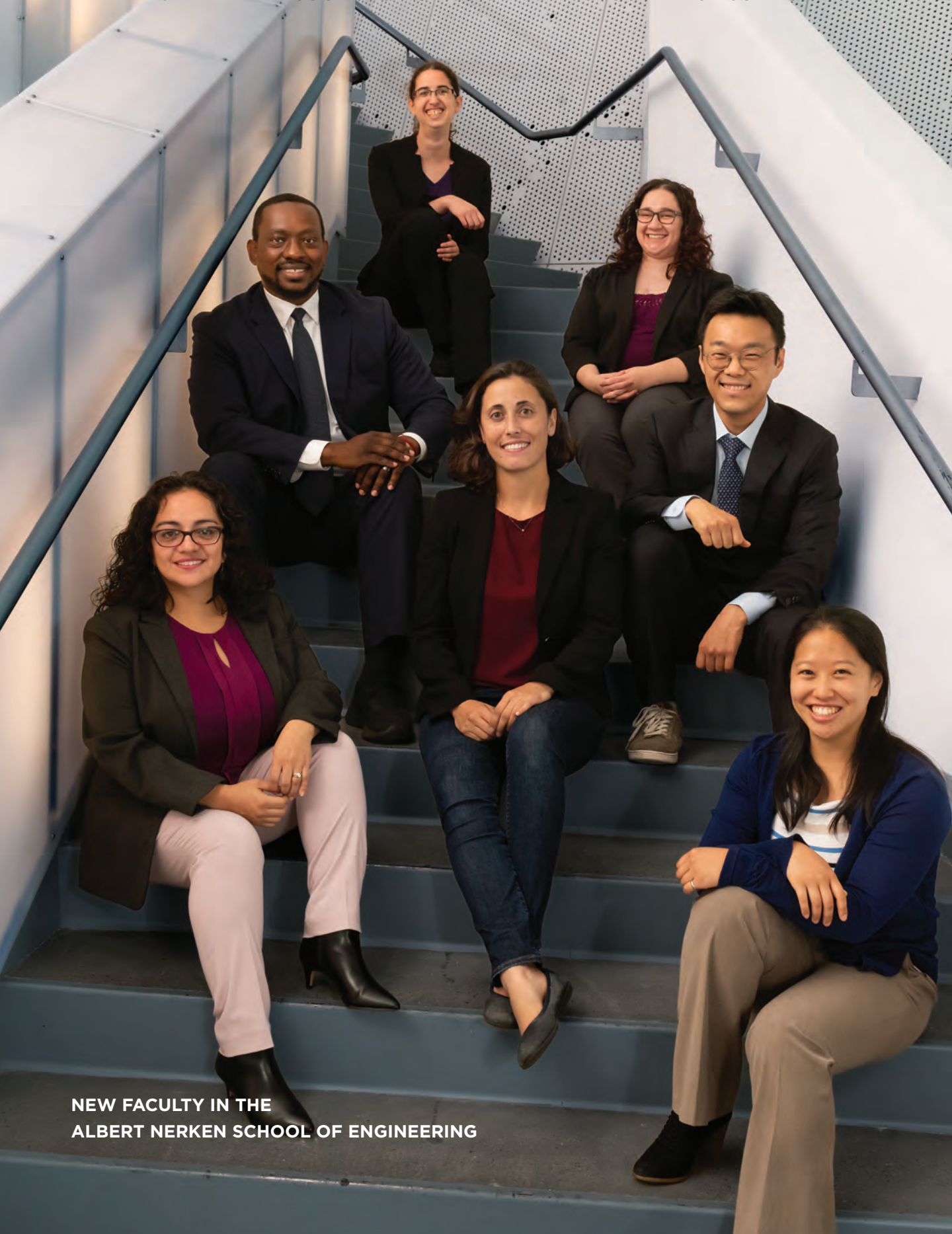


# AT COOPER

FALL 2021

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART



NEW FACULTY IN THE  
ALBERT NERKEN SCHOOL OF ENGINEERING



Argenis Apolinario A'03

Together again, at last. This fall, we are experiencing the resurgence of our community, as students—new and continuing—along with faculty and staff are back at The Cooper Union. The buildings are abuzz with activity thanks to the efforts of faculty and staff to make this return happen safely, and the cooperation of the full community in our health and safety procedures. From required vaccinations—

nearly 99% of our community is vaccinated—to weekly negative COVID-19 tests and masking indoors, everyone is doing their part to sustain in-person teaching, learning, and working together in ways that care for one another. Since the beginning of the semester, reports from each of our schools indicate that students are feeling engaged and connected and that the energy in the classrooms is palpable.

The sense of renewal in arriving on campus this fall has been buoyed by all the progress we continued to make during three semesters of academic life largely online. The challenges of COVID-19 could have easily dominated our minds and work. Instead, we steadfastly focused on the overall health of our institution and accomplished important work more broadly.

- Between CARES Act federal relief and the generosity of our donors, we distributed \$1 million in emergency relief funding to nearly 70% of our students throughout the pandemic. This was direct aid for students who were impacted by the circumstances of the past year, whether losing their own job or home, experiencing a family hardship, or needing equipment or materials fundamental to continuing their education online.
- We continued our track of investing in the academic programs with important, new offerings. Among them, a more structured Humanities and Social Sciences minor, Bioengineering minor, and the Vertically Integrated Projects (VIP) course structure. (See all that's new in the Albert Nerken School of Engineering, on pp. 3-11.)
- Through financial discipline, we also protected salaries, benefits, and Cooper jobs during the pandemic, a position that many peer institutions were not able to share.
- In the last two fiscal years, we also delivered on our financial goals as defined by our 10-Year Plan to Return to Full-tuition Scholarships. In turn, we again held tuition flat (now for three consecutive years and will again next year) and increased scholarship levels consistent with the Plan, continually increasing the amount of tuition we cover for our student body as a whole.

Much of this significant momentum is due to the generosity of donors, funders, and partners who recognize The Cooper Union's vital contributions to academia; student exploration and development; the disciplines of our schools and related fields of study; and New York City and the world at large. As we continue forging our path forward, more supporters are interested in being part of this journey. We welcome you aboard and back to The Cooper Union.

Laura Sparks, President, The Cooper Union

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*On the cover: New Faculty, Albert Nerken School of Engineering | Photo by Leo Sorel*



# HITTING A STRIDE

## **Albert Nerken School of Engineering looks to the future of engineering education**



Mario Morgado

When Barry L. Shoop took the reins as dean of the Albert Nerken School of Engineering in January of 2019, he described the school as being at an inflection point. College graduates were entering a world increasingly defined by technological change and complexity. Dean Shoop set his sights on reinvigorating Cooper's "legacy of innovation," as he calls it—a longstanding commitment to benefiting society through well-rounded, civically engaged education. The result was a six-year strategic plan aimed at preparing graduates to address emerging global challenges, from the implications of increased automation and artificial intelligence to breakthroughs in medicine to the urgent demands of the climate crisis.

Now midway through his 2025 strategic plan, Shoop reports that the school of engineering is making strides towards its goals and there are no intentions of slowing down. Helping Shoop usher in this progress are Lisa A. Shay, who joined in 2019 as the school's associate dean for educational innovation, and Ruben Savizky ChE'98, who became associate dean for academic affairs last year after serving in a leadership role through the school's period of administrative transition. Together, the deans have been looking to the future of engineering education, and the transformative work they are envisioning for Cooper is well underway.



Leo Sorel

Her research on the role of transition metals in provoking a chemical reaction has taken **FABIOLA BARRIOS-LANDEROS**, an assistant professor of chemistry who joined Cooper in 2020, to labs and classrooms in the United States, Mexico, Canada, Switzerland, and France. A brief sampling of her research-and-teaching travels include a Frontiers of Science fellowship at Columbia University, post-doctoral training in Basel, and a sabbatical semester in Paris conducting research at the École Normale Supérieure. The common denominator in Barrios-Landeros' travels is a commitment to making science education available to everyone and to increase diversity in STEM fields. She said in an interview this summer, "If my journey is an inspiration for someone else, so be it. And that's something that doesn't come from any book; it can only come from me."

A graduate of the National Autonomous University of Mexico (UNAM), Barrios-Landeros earned her M.A. and Ph.D. at Yale in organometallic chemistry, and today her central research focuses on developing a novel aromatic acyloxylation reaction catalyzed by copper compounds. While a professor at Yeshiva University for nine years, she taught chemistry and conducted research with undergraduate students, mentoring five honors theses and receiving a 2014 Cottrell College Science Award by The Research Corporation for Science Advancement.

## NEW FACES ON COOPER SQUARE

One of the most notable changes has been the addition of seven full-time engineering faculty members over the last two years. With most of the lines opened as a result of retirements, the new hires constitute a 21 percent change in the school's tenured and tenure-track faculty and "bring energy and excitement, currency of disciplinary expertise, and a breadth of pedagogical skills," according to Dean Shoop. "A turnover of this scale in such a short time represents an exciting new beginning that can only contribute to our relentless pursuit of educational excellence."

Growing the school's faculty of accomplished researchers and professionals has helped advance several of Shoop's strategic goals—particularly a focus on sustaining educational excellence by drawing upon diverse experiences. He notes that 33% of the school's full-time faculty are now women, up from 18% just three years ago. The engineering student body has grown more diverse too, while the quality of students remains as high as ever: this year's incoming Class of 2025 comes from 13 countries and is comprised of 15% underrepresented minorities, 40% women, and 21% first-generation college students.

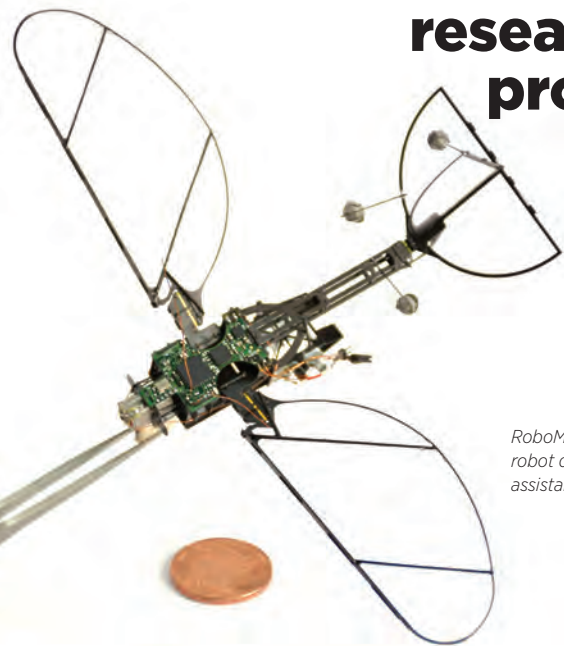
"The literature is replete with studies confirming that students succeed at a higher level when their faculty represent the diversity of the students," explains Shoop. It is also important for the school's definition of diversity "to encompass all aspects of human differences, including a broad variety of personal circumstances, experiences, perspectives, and opinions."

The Cooper Union's historic emphasis on educating students from all walks of life was a compelling factor for many of the hires, including Fabiola Barrios-Landeros, who hopes to serve as a role model for women and students of color: "I have a deeply personal sense of duty to nurture an inclusive campus, to support underrepresented minorities, and to bridge the gender gap in STEM." She says she was drawn to the school of engineering's commitment to diversity and inclusion as core values: "As a Latina, these topics resonate with me. My number one passion is education of science, so I just knew this was my spot."

## FUNDING INNOVATION

Another major focus for the deans has been encouraging work at the intersection of disciplines. Dean Shoop introduced an Educational Innovation Grant in 2019 to support faculty-led efforts aimed at experimenting with leading-edge pedagogies and widening the scope of engineering curricula to address timely and socially significant issues.

# growing the school's faculty of accomplished researchers and professionals



*RoboMoth is an insect-scale, flapping-wing robot developed by Michelle Rosen, assistant professor of mechanical engineering.*

For example, the grant funded a Spring 2021 course called Introduction to Sustainability and Alternative Energy Technologies, which drew students from all three of Cooper's schools. Co-taught by Amanda Simson, assistant professor of chemical engineering, and Benjamin Davis, professor of chemical engineering, it explored how sustainable technologies and alternatives to fossil-fuel-generated electricity relate to broader questions that cut across different fields and areas of expertise. As Davis explains: "The course taught students about environmentally and socially responsible technologies to give them perspective on how we must make things at scale for our growing and increasingly affluent global population in an equitable way, while still having minimal impact on our valuable ecosystems."

Momentum has also been building for another area of societal importance: bioengineering. Last year, the school of engineering received a \$1.6 million gift to unify and raise awareness of bioengineering and biomedical education, research, and project activities. This three-year grant provides funding for a Distinguished Professor of Bioengineering, summer salaries and research expenses for five faculty researchers, five graduate research fellowships, and five undergraduate research assistants. The grant will also support curricula as part of a new bioengineering minor officially approved last spring and opened to students this semester.



Leo Sorel

**JA-BEOM "JB" KOO** always knew he wanted to teach. But the new assistant professor of electrical engineering thought he could serve students best if he had first-hand knowledge of the industries they'd be entering. So after earning his Ph.D. from the University of Washington in 2016, he took a position at Intel designing microprocessor chips for radio-frequency circuits such as WiFi and Bluetooth. He loves engineering and plans on continuing his research in that area, but teaching is equally critical to him. He was drawn to Cooper to work with students directly both in the classroom and the lab.

Professor Koo knows many engineers in industries related to electrical engineering; he plans to help students connect with those associates to secure internships and jobs. He sees this as a critical aspect of his role at Cooper and has already disseminated information about spots at Google: "I'm working hard to connect students more closely to the industry because right now I've heard that the only way students can connect to the industry is through career fairs. I want to open more opportunities in industry for students."





Leo Sorel

**CYNTHIA LEE** joined The Cooper Union in the Summer of 2020. With a Ph.D. in civil engineering from Georgia Tech, she brings expertise on subjects of dire importance as the world adapts to climate change. Her dissertation details innovative ways to use artificial intelligence to monitor infrastructure using data integration and machine learning while also studying infrastructure systems to determine and fix their vulnerabilities.

During her first months at Cooper, she worked with colleagues on reorienting the introductory engineering course, EID101. She directed her section to focus on critical infrastructure and resilience, a topic general enough to give students a great deal of latitude but specific enough to underscore a particular goal in civil engineering. Class members worked on one of three topics of urgent relevance to the city: airflow in subway tunnels; localized flooding; and data visualization for roadway damage. She notes that “this was an opportunity for students to zoom out and think about the applications of the field as it exists in the city that they are going to be in. Not all, but many of them are from New York City.”

## encouraging work at the intersection of disciplines



Marget Long

“It’s a really exciting time to be at Cooper if you’re interested in bioengineering,” says Shoop. “This large grant will allow us to bring together and solidify all of the diverse bioengineering and biomedical activities that have been going on here.”

Last spring, Dean Shoop moderated a symposium on the intersection of healthcare and engineering to highlight ongoing biomedical research by Cooper faculty and students, including five mechanical engineering seniors working on their capstone project under Eric Lima ME’02, professor of mechanical engineering. The group’s project builds on Professor Lima’s research related to medical devices by designing a catheter meant to increase collateral blood circulation to people who have suffered an acute ischemic stroke.

Over the summer, Lima was named the inaugural Distinguished Professor of Bioengineering. He is co-directing a new program with collaborators at Icahn School of Medicine at Mount Sinai (ISMMS) designed to introduce engineering students to nephrology, a branch of medicine concerned with the physiology and diseases of the kidneys. “I expect really great things to evolve over the next few years,” Lima says. “We have the minor, we have the faculty, we have the funding for research, and we have the avenues for students to continue to graduate work or clinical work after they graduate.”

Support for innovation has also come from the IDC Foundation, a charitable organization that provides grants to institutions in the New York City area to advance research and education in fields related to architectural design, engineering, and building construction. In 2018, The Cooper Union received \$2 million to develop the IDC Foundation Art, Architecture, Construction, and Engineering (AACE) Lab, which officially launched operations last December and provides a space for students to collaborate with their peers in other disciplines. This past spring, the organization granted Cooper an additional \$400,000 for a three-year IDC Foundation Innovation Initiative.

The initiative will provide opportunities to expand and integrate work across Cooper on two different fronts: an AACE Lab Advancement Fund, which supports faculty and students who are incorporating the lab into curricula or using the lab's resources for projects, and an Innovation Fund reserved for deans to launch new courses. This fall inaugurates the first full year of funding, initially supporting several team-taught courses that involve engineering faculty, including a course on machine learning and the built environment and a course on health and design.

"The additional three-year grant will enhance curricula and embrace opportunities for innovation," says Raymond R. Savino, president of the board of directors of the IDC Foundation. "The Foundation looks forward to seeing the exciting advances that Cooper's faculty and students will achieve."

## PROJECT-BASED LEARNING

Dean Shoop's goal of elevating a culture of collaboration and innovation in the school of engineering has also led to reevaluating students' first-semester experience—in particular, the required project course Engineering Design and Problem Solving (EID101). In the lead-up to the Fall 2020 semester, a group of faculty members along with Associate Dean Shay reimagined EID101 to incorporate participatory design and to see if the course could serve as a space for engineering first-years to form social connections. The faculty members drew inspiration from the 2020 Olin College Summer Institute, a weeklong virtual workshop dedicated to helping educators design student-centered learning experiences.

"Participation in pedagogy workshops and engaging in research in engineering pedagogy directly support the strategic goals of student success and educational excellence," explains Shay. "Not only is this good for our students, but through collaboration our faculty also gains a new appreciation for each other's gifts."



Leo Sorel

**ALICE PISANI**, assistant professor of physics, came to The Cooper Union to teach and do research in her field of cosmology. "My main topic of research is looking at the largest regions in the universe. I find regions where there are very few galaxies and those are called cosmic voids. But they're not really voids; they're just under-dense or have fewer galaxies. We know that the universe is expanding at an accelerated rate, but we don't know why. We're seeing that the universe is made up of 70% dark energy, and it turns out that cosmic voids are dominated by dark energy. So if we want to understand this component, it's a very good place to look."

Pisani, who is Italian and earned her Ph.D. in Paris, has a joint appointment with the Center for Computational Astrophysics (CCA). She is eager to engage Cooper students in projects that make use of CCA's facilities and that combine computational astrophysics with other areas of expertise.

"Extracting cosmological information from cosmic voids using machine learning is something that could be done jointly between the two institutions," she says. Pisani would also like to work with Cooper art students on creating visualizations based on data: "It's very hard because cosmic voids are emptier regions... and sometimes in papers we have algorithms that are able to find those regions using galaxy maps, and then we have to illustrate those. And, of course, this is extremely difficult to do in 2D."



Leo Sorel

**ABIGAIL RAZ**, a new assistant math professor, is looking forward to working with students in person and “to get to work with those first-year students who have gone through their last year of high school virtually and have had what I imagine to be an incredibly challenging experience.”

Raz, whose research focuses on a field known as combinatorics or discrete math, gleaned useful information about class participation during the semester of online teaching. She found that students were more likely to participate using the chat function of the class software—an area of the interface that lets participants write their observations or questions—than they were speaking aloud. Now that she and her students are back in the physical classroom, she lets students jot down their ideas or questions, and then responds either one-on-one or in the following class.

At a school the size of Cooper, she notes, teachers can respond to students’ learning styles and create innovative learning experiences. “That’s been really exciting to just be in a place that wants a top-notch undergraduate pedagogy and to do that we need to be trying new things. And Cooper seems very open to that.”

The reimaged EID101 course, built around topics under the theme of “Engineering for Social Good,” includes small project teams and a new undergraduate student mentorship model. Giving first-years the chance to learn from upper-level classmates proved especially important in the last year of online learning, supplementing the work of Associate Dean Savizky who has been advising new students and leading a seminar series to help them get acclimated to Cooper.

Multi-year collaboration is also the centerpiece of a course structure known as Vertically Integrated Projects (VIP), a concept pioneered by professors at Purdue University and being spearheaded at Cooper by Neveen Shlayan, associate professor of electrical engineering. VIP courses allow students to participate in long-term projects with peers from other disciplines while solving real-world problems. The initiative launched last year and now includes several team projects, including Smart Cities, Solar Decathlon, Cooper Motorsports, and Bioengineering.

Melody Baglione, professor and the George Clark Chair of Mechanical Engineering, is co-teaching and leading the development of the VIP Solar Decathlon course alongside David Wootton, professor of mechanical engineering, and Cosmas Tzavelis, professor of civil engineering. The course is organized around a U.S. Department of Energy-sponsored competition and is among those that received support from the IDC Innovation Fund, which allowed for the addition of Julián Palacio, a practicing architect and adjunct faculty member from The Irwin S. Chanin School of Architecture, as a co-instructor. “In the real world, architects and engineers work together all the time,” says Baglione. “So, this is new in that it’s a systematic way to collaborate. It’s a great opportunity for students to learn from each other.”

She says last year’s Solar Decathlon VIP experience drew students from all four engineering disciplines to work virtually with architecture students on responding to the theme of the 2021 Solar Decathlon, which challenged teams from colleges across the country to design and build low-carbon buildings that mitigate climate change while improving quality of life. Cooper’s design submission was a proposal for a New York State Homes and Community Renewal Vital Brooklyn site and consisted of modular-constructed affordable housing for at-risk homeless populations and a community-based health clinic.

The students and faculty met regularly with design partners from Magnusson Architecture and Planning and BrightPower as well as NYCHA urban designers and a mechanical



# elevating a culture of collaboration and innovation



Marget Long



Leo Sorel

**MICHELLE ROSEN**, who began teaching as an assistant professor of mechanical engineering in Fall 2021, knew what she wanted to study the day a professor at the University of Maryland showed her work building miniscule, jumping robots modeled after insects. She asked herself how she could merge these tiny robots with her other research interest, computational fluid dynamics. “This world of bio-inspired flying, small robots opened itself up, and so I did my Ph.D. at Harvard building these large insect-scale flying robots.”

Her work today involves studying biological models to improve robotics: “improving efficiency, improving agility, all the stuff that nature is really, really good at and robots are not.” She was drawn to The Cooper Union because of its emphasis on teaching, and the intellectual abilities of its students. Robotics, she believes, is an ideal subject to teach scientific principles in the lab. “It’s very hands-on. Students can get in and build something, and Cooper’s emphasis on that was what really attracted me.”

Noting differences between Cooper and Harvard, Rosen says that the emphasis on undergraduate education is obvious at Cooper. “Research happens [at Cooper] and it keeps faculty’s work relevant, but it also exists to help teach undergraduates how to conduct research.”

engineering alumnus from Arup. The team produced a design they call the Solar Hinge, so named because it consists of two “hinged” building volumes, one aligned with Brooklyn’s street grid and the other rotated according to the path of the sun. The project landed them among the finalists in the multi-use, multifamily design division of last spring’s national competition.

## RESEARCH AND TEACHING PARTNERSHIPS

The goal of boosting collaboration, which Shoop sees as “the heart of innovation,” is also being realized through research that extends beyond the walls of Cooper. “Deliberative and selective strategic partnerships bring complementary strengths that can provide students with diverse and rich opportunities,” says Shoop, citing the school’s partnerships with Memorial Sloan Kettering and with the Graduate School of Biomedical Sciences at ISMMS.

Having access to world-class facilities and researchers has especially benefited work related to bioengineering, including a fruitful research exchange between Jennifer Weiser, assistant professor of chemical engineering, and Dr. James Iatridis, professor and vice chair for research in the department of orthopaedics at Mount Sinai. In September, Weiser and her graduate student, Keti Vaso ChE’19 M.Eng’21, co-authored a publication with Dr. Iatridis and his students—among them



Leo Sorel

For **KAMAU WRIGHT**, beginning the next phase of his career at The Cooper Union is a homecoming of sorts. A Brooklyn native, the assistant professor of mechanical engineering is excited to bring his specialties—thermo-fluids and plasma engineering—not only to Cooper but to the larger community. “I want to help broaden participation in engineering by developing pathways for students in schools around the city, to learn, to become engineers and scientists, to pursue lifelong learning, and to use their technical knowledge to flourish and positively benefit society.”

Wright’s research centers on using plasma to clean water and decompose carbon dioxide by splitting it into oxygen and carbon monoxide. With plasma acting as an oxidizer, water can be cleaned, bacteria can be killed. “Plasma is referred to as the fourth state of matter—more energetic than solids, liquids, and gases. Lightning is plasma; the aurora borealis is plasma; the sun’s surface is plasma. Plasma is actually the most prevalent form of matter in the visible universe.”

Wright believes in collaborative, inquiry-based learning. “Undergraduate research can provide a transformative experience for students, helping to boost their trajectory.” Not only do they learn lab skills, they can leverage their experience into internships and post-graduate work.

## participate in long-term projects with colleagues from other disciplines



recently graduated doctoral student and Cooper alumnus, Tyler DiStefano ME’15. Their research looks at the use of injectable biomaterials to help treat patients with back pain due to degeneration of discs between vertebrae.

The Weiser-Iatridis team also works on a project involving undergraduate and master’s students from Cooper who are studying air flow in operating rooms using computational fluid dynamic models. Alumnus Christopher Panebianco ChE’16, now a Ph.D. candidate at ISMMS, has been collaborating with Iatridis and Weiser as well. The three of them presented at the 2021 American Society for Engineering Education conference on designing outreach opportunities with experiments that could be performed safely at home during the pandemic.

Cooper’s newest external partnership has come in the form of a joint tenure-track appointment with the Center for Computational Astrophysics (CCA) of the Simons Foundation’s Flatiron Institute. Alice Pisani, assistant professor of physics, was hired into this three-year joint appointment and will divide her time evenly between teaching at Cooper and conducting research in cosmology at CCA.

Pisani foresees multiple opportunities for Cooper students to collaborate on interdisciplinary projects at CCA, a boon to both institutions—and to Pisani herself who values working with a host of researchers, both students and professionals. “If you always just work on the same team, there’s not a lot new that comes out after a while. Now we have a chance to connect with other experiences and expertise on different projects. And this is really how new ideas come out in science.”

## **BUILDING A COMPUTER SCIENCE PROGRAM**

Reflecting on all that the school of engineering has already accomplished, Dean Shoop remains no less ambitious about the next three years, noting that the school is positioned to continue moving in directions that will enrich academic offerings across the board. He is particularly enthusiastic about launching a new degree program in computer science (CS), which has become one of the fastest-growing areas of higher education.

“The fact that computing and software is absolutely integral to all engineering disciplines is one element of the need for a computer science program,” he says. The conspicuous absence of a CS major is something Shoop has wanted to remedy since his arrival at Cooper. “No longer can engineers practice their discipline without computing skills.”

Last year, the dean and several engineering faculty members formed a committee to plan a CS program offering degrees at the bachelor’s and master’s levels. Drawing on the best aspects of similar programs across the country, the group developed a curriculum that would uniquely reflect Cooper’s values and academic strengths, including an emphasis on disciplinary rigor, peer mentorship, and small class sizes conducive to collaboration and project-based learning. The latter focus would require students to take project-oriented courses during all four years, including a junior-level course called Software Design Studio in a nod to the schools of art and architecture.

Naturally, interdisciplinarity was essential to the curriculum design. “Computer science will elevate all of the other engineering programs,” says Shoop. Fred Fontaine EE’86 M.Eng’87, chair of the electrical engineering department and a member of the CS planning committee, agrees: “It’s this T structure. You need the breadth, including this interaction with the engineering students and taking some engineering courses. There’s also the depth where they can really focus on the computer science.”

The new CS curriculum was officially approved by the full faculty in April, with the eventual goal of achieving ABET accreditation. But making the program a reality will require financial support. The school is now seeking the funding to launch it while vowing that none of the cost would be offset by tuition increases.

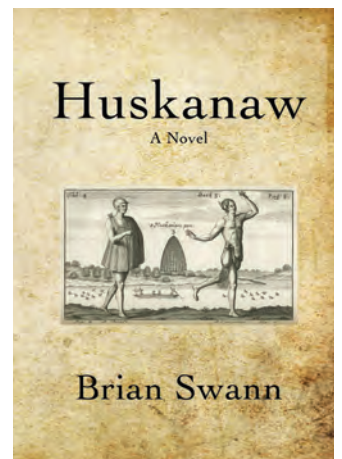
“The goal is to offer a world-class computer science program that lives up to The Cooper Union’s historic mission and reputation for rigor and innovation,” says Dean Shoop. “This curriculum will provide opportunities in the coming years not only in engineering but across the entire institution. It will bring important skills and abilities in mathematics and natural science and modernize our existing engineering majors. Similarly, advances in computing are transforming every aspect of contemporary life, including art and architecture. Computer science enables new paradigms for the experiences of making and appreciating art and new concepts and methods that are revolutionizing architectural design and building processes.” In short, says the dean, “Exciting things are still to come.” ●



# ONCOOPE



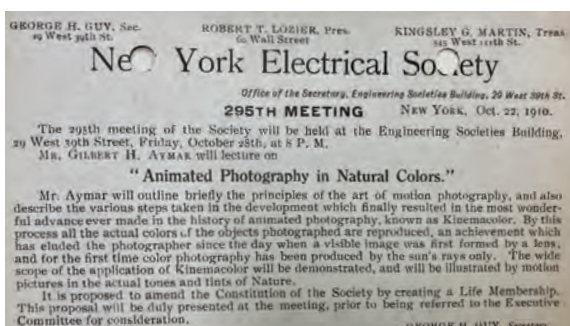
INAUGURAL LATINX ARTIST FELLOWSHIP AWARDED TO FACULTY AND ALUMNUS  
COCO FUSCO, PROFESSOR IN THE SCHOOL OF ART, AND JUAN SÁNCHEZ A'77 HAVE BEEN NAMED LATINX ARTIST FELLOWS



INCOMING CLASS 2021  
MEET SOME OF THE NEWEST MEMBERS OF THE COOPER COMMUNITY

BRIAN SWANN

BRIAN SWANN, PROFESSOR OF HUMANITIES, PENS NOVEL SET IN THE 17TH CENTURY THAT FOLLOWS THE LIFE OF JOHN CROWE, FROM THE CAMBRIDGESHIRE FENS TO POWHATAN'S VIRGINIA



COOPEROLGY:  
STORIES FROM  
THE ARCHIVE

READ "EXPERIMENTS WITH ELECTRICITY," ONE OF COOPER ARCHIVIST MARY MANN'S RECENT BLOG POSTS FROM THE COOPER LIBRARY COLLECTION

# ROOTEDU

## /AT-COOPER/FALL-21

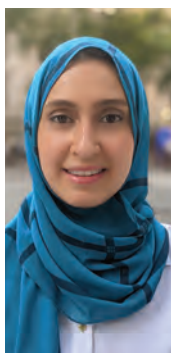


### WATCH COOPER'S FIRST INDIGENOUS PEOPLES' DAY PUBLIC PROGRAM

"WE WILL ALWAYS BE HERE" ON [YOUTUBE.COM/COOPERUNION](https://www.youtube.com/cooperunion)

### STUDENT MENTORS AND EID101

THE REQUIRED FIRST-SEMESTER ENGINEERING PROJECT AND DESIGN COURSE ADDED PEER MENTORS TO HELP REMOTE LEARNERS FIND THEIR FOOTING



### GRANT TO MEASURE INEQUALITY

LOUJAINA ABDELWAHEB, ASSISTANT PROFESSOR OF ECONOMICS, WAS AWARDED A GRANT FROM THE WASHINGTON CENTER FOR EQUITABLE GROWTH TO TRACK INEQUALITY AMID THE PANDEMIC



### SCHOOL OF ARCHITECTURE ARCHIVE AWARDED IMLS GRANT

THE INSTITUTE OF MUSEUM AND LIBRARY SERVICES AWARDED THE ARCHIVE A GENEROUS GRANT TO SUPPORT ITS EXHIBITIONS COLLECTION



### ROME PRIZE TO CU ALUMNI

FIRELEI BÁEZ A'04, ERIC MACK A'10, AND WILLIAM VILLALONGO A'99 (ALSO AN ASSOCIATE PROFESSOR IN THE SCHOOL OF ART) ARE AWARDEES IN VISUAL ARTS



### DANIEL ARSHAM A'03, 2021 ROBERT GWATHMEY CHAIR

TEACHING A LECTURE COURSE ON SCULPTURE AND THE EVOLUTION OF DESIGN AESTHETICS



### AACE-MADE SWAG

JEANNETTE CIRCE ME'21, NEW PRESIDENT OF COOPER'S ASME CHAPTER, GAVE OUT SOUVENIRS SHE CREATED IN THE AACE LAB DURING AN ORIENTATION EVENT



# NEVER FAR FROM PRESENT

## Kenneth Tam A'04 at the Queens Museum

For Kenneth Tam, a 2004 School of Art graduate, the most significant stories are the ones that often go unheard. During the early months of the pandemic, for example, the Brooklyn-based artist set out to document and shed light on the disturbing rise in violence and discrimination against Asians and Asian Americans. By March 2020, he began circulating an online spreadsheet asking people to share their experiences of anti-Asian racism, drawing together a wide range of encounters and altercations that might otherwise have gone underreported, particularly amid the sudden isolation of lockdown. The goal, as he describes it, was “to make heard what is often relegated to silence and shame.”

“The spreadsheet quickly took on a life of its own,” Tam says. “It was a very moving and obviously troubling document to read.” The outpouring of responses brought Tam into contact with others working in the art world and inspired them to formulate a collective response, out of which was born StopDiscriminAsian (SDA), a coalition of arts and culture workers committed to mobilizing against racism, xenophobia, and violence towards diasporic Asians. Over the last year and a half, SDA has organized to bring awareness and visibility to these issues, designing posters to hang in Asian communities, hosting online panels and discussions, commissioning artworks, and drafting a widely circulated statement against white supremacy in the arts following the murder of George Floyd.

“I think this intense period of organizing has certainly opened up a space for me to reimagine my own role as a cultural worker, one that is less focused on an individual practice as an artist but more on building community and solidarities across racial and class lines,” Tam says.

In his recent work, Tam is attuned to the silencing of struggle—particularly where it occurs in the gaps, omissions, and disconnections of dominant narratives. *Kenneth Tam: Silent Spikes* (2021), his solo exhibition at the Queens Museum this past spring, featured an ongoing series of video and sculptural work that makes use of tropes and conventions specific to the Western. “I wanted to place Asian American men into a space that they have typically been excluded from,” he says. *Silent Spikes* includes a two-channel video of Asian American men dressed in Western attire, directed



Christian Carroll





Silent Spikes. 2021. *Midnight Moment* presented by Times Square Arts

Maria Baranova

to imitate and reinterpret some of the gestures and body language associated with what the artist describes as “the hegemonic masculinity that figures like cowboys represent.”

“The mythos of the cowboy carries significant weight within the popular imagination, and in many ways functions as a shorthand for how this country understands itself and what values it finds most desirable,” observes Tam. “At the same time, the American frontier as depicted in cinema is a very white space, one that largely pushes non-white characters to the periphery, or erases their presence completely.” His use of Asian performers aims at complicating and playing with the cowboy archetype while another segment of video—a slow-moving shot through a rail tunnel—calls forth and narrates the “silent” 19th-century history of Chinese laborers who built America’s railroads.

“Large groups of Chinese migrants worked in mining, agriculture, and of course infrastructure in the West, but you would never know that watching Westerns,” he explains. “I wanted to address both of these issues and see how the struggles in the past can continue into the present.” *Silent Spikes* makes particular reference to the labor strike led by Chinese Transcontinental Railroad workers in 1867. “So often



the history of Asians in America feels fragmented and disconnected, with each successive wave or group of immigration obfuscating the stories of those that came before,” adds Tam. “I wanted to suggest that they actually exist in overlapping ways. History and the past are never far from the present.”

*Silent Spikes* was also exhibited as a Midnight Moment, curated by Times Square Arts and presented nightly through the month of June across synchronized electronic billboards in Times Square. Next year, the show will travel to Ballroom Marfa, an art center in Marfa, Texas. Tam continues to produce works to augment the exhibition, though the restrictions of the lockdown have made it more difficult for the artist to work in close proximity with others.

“I’m interested in working with groups of individuals to look at how intimacy is created and negotiated, particularly between groups of men,” he says. Movement and embodiment are central to his practice, which spans video, performance, time-based media, installation, photography, and sculpture. “I would say that my interest in working across disciplines was something that began during my time at Cooper, even though it took many more years before I started to stitch things together in a coherent way.”

Tam, who holds an M.F.A. from the University of Southern California, arrived at The Cooper Union by way of the Saturday Program during high school. “All the instructors were current or former Cooper students, and they really impressed upon me how special Cooper was, both as an education and a community. I think



*Installation views*  
Kenneth Tam: *Silent Spikes*, 2021  
Queens Museum



Jason Mandella

the general ethos of the school, which was one that encouraged thinking fluidly across disciplines while maintaining a high level of rigor and criticality throughout, continues to inform my work.” It wasn’t until after graduating that he began experimenting in performance and video, inspired by artists such as Adrian Piper, VALIE EXPORT, and Patty Chang: “I liked the immediacy of using one’s body as a material, and the way it could very quickly address social systems and try to find ways to disrupt them.”

Despite the challenges of the pandemic, Tam says his organizing work with SDA has provided valuable opportunities for reflecting on the relationship between art and social disruption, particularly after the murder of George Floyd in 2020 galvanized large numbers of anti-racist activists across the art world: “This dovetailed with very public calls for accountability at arts institutions across the country,” he explains. Tam sees artists and artistic production as occupying a critical role in agitating for change.

“Artists have tremendous power to start conversations and focus the public’s attention around issues like anti-racism,” he says. “I would urge us all to continue the hard work of organizing for the kinds of changes we want to see in our lives. Very often we sideline activism when things like career demands monopolize our attention, but I think this pandemic has shown that the world we occupy as arts workers is an extremely precarious one, and we really need to think about what systems we want to uphold or participate in.” ●



# DESIGNS FOR LIVING

## Cooper Faculty at the 2021 Architecture Venice Biennale

For this year's Architecture Venice Biennale, the 17th in the history of the event, the architect and curator Hakim Sarkis posed a question borne of our era of divisiveness: How will we live together? Architects and artists from The Cooper Union were among the 112 participants to respond to Sarkis's query for the event, which opened on May 22 and runs until November 21. Sarkis, dean of architecture at the Massachusetts Institute of Technology, sees growing income inequality, hardening political stances, and the dramatic impact of climate change as factors that design must address as a field predicated on collaboration both in the creation of space and in its use. Citing the needs for architects to work with builders and engineers as well as planners and politicians, Sarkis says that this year's Biennale, which had been postponed by a year due to COVID-19, "asserts the vital role of the architect as both cordial convener and custodian of the spatial contract."

One of the many Cooper teams to respond to Sarkis' challenge included professors from The Irwin S. Chanin School of Architecture: Associate Dean Hayley Eber, a 2001 Cooper graduate, Lauren Kogod, Lydia Kallipoliti, Nora Akawi, and Ife Vanable. Their exhibition, entitled *Microcosms & Schisms*, examines interior and exterior spaces of New York City to discern how architecture is used both to segregate groups and to unify them. In crafting a response to "how we live together," Eber said, the team needed to examine the notion of "we," noting that the term "refers to a fictive entity and that any assumption of a unified 'we' is at best doubtful. We can become a provisional 'we' in some contexts and, in so many others, access is denied, the sense of place-and-kin withheld or cancelled, 'otherness' established and architecturally embodied."

Their own "we" had been seriously altered as a result of the pandemic. "[It] created an interesting set of challenges for us in dealing with how to exhibit the work, but more so executing a very collaborative and physical installation with the team scattered across the globe," said Eber. The group's work was supported by grants from the IDC Foundation, which had originally been earmarked for travel, but instead covered installation material costs after the Biennale was delayed.

They divided their analysis into four collectives led by the Cooper professors working with graduate students: spaces of sanctuary, deep segregation, parks, and microclimates. A model train that runs throughout their exhibition acted as a connective tissue among these four elements and signified the role of the subway in New York City during the public health crisis. "Each train line in many ways represented a world," said Eber. "An immersive lived territory but also a space of imagination, of imagining other lifelines that were cohabiting the same city."

During the pandemic, they noted, each of the four zones became further entrenched in their roles as spaces of isolation or immersion. Not surprisingly, the



In the Cooper tradition of professors who are active in their fields, members of the current faculty showed their work at the 2021 Venice Biennale. *Microcosms and Schisms*, an exhibition that looks at New York through four lenses—by Nora Akawi, Hayley Eber—associate dean of The Irwin S. Chanin School of Architecture—Lydia Kallipoliti, Lauren Kogod, and Ife Venable.

roles of race, gender, and class cut across all four zones; the notion of “sanctuary spaces,” for instance, conjures inherently class-based divisions, where for the wealthy it might mean a luxurious pied-a-terre apartment along the High Line while for poor and undocumented immigrants it means protection from the threat of forced confinement or deportation. Parks, in the team’s estimation, serve as the only true civic spaces, ones that during the pandemic transformed from an amenity to a necessity.

The late Diane Lewis AR’76, a renowned architect, author, and Cooper professor, may very well have agreed. She centered much of her teaching, writing, editing, and designing on the invaluable role of civic spaces in creating great cities, influencing scores of Cooper students via her fourth-year studio. Her outsized impact on architectural practice and theory was celebrated at this year’s Biennale with an exhibition entitled *Conceiving the Plan* curated by Yael Hameiri Sansaux AR’10 and Alessandro Melis, who succinctly describe Lewis’s core architectural belief: “For Diane Lewis the city was not only the result of a great number of historical, inextricable strata of form and memory. It was also greater than the sum of its individual architectures, and a mental universe all its own.” The two curators asked 12 architects, including Mersiha Veledar AR’03 of the Cooper architecture faculty, to exhibit proposals in keeping with Professor Lewis’ conceptual framework for analyzing cities.

According to Margaret Matz, a 1983 Cooper architecture graduate and former CUAA president who worked closely with Lewis, Venice, which this year celebrates the 1600th anniversary of its founding, is the appropriate setting for celebrating and revisiting the ideas advocated by Lewis, who saw the *campi* of the city as a stage for the *Commedia dell’arte* and, as Matz put it, its “emerging revolutionary public expression” that eventually migrated to Paris and influenced public discourse

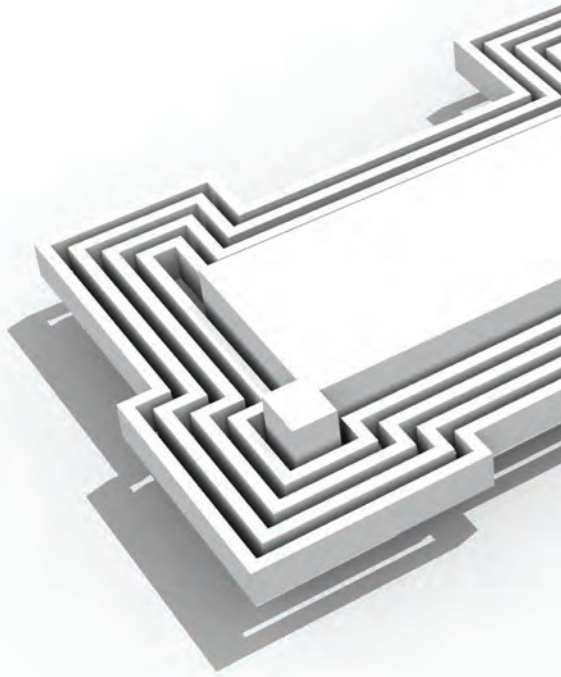
there. Matz and other architects have produced “Venice Masked” as a complementary exhibition to *Conceiving the Plan*, a set of projects inspired by Lewis that propose ways to conceive of public space in Venice. Matz’s fellow curators for the project include Paola Barcarolo and Cooper alumni Frank Gerard Godlewski AR’82, Drew Knapp A’75, and Donato Giacalone AR’83 of Salam & Giacalone Architects PC.

In the *Arsenale*, the central exhibition space of the Biennale, Dean Nader Tehrani continues his experiments with Cross-Laminated Timber (CLT) with a portico at the hall’s terminus and a housing prototype within. This last is part of a project Tehrani’s firm NADAAA calls “Other Ways of Living Together” and considers ways that existing environments—urban, rural, and suburban—may be re-viewed via material and new interpretations of zoning laws to create living spaces more in line with what the firm calls this “moment of reckoning in relation to current environmental and social challenges.” NADAAA’s work can also be seen in Future Assembly, a curatorial initiative meant to respond to Sarkis’ request that architects “imagine a design inspired by the United Nations—the current paradigm for a multilateral assembly.” Tehrani and company presented an animation of the Zayandeh-rud River Basin in central west Iran, an area that had been dammed in 1971. The animation combines aerial views of Isfahan, just to the north of the river basin, and a planimetric scan. As the capital of Persia under Safavid rule (1501-1736), Isfahan was renowned as a city of canals, waterways that dried after the damming of the Zayandeh-rud and caused severe drought in some parts of the river’s watershed. (Haunting photos show bridges spanning desiccated riverbeds.) Tehrani’s animation reveals what the city had been before the river was dammed and the ways that the urban fabric had been predicated on the existence of water.

Professor David Gersten, who graduated from Cooper in 1991, has brought an exhibition entitled *SunShip: The Arc that Makes the Flood Possible* to Venice this year. The project is part of a collective he and others founded ten years ago, Arts Letters & Numbers. The group is dedicated to gathering thinkers from many disciplines—what Gersten calls a “giant diversity of voices”—to bring



Paola Barcarolo and Margaret Matz AR’83 contributed to Venice Masked, an exhibition intended to prompt discussion of the future of public space in Venice.



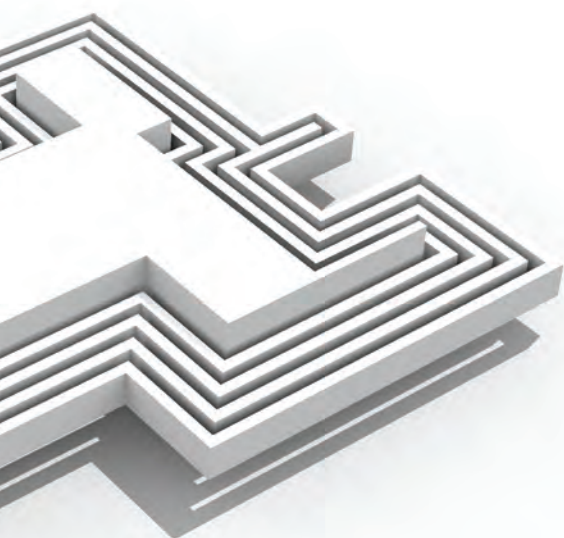
SunShip: The Arc That Makes The Flood Possible, Arts Letters & Numbers exhibition in the CITYX Venice Italian Virtual Pavilion.







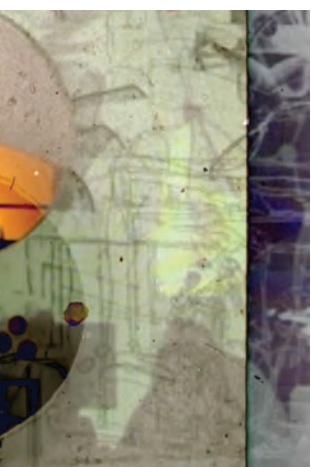
Nader Tehrani's exhibited works included an entry portal and vaporetto stop, made of cross-laminated timber and designed to be easily assembled and disassembled.



Conceiving the Plan:  
Nuance and Intimacy in the  
Construction of Civic Space  
In Honor of Diane Lewis  
(b.1951–d.May 2, 2017)

Healing Objects:  
Unmasking Novel  
Domestic Urbanisms  
Mersiha Veledar AR'03,  
Assistant Professor,  
School of Architecture

**Conceiving the Plan**  
will be on view at  
The Cooper Union  
March 29 through  
April 22, 2022



innovative, diverse ideas to discussions about complex problems. No matter what the subject, the group, according to Gersten, is “running after what we don’t know.”

Many more Cooper alumni and faculty make an appearance in this year’s Biennale. Peggy Deamer AR’77 is an exhibitor in Platform Austria, on view in the Austrian Pavilion. Jesse Reiser AR’81 and Nanako Umemoto’s AR’83 firm Reiser+Umemoto is bringing *Geoscope 2*, a panoramic multimedia experience, to the Biennale. In the virtual Italian Pavilion, visitors can find work by Michael Morris AR’89 whose firm SEArch+/Space Exploration Architecture designed *Lunar Lantern*. As part of the University of Pennsylvania’s Weitzman School of Design, Dorit Aviv AR’09, an assistant professor and director of the Thermal Architecture Lab at Penn, is presenting work on the fragility of the planets ecosystems. School of Art Adjunct Instructor João Enxuto and his collaborator, Erica Love are showing their work *2038—The New Serenity* in the German Pavilion. Natalie Savva AR’13 is among the contributors to *Anachoresis Upon Inhabit Distances* on view in the Cyprus Pavilion. John Lin AR’02 and his firm Rural Urban Framework is presenting an installation that investigates Chinese exurbs. Elena Fanna AR’03 is part of the 2021 ECC Architecture Biennale at the European Culture Center in Venice with her project *Time Stills*. ●

**To learn more, go to [cooper.edu/support/venice-biennale](https://cooper.edu/support/venice-biennale) where you will find links describing each of these projects.**

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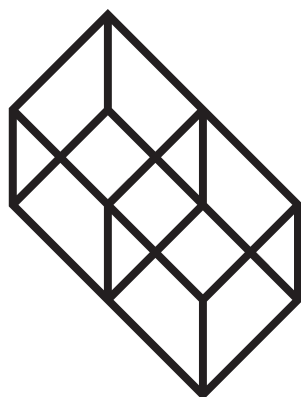
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