating exhibits of work by local creatives as well as by students and faculty. Then there's the loading dock, where armored cars once picked up and dropped off subway tokens and fare money: it's being redesigned and soundproofed to serve as a cutting-edge performance space. Although the details have yet to be hammered out, the university is working closely with community stakeholders to ensure that the retail will fit into the fabric of the neighborhood and its place as a capital of innovation and technology.

HOME TO: 200-SEAT AUDITORIUM
CENTER FOR ADVANCED TECHNOLOGY IN TELECOMMUNICATIONS*
CENTER FOR URBAN SCIENCE AND PROGRESS
COMPUTER SCIENCE*
ELECTRICAL AND COMPUTER ENGINEERING*
GAME CENTER (TSOA)*
GAME INNOVATION LAB (TANDON)*
INTEGRATED DIGITAL MEDIA PROGRAM*
INTERACTIVE MEDIA ARTS*
LECTURE HALL
MEDIA LAB*
MOVEMENT LAB
NYU WIRELESS*
URBAN INTELLIGENCE LAB
VISUALIZATION IMAGING AND DATA ANALYSIS CENTER*
AS WELL AS...

→

*COMING SOON



For Allyson Green, dean of the Tisch School of the Arts, NYU's acquisition of the MTA building is a creative dream come true.

"We see the MTA as a true 'collaboratory,' where artistic process and imagination will intersect with science and engineering," Green says. Pairing artists with those in other disciplines is key. "We believe wholeheartedly that this is the key to innovation and to creating world-changing solutions for global issues," she says.

What's known as the Institute of Emerging Media—an affiliation of the Clive Davis Institute, the Interactive Media Arts program, the Interactive Telecommunications Program, and the Game Center—will particularly benefit from the expansion into Brooklyn. "Four of our degree programs in the institute will, for the first time, be housed in the same building," Green notes. "This will be transformational for the future of game design, recorded music, and interactive media because they'll be able to work alongside each other and with colleagues in other schools."

Then there's the new Future Imagination Fund, designed to solve problems by teaming up artists, scientists, and businesspeople (see page 64). "The MTA is a launchpad where new initiatives like this fund will promote intersectional innovation in the community, across the university, and around the globe," Green says.

The cruise ships using the Brooklyn Terminal bring both adventure and pollution.

THIS PAGE: © JOSHUA KRISTAL (CRUISE SHIP); PICTURES NOW/ALAMY STOCK PHOTO (CLOCK TOWER)

URBAN INTELLIGENCE LAB / CUSP

"Brooklyn has become the hub for start-up companies working in clean tech and urban technology," according to the lab's director, Constantine Kontokosta. His lab addresses such issues as how to help cities cope with climate change and develop energy-efficient policies. Within the borough itself, it has designed low-cost electronic sensors to measure air quality and noise, and placed them in several communities; the findings are then "combined with community-driven data to better understand the impact on the neighborhood," Kontokosta says. (In Red Hook, the focus is predominantly on how air quality and noise affect public health, whereas in Brownsville it's on economic development.) A Governors Island project seeks to understand the interrelationship of weather, vegetation, and air

BIG DATA INTERACTION LAB / CUSP

"The buses in New York are known to be among the slowest in the nation," says Huy T. Vo, assistant professor of computer science. "But that's not entirely true for all lines." Vo's project is analyzing data for the MTA to figure out "which bus lines are bad"—and how bad—and then to use that information to improve the system. Another project analyzes the need for taxis, so that cabs can be in the right places at the right times. The lab has also developed a software program for city developers who are not sure where they want to build; for instance, firms that want to woo families could access data about which neighborhoods might be opening new schools in the near future.

SOUNDS OF NEW YORK CITY / CUSP, STEINHARDT, TANDON

"Brooklyn is a noisy place," says senior research scientist Charlie Mydlarz. Sounds of New York City (SONYC) aims to find out just how noisy. They have sensors sending data on noise levels at 54 sites in Brooklyn, Queens, and Manhattan. "The most complaints come from the areas that are the wealthiest—the Upper East Side, Upper West Side, Midtown," Mydlarz reports. "But that doesn't mean they have the most noise. Parts of Queens and East Brooklyn could be noisier, but maybe people don't feel they have the power to do anything about it." SONYC's data also includes city permits, so reported decibel levels can be cross-checked to see if a construction project is breaching the noise code or has started too early or run too late.

BROOKLYN STORY: Now known as Skylight One Hanson, this commercial and residential property in Fort Greene was once the tallest building in the borough. For 91 years, Brooklynites have set their watches to the four-faced timepieces on the 512-foot-high landmark building; when installed in 1929, these clocks were the largest in the world.

BROOKLYN STORY: COFFEE Circa 1871, brothers John and Charles founded the eponymous Arbuckle Coffee Company, which helped change the way Americans consume caffeine. Previously, homeowners purchased raw green coffee beans, but they frequently rotted before they could be roasted on the buyers' stovetops. Coffee-obsessed John thought it was worth trying to sell small bags of preroasted beans, and after lots of trial and error and patents, their DUMBO operation grew into the largest coffee company in the United States.

CENTER FOR CYBERSECURITY / LAW, TANDON

The center is a joint project of Tandon and the School of Law, "marrying the skills of each," according to cochair Randal Milch (LAW '85). Milch comes from the law side of the marriage, as a trustee and professor of practice at the law school and as a distinguished fellow at its Center on Law and Security. "From an educational perspective, the integration of technical and legal policy skills is deemed to be critical," he says.

The joint program is offering a new master's degree in cybersecurity risk and strategy, with classes in Brooklyn and Manhattan. Although other universities have interdisciplinary programs, Milch says he's "not aware of anyone quite like us. We aren't consumed with pearl clutching. We take a hard-edged, technical view. We regard cybersecurity as dealing with crime, manipulation, and the destruction of material. It's a much bigger issue than privacy." One hot topic at the center is "downscaling" cybersecurity. "The financial community is hugely regulated and has a lot of money to invest in setting the standard for cyberdefense," Milch explains. "But is a little company going to be held to the J. P. Morgan standards? We're trying to think holistically about how a smaller entity can dial back."

MUSIC AND AUDIO RESEARCH LAB / STEINHARDT, TANDON

"Right now [in Manhattan], we have a couple of small rooms and a large room, not all in the same place," says Juan Pablo Bello, associate professor of music technology at Steinhardt and of computer science and engineering at Tandon. When the lab moves to Brooklyn next year, it will not only quadruple its footprint; the space in that footprint will also be custom-designed for "a full three-dimensional volume of sound."

For instance, the current experimental music space can hold about 12 audio speakers; in Brooklyn, it will hold up to 70. There will be three screens instead of one for performing real-time joint concerts with orchestras overseas "and to have an immersive experience from both the visual and audio perspective," Bello says. The physics of sound have been addressed in the dimensions of the music and audio rooms themselves, he adds: "Because of the characteristics of acoustic waves, you need to have a certain height, width, and depth in a space to be able to create completely enveloping acoustics."

The opportunity for collaboration "is a massive plus," Bello says. "Traditionally in universities, people are organized in the same disciplines, but the Brooklyn campus is a collection that creates a cacophony of viewpoints, expertise, and ideas."

BROOKLYN STORY: ARMY TERMINAL On September 22, 1958, Elvis Presley left the building—well, the pier, actually—of the Brooklyn Army Terminal for an 18-month tour of duty in Germany. Completed in 1919 and designed by prominent architect Cass Gilbert, the innovative 4-million-square-foot complex spread across 95 acres in Sunset Park was, upon its construction, the largest concrete building on the planet. It has deployed millions of troops and is now home to local businesses and manufacturing including chocolatier Jacques Torres.

INTERACTIVE TELECOMMUNICATIONS PROGRAM (ITP) / TSOA

ITP is often described as "engineering for artists or art for engineers." Its current Washington Square campus space is "an idiosyncratic old building," says Dan O'Sullivan, associate dean for emerging media. "It holds the quirks and karma of the past 40 years, but it has an immediate feeling of creativity. It's messy. And the elevator is full of people with weird clothes and strange hair colors." In Brooklyn, the shiny new space will be vastly magnified and tailored to ITP's mission. "We're cutting out the second floor so the ground floor has a much higher ceiling" to accommodate the wiring, lighting, and other demands of film, television, theater, and motion-capture studios, O'Sullivan explains. As for the traditional patina of weirdness, that will have to be transplanted. "We'll try to deliver," O'Sullivan promises.

The project *I Took a Pill in China* by Li-Chung (David) Chen (TSOA '18) and Yuan Chen (TSOA '18) used light and sound to explore ancient Chinese music.

CLIVE DAVIS INSTITUTE OF RECORDED MUSIC / TSOA

"What's really cool is that it's the old MTA building—the brains of the transit authority," says chair Jeffrey Rabhan. "It's got secret elevators down to a loading dock where the Brinks truck pulled up back in the days when they used tokens. That dock is now going to be used for live performances." The institute is dedicated to the art of recording, and Rabhan is especially proud of plans to move the studio where legendary local heroes the Beastie Boys made all their records (seen here; a gift from Adam Yauch's widow) into its new Brooklyn home. "They made some of the most important music to come out of Brooklyn," Rabhan says. "We're taking it down and reassembling it and bringing it exactly as it is."

PHOTOS: COURTESY OF LI-CHUNG (DAVID) CHEN AND YUAN CHEN (ITP); COURTESY OF OSCILLOSCOPE LABORATORIES (STUDIO)

BROOKLYN STORY: MUSICIANS It's a bit mind-boggling how many were born in Brooklyn, including the five talents below.