

UNIVERSITY OF PENNSYLVANIA *Almanac*

Tuesday
January 18, 2022
Volume 68 Number 19
www.upenn.edu/almanac

M. Elizabeth Magill: Nominated to Become Next President of the University of Pennsylvania

Scott Bok, Chair of the University of Pennsylvania Board of Trustees, today announced that M. Elizabeth Magill, who currently serves as Executive Vice President and Provost of the University of Virginia, has been nominated by the Executive Committee of the Trustees to serve as the ninth President of the University. The full Board of Trustees will vote on Magill's nomination at its Stated Meeting on March 4.



M. Elizabeth Magill

Magill would assume the Penn Presidency on July 1, 2022. She would succeed Dr. Amy Gutmann, who announced last year that she would conclude her tenure as Penn's President after serving in that role since 2004.

"The Penn presidency is one of the most complicated and demanding in higher education, and there are very few people anywhere in the world with the skills that this job demands," said Bok. "But through a thorough search process informed by input from all university constituencies, we found exactly the right person. Liz Magill is an extraordinarily accomplished academic leader. She has held senior leadership positions at two of the most highly regarded ac-

ademic institutions in the country, each with a breadth of activities that parallels the broad scope of Penn. In her leadership roles Liz gained valuable experience with the arts and sciences, with a broad range of professional schools and with an academic health system. Throughout her distinguished career she has demonstrated a passionate commitment to academic excellence, to diversity, equity, and inclusion, and to student success at both the undergraduate and graduate levels. Further, she truly understands and values the critical role of faculty in teaching and research, which is so important to Penn. She is a person who cares about others and has a long history of engaging with the communities in which her institutions have operated. We are extremely fortunate to have found someone with the unique vision, integrity, and compassion of Liz Magill to assume the leadership of our university."

Magill was raised in Fargo, North Dakota and went on to receive a B.A. in History from Yale University and a J.D. from the University of Virginia School of Law. She became EVP and Provost at UVA in 2019. Prior to her tenure at UVA, Magill served for seven years as the Richard E. Lang Professor of Law and Dean of the Stanford Law School. Before joining Stanford, she was on the faculty at the University of Virginia School of Law for 15 years, serving as vice dean, the Joseph Weintraub-Bank of America Distinguished Professor of Law, and Elizabeth D. and Richard A. Merrill Professor.

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Penn Medicine: \$14 Million NIH Grant, \$8 Million Transplantation Research Grant, and \$2 Million in CDC Grants

\$14 Million NIH Grant

Penn Medicine has been awarded a prestigious seven-year, \$14 million grant from the National Institutes of Health (NIH) to promote organ transplantation for patients with end-stage renal disease who are currently on the waitlist for a kidney transplant. The team will launch a clinical trial harnessing synthetic chimeric antigen receptor (CAR) T cells—a form of which was developed at Penn Medicine and became the first personalized cellular therapy for cancer—for use in patients for whom a compatible kidney cannot be found due to pre-existing antibodies against potential donors.

There are currently 97,000 patients on the waiting list for a kidney transplant in the United States. A major barrier to successful transplantation in some of these patients is the existence of pre-formed antibodies against potential organ donors, which arise when patients are exposed to other people's cells or tissues such as through pregnancy, blood transfusion, or previous organ transplants. Patients who form high levels of donor-specific antibodies, termed "highly sensitized," tend to wait longer on the transplant list and may never receive an organ.

"Engineering novel cellular immunotherapies to help improve access to kidney transplants is an exciting area of research for a unique patient population in great need of lifesaving organs," said Ali Naji, the J. William White Professor of Surgical Research in the Perelman School of Medicine at the University of Pennsylvania and principal investigator of the study. "We're committed to discovering an approach to help these currently transplant-ineligible end-stage renal disease patients find a path forward to an organ match."

The NIH-funded clinical trial led by Penn will use CAR T cells, a form of immunotherapy that has proven remarkably effective as an anti-cancer treatment. Two experimental CAR T cell therapies developed at Penn will be used to deplete immune B cells and plasma cells that make donor-specific antibodies with the hope of achieving a compatible kidney match.

"CAR T cells represent a powerful and specific therapy targeting immune cells that produce antibodies that preclude successful transplantation," said Carl H. June, the Richard W. Vague Professor in Immunotherapy in the department of pathology and laboratory medicine and director

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\$18 Million Gift to Support the Shleifer Family Penn First Plus



Elena and Scott Shleifer

On January 13, the University of Pennsylvania announced an inspiring \$18 million gift from Scott and Elena Shleifer to increase its support and critical resources for students who are in the first generation of their family to attend college and/or from households of modest or limited income. This philanthropic support for Penn First Plus (PIP) will have a transformative impact on the program which directly affects many Penn students. Nearly 20% of undergraduate students benefit from the Penn First Plus program, and this academic year, one in seven first-year students at Penn are the first in their families to attend college.

Penn First Plus was created in 2018 by Penn President Amy Gutmann and leaders across the University to ensure all students—regardless of financial or family circumstances—can experience the full breadth of a Penn education. It is a comprehensive and multi-faceted initiative featuring financial, academic, and programmatic elements, with a dedicated physical space in the heart of campus. That space in Penn's iconic College Hall will now be known as the Shleifer Family Penn First Plus Center.

"I am thrilled and profoundly grateful to Scott and Elena Shleifer for their amazing commitment to support such an important University priority as Penn First Plus," said President Gutmann. "As a scholarship recipient myself, I know how significantly student aid changes lives. I also know that tuition support alone is often not enough. This gift will enable our University to foster an ever more welcoming and inclusive learning environment to prepare all Penn students for successful lives. We are proud to have the Penn First Plus Center bear the Shleifer Family name."

Increasing access and bolstering student aid have been fundamental priorities for the University during President Gutmann's tenure. The

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From the Senate Office

The following agenda is published in accordance with the Faculty Senate Rules. Any member of the standing faculty may attend SEC meetings and observe. Questions may be directed to Patrick Walsh, executive assistant to the Senate Office, either by telephone at (215) 898-6943 or by email at senate@pobox.upenn.edu.

Faculty Senate Executive Committee Agenda Wednesday, January 26, 2022 3–3:50 p.m. EST

1. Finalize the Minutes of December 8, 2021
2. Tri-Chairs' Report
3. Update from the Office of the President
Discussion with President Amy Gutmann
4. New Business
5. Faculty Senate Seminar, 4 p.m. EST: "Returning to In-Person Teaching (Spring 2022)."
Open to all Penn faculty.
Registration link: <https://primetime.bluejeans.com/a2m/register/bwzzjkvf>.

New Workday Home Page

[Workday](#) will introduce a new Workday home page experience on Tuesday, February 1, 2022. The new Workday home page will have a fresh look to help you find what you need and use most often.

All Workday users are invited to attend a live, virtual demonstration on January 26, 2022 from noon to 12:30 p.m. ET. In addition to the home page tour, we will show how to find some popular, self-service items. The demonstration will be recorded for later access.

Get the Zoom meeting link or download the iCalendar to add the event to your calendar by logging into the [Workday@Penn website](#) (PennKey required). The Zoom meeting is limited to 300 participants.

—Workday Operations

Penn Medicine: \$14 Million NIH Grant, \$8 Million Transplantation Research Grant, and \$2 Million CDC Grants

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of the Center for Cellular Immunotherapies and the Parker Institute for Cancer Immunotherapy in Penn's Abramson Cancer Center. "By combining two CAR T therapies targeting antigens that are found on B cell and plasma cells, we hope to achieve successful kidney transplantation in patients with pre-existing antibodies."

The trial, which intends to begin enrolling patients by the end of 2022, will be offered at three sites, led by Penn and including the Massachusetts General Hospital/Harvard University and New York University Langone Health.

"Based on previous success with proving that engineered T cell immunotherapies employing synthetic CARs can induce durable remission of B cell lineage and plasma cell malignancies, we are excited for the opportunity to explore this further," said Alfred Garfall, an assistant professor of hematology at Penn. "With the favorable safety record we observed with this combination cellular approach, there is great anticipation for what Penn's two experimental CAR T cell therapies could do for patients with cancer, and other conditions, who might benefit from innovative immunotherapies."

"There is a very high degree of enthusiasm for this research and the impact it can have for patients in need with a treatment approach that could change clinical practice and expand access to transplantation for those with immunologic barriers that currently make them unlikely to receive a transplant," added Vijay Garud Bhoj, an assistant professor of pathology and laboratory medicine at Penn. "The proposed research we are looking forward to conducting is based on strong preliminary data that suggest both safety and efficacy, which is highly innovative in the field of transplantation."

\$8 Million NIH Transplantation Research Grant

A \$8 million grant from the National Institutes of Health (NIH), the next stage of the THINKER project—called THINKER-NEXT—will aim to provide a comprehensive view of the risks and benefits of transplanting HCV-infected kidneys into non-infected patients. The trial will take place for five years at eight institutions, led by Peter Reese, a professor of medicine and epidemiology in the Perelman School of Medicine, and David S. Goldberg, now a professor at the University of Miami, and Douglas E. Schaubel, a

professor of biostatistics at the Perelman School of Medicine.

"In the first stage of the trial, we found out that we could cure hepatitis C from the transplant patients. But now we want to know, how well do the organs function compared to others? Do the patients experience any unique complications? Are they susceptible to any other viruses?" Dr. Reese said. "Since this is a study that involves multiple centers, we hope to have enough data about the approach and its long-term implications. This information will be very important if we are to increase adoption of this practice across the country."

Penn Medicine and the seven collaborating institutions will transplant 200 kidneys from HCV-positive donors into new patients during the trial. They will determine: whether pursuing a HCV-positive kidney transplant improves patient survival; the one-year kidney function of an HCV-positive kidney transplant recipients; whether the kidney transplant recipients have increased risks of cytomegalovirus infection; and if the prevalence of chronic kidney disease is similar in HCV-positive and HCV-negative kidney donors. The overarching goal is to determine the long-term clinical impact of transplanting kidneys from hepatitis C donors into HCV-negative patients with end-stage kidney disease.

Findings from the THINKER-NEXT project are urgently needed. Currently, the waiting list for a kidney transplant exceeds 94,000 people, with only 14,000 deceased donor kidneys available annually. For the elderly and some other patient groups, it is common to die waiting. Yet, hundreds of kidneys from donors infected with hepatitis C virus are discarded annually, and hundreds more kidneys are never procured because of the perception that that centers won't accept them.

Emily Blumberg, a professor of infectious diseases; Roy Bloom, a professor of renal-electrolyte and hypertension; Stacey Prenner, an assistant professor of gastroenterology; and Peter Abt, a professor of surgery, provide expertise as co-investigators on the clinical trial.

\$2 Million in CDC Grants

More than \$2 million in grants from the U.S. Centers for Disease Control and Prevention (CDC) will allow a Penn Medicine team to fur-

ther develop infrastructure and clinical capacity to address antimicrobial resistance and infectious diseases in Botswana. The grant will support Penn's work, in collaboration with Children's Hospital of Philadelphia, at multiple locations across the country through the Botswana-UPenn partnership, a 20-year collaboration between Penn's Center for Global Health and the University of Botswana and the Botswana Ministry of Health and Wellness. While this grant primarily supports clinical work and capacity, the award also lays the groundwork to conduct more antimicrobial-resistance research in the years ahead.

Funding to Penn is part of a new \$22 million, 50-plus-country, and 28-organization total investment from the CDC to tackle antimicrobial resistance, the result of virus, bacteria, and fungi changes that leave microbes tougher to kill and harder to treat in infected patients. In order to curb antimicrobial resistance, clinicians need to track resistance mutations, monitor transmission, and better control infection spread in and out of healthcare settings.

"Thanks to the Penn Center for Global Health, Penn has an extremely well-established relationship on the ground in Botswana and with the University of Botswana," said Ebbing Lautenbach, chief of infectious diseases at Penn and co-PI of the grant. "Botswana is a key place to continue developing strategies to address antimicrobial resistance. While there is a capable cohort of experts and researchers in Botswana experienced in managing and treating various infectious diseases, there remain considerable challenges to addressing healthcare-associated infection and antibiotic resistance. As such, developing and testing infection-control interventions are vital."

Antimicrobial resistance, particularly antibiotic resistance, continues to be a growing problem worldwide in part due to the overuse of antibiotics. More responsible antibiotic stewardship and strategies to prevent healthcare infections are just some of many interventions that can be employed to prevent further emergence of resistance.

Penn is among several organizations receiving a CDC antimicrobial-resistance grant. Other institutions receiving grants include the University of Oxford, the World Health Organization, and Johns Hopkins University.

M. Elizabeth Magill: Nominated to Become Next President of the University of Pennsylvania

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After graduating from Yale, Magill served as a senior legislative assistant for energy and natural resources for U.S. Senator Kent Conrad, a position she held for four years. She left the Hill to attend the University of Virginia School of Law. After graduating in 1995, Magill clerked for Judge J. Harvie Wilkinson III of the U.S. Court of Appeals for the Fourth Circuit and then for U.S. Supreme Court Justice Ruth Bader Ginsburg, who Magill credits as having had a profound impact on shaping her career. Magill is the first woman to serve as provost at UVA.

"I am humbled and honored by the opportunity to lead the remarkable institution that is the University of Pennsylvania – and to succeed Dr. Amy Gutmann, who has been a visionary and innovative leader," said Magill. "From its founding, Penn set its sights on making a difference, and 282 years later the Penn community continues to change the world every day through world-class research, teaching, patient care, and service. What is special about Penn is that it does this with an uncommon mix of pragmatism, creativity, and humanity. I look forward to working with the faculty, students, staff, alumni, and community members to build on this inspiring legacy and shape Penn's next great chapter. I cannot wait to get started."

Magill is a distinguished scholar and teacher

of administrative and constitutional law. A fellow of the American Academy of Arts and Sciences and a member of the American Law Institute, she has been a visiting professor at Harvard Law School, held a fellowship in the Law and Public Affairs Program at Princeton University, and was the Thomas Jefferson visiting professor at Downing College, Cambridge University. Her scholarly articles have been published in leading law reviews, and she has won several awards for her scholarly contributions.

At Stanford, Magill established an innovative Law and Policy Lab, a program that teaches students policymaking by tackling real-life policy challenges for actual clients. She also launched the Global Initiative, which infused a global perspective into the curriculum, including classes taking students and faculty to China, Latin America, India and Europe. Magill was a successful fundraiser as dean, and the global program was funded by the Stanford Law School's largest alumni gift ever. Magill expanded and redesigned student life initiatives, with a strong emphasis on diversity and inclusion; and oversaw the expansion of Stanford Law's public service commitments in the local community and beyond. Magill also presided over the largest faculty revitalization at the law school in decades, hiring nearly 30 percent of

the faculty. A devoted teacher, Magill continued as dean to make time to teach required first-year constitutional law, hosted students at her home, and relished her connection to students.

"Liz is coming to Penn at an opportune moment," said Bok. "With the completion of our recent \$5.4 billion Power of Penn Campaign, the strong performance of our endowment, the contribution of our university to the creation of the life-saving mRNA vaccines and the ever-increasing interest among young people in a Penn education, Penn has the students, the faculty, and the funding necessary to scale even greater heights in both teaching and research with the objective of increasing knowledge and strengthening the local, national, and global communities in which we live."

Jennifer Pinto-Martin, professor of nursing and epidemiology, who served on the search committee, joined Bok in praising Magill's selection. Said Pinto-Martin: "Liz Magill is a superb choice to lead our university. She has a profound commitment to students and deeply respects the role of faculty governance. I couldn't be more pleased to have her as Penn's next President."

Magill is married to Leon Szeptycki, a professor of law at UVA who also serves as Associate Director of the UVA Environmental Resilience Institute. They have two children.

\$18 Million Gift: Support for First-Generation to College and Modest-Income Undergraduates

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Shleifers' gift is one of the most transformative investments Penn has received for this community of undergraduates. It provides stable funding for the program through endowment, as well as incentive for others to join them in this effort. Their gift includes the creation of a unique challenge fund to offer a match to donors who establish financial aid endowments for Penn First Plus initiatives.

At the Shleifer Family Penn First Plus Center, students in the Penn First Plus community can access comprehensive resources from across the University. They can also meet with Penn First Plus professional staff and connect with experts in academic support, financial aid, wellness, and career services. The Penn First Plus office is led by executive director Marc Lo and faculty co-directors Camille Charles, the Walter H. and Leonore C. Annenberg Professor in the Social Sciences, and Robert Ghrist, the Andrea Mitchell University Professor of Mathematics and Electrical & Systems Engineering. These renowned Penn professors work with faculty to create an enhanced awareness of the attributes of Penn First Plus students. Their peer faculty trainings cover college transition, promoting academic success, and fostering a sense of belonging on campus. The faculty co-directors and Penn First Plus executive director also advise the Pre-Freshman Program, which prepares students for their undergraduate experience through a four-week summer immersion into Penn's campus life and academic rigors.

"Our purpose is to ensure that any student, from any background, can make the most of a Penn education," said Dr. Lo. "With this phenomenal gift, we expect to deepen our efforts to enhance student academic achievement, create more opportunities for students to find community and a sense of belonging, increase participation in extracurricular experiences, and, of course, provide more relief to the financial pressures of college. We thank the Shleifers for ele-

vating our ability to provide these unique and holistic services for students."

"Every student deserves the chance to have the best undergraduate experience possible," said Dr. Charles. "This remarkable gift not only strengthens the foundation of this program, but raises the ceiling for what we can do to fulfill its vital mission."

"Over the past few years, we have seen so many Penn First Plus students building a sense of confidence and belonging at Penn. These students earned their admittance at Penn and they, like all students, deserve the support that will propel them to success," said Dr. Ghrist. "The best part is, we are just getting started."

An important component of the Shleifers' gift will expand financial aid, which marks the cornerstone of Penn First Plus. Of Penn's nearly 10,000 undergraduate students, approximately half receive need-based financial aid. Ten percent receive the University's most generous and comprehensive financial aid packages for highly-aided students, covering needs such as laptops, holiday break meals and travel, emergency grants, and funds for summer internships, research, study abroad programs and academic courses.

"Attending Penn had an enormously positive impact on my life. I am incredibly grateful for the opportunities this great University opened up to me, and it is my privilege to help provide the same opportunities to other students," Scott Shleifer said. "Elena and I hope this gift enables many more bright young minds to benefit from a Penn education so they can create the best lives for themselves and their families for generations to come."

Mr. Shleifer is a 1999 graduate of the Wharton School. He is a partner of the investment firm Tiger Global Management and a co-founder of its venture capital business. Scott and Elena Shleifer's other gifts to Penn include several undergraduate scholarships, as well as support for the Graduate School of Education, the Wharton School, and other University-wide initiatives.

Penn Dental Medicine Serves Afghan Refugees with Pop-up Clinic

Responding to an immediate need for dental care in the Penn community, Penn Dental Medicine students and faculty recently created a pop-up clinic for more than 60 Afghan refugees awaiting permanent placement in the Philadelphia metropolitan area. Many arrived in the U.S. in August and their resettlement is being managed by the Philadelphia-based Nationalities Service Center (NSC), which supports immigrant and refugee clients with health and wellness services, community integration, legal protections, opportunities to achieve English language proficiency, and more.

The clinic was set up on a Saturday within the residential hotel where the refugees are currently living. Sixteen third- and fourth-year DMD students, along with Penn Dental faculty Olivia Sheridan and Leonard Jensen and hygienist Karoline Genung, provided care to more than 60 patients, with future appointments made for another 35 patients and 100 hygiene kits dispensed. The major concern of the majority of the families was dental pain and disease. Along with dental exams, fluoride varnish was applied in the oral cavities of everyone seen and over 50 units of silver diamine fluoride were placed and several atraumatic restorative treatment (ART) restorations completed. A number of emergent cases were referred to the school's Vulnerable Populations Clinic for care. In addition to dental care, extensive hygiene and nutritional advice was provided.

"We did not stop until we ran out of supplies," recalled Dr. Sheridan, noting that the tremendous need for care has prompted the school to expand the service of its Vulnerable Populations Clinic. Through July 1, the clinic will expand its service hours from two to three days per week. "Dean Mark Wolff and the entire school administration are deeply committed to supporting these efforts and our student and faculty volunteers have clearly heard the call," added Dr. Sheridan. "They continue to step up and provide this much-needed care for our newest arrivals."

Deaths

Janet Ansert, Student Registration & Financial Services

Janet Marie Ansert, former deputy registrar and a longtime employee of Penn's department of Student Registration & Financial Services (SRFS), passed away recently. She was 72.

Ms. Ansert joined Penn's staff in 1970 as a scheduling assistant and ADP coordinator in the department of data processing. She continued to move upward at Penn, becoming the supervisor of scheduling in 1974. In 1978, she moved departments, to Student Information Services, to serve as the assistant registrar for academic records. She was promoted to deputy registrar in 2009, a position she held until retiring in 2016. After retiring, Ms. Ansert continued to work in SRFS, consulting on the NGSS Student Records Project.

Around campus, Ms. Ansert served as vice-chair of the Penn Professional Staff Assembly in 1996 (and continued to serve on PPSA committees for the next two decades). The same year, she joined Penn's 25-Year Club. In 2003, she joined the Board of Governors of Penn's University Club, a role in which she served until 2015. In the 2000s, she also served as a point person for the annual Penn's Way campaign.

"Janet was a mentor and a friend to multiple generations of School and Program based registrars," said Adam Sherr, Senior Advisor/Analyst in SRFS. "From her leadership in running Penn's Center for University of Pennsylvania ID (CUPID), to the Fall New Student Orientation Center in Hutchinson Gym to her guidance with issues with student records and student systems, Janet was a steady influence and true Penn Citizen."

Gwendolyn Gordon, Wharton and SAS

Gwendolyn Gordon, an assistant professor in the Wharton School's department of legal studies and business ethics with a secondary appointment in the School of Arts and Sciences' department of anthropology, passed away recently. She was 41.

Dr. Gordon earned a BA in psychology from Cornell University and a JD from Harvard Law School, where her research focused on social and economic rights for indigenous groups. At Harvard, she served as a research assistant for renowned professor and civil rights theorist Lani Guinier. Afterwards, Dr. Gordon worked as a corporate attorney in the London and New York offices of Shearman and Sterling, LLP. She also interned for the United Nations Tribunal for Rwanda, working on a team responsible for prosecuting military leaders on charges of genocide and crimes against humanity. In 2014, Dr. Gordon received her PhD in anthropology from Princeton University. Her doctoral dissertation, "Bones, Breath, Body: The Life of an Indigenous Owned New Zealand Corporation," examined the complex legal relationship of a Māori corporation responsible for the stewardship of indigenous lands and profits and reflected her passion for global social justice issues.

In 2013, Dr. Gordon joined Wharton's faculty as an assistant professor. As the undergraduate advisor for the social impact concentration in the department of legal studies and business ethics, she advised several innovative projects. Diana



Gwendolyn Gordon

Robertson, vice dean of the Wharton Undergraduate Division, said Dr. Gordon shared in the accomplishments of her students and celebrated their successes. Dr. Gordon was well-loved by her colleagues. "Her knowledge of the law was profound," said Nina Strohming, a professor of legal studies and business ethics. "She was brimming with new and highly original ideas. She possessed the rare talent of being able to draw out the virtues of nearly any project she came across, no matter how half-baked." Other colleagues remembered her mastery of trivia and her devotion to righting civil rights-related injustices. "She refused to stand for people being treated unfairly, and she made a point to stand up for those who could not stand up for themselves," said Rachel Arnett, an assistant professor of management at Wharton.

"Gwen was a dedicated scholar, but moreover, a tremendous person," said Erika James, Dean of the Wharton School. "She brought passion and purpose to her research and extended that commitment into the classroom to impact students. Our community was enhanced by her presence, and she will be deeply missed."

A wake was held on January 5. Dr. Gordon is survived by her mother, Jacqueline; brothers, Andrew, David, and Aaron; cousins; godchildren; and many close friends.

Lani Guinier, Penn Law

Carol Lani Guinier, one of the nation's foremost scholars on race and civil rights and a professor at Penn's Law School (today the Carey Law School) from 1988 to 1998, passed away on January 7 from complications of Alzheimer's Disease. She was 71.

Born in New York City to activist parents, Ms. Guinier graduated third in her high school class of more than 1,400 students. She then attended Radcliffe, a women's college that has since merged with Harvard, and graduated in 1971. She then earned a JD from Yale Law School in 1974. After a clerkship for U.S. Court of Appeals Judge Damon J. Keith (then chief judge of the Eastern District of Michigan), Ms. Guinier joined the Justice Department in 1977 during the Carter administration and worked in the Civil Rights Division. In 1981, Ms. Guinier joined the NAACP Legal Defense Fund, heading the voting rights litigation and legislative program. Among the cases she argued and won was a North Carolina case (*Thornburg v. Gingles*) that helped define the 1982 amendments to the Voting Rights Act. She also brought a case in 1983 naming Arkansas Governor Clinton as defendant; it was settled out of court with a consent decree, liberalizing election laws. During her time at the NAACP Legal Defense Fund, Ms. Guinier reportedly won 31 of the 32 cases she argued.

In 1988, Ms. Guinier joined Penn's faculty as an associate professor of law, and four years later she was promoted to professor. She was an eminent faculty member at Penn, serving on the Faculty Senate Executive Committee and earning Penn Law's 1994 Harvey Levin Memorial Award for Teaching Excellence. In 1996,



Lani Guinier

Ms. Guinier received an honorary degree from Swarthmore College ([Almanac May 21/28, 1996](#)). From 1996 to 1997, she served on Penn's National Commission on Society, Culture, and Community, which convened scholars from across the U.S. to compare notes on contemporary societal problems. In 1998, Ms. Guinier received Penn Law's Robert E. Davies award for "...outstanding contributions to her profession, her university and her community for her special efforts to promote equal opportunities for women and for minority populations" ([Almanac April 28, 1998](#)). An affiliate of Penn's Women's Studies Program, Ms. Guinier became well known in women's education for her studies of differences in the way women and men learn.

Ms. Guinier made history in 1993 when she was nominated by President Bill Clinton to serve as assistant attorney general for civil rights ([Almanac May 4, 1993](#)). Conservative activists who opposed the nomination seized on Ms. Guinier's articles in law journals, which dismissed winner-take-all voting as a system that discredited the needs of minorities and recommended proportional voting in its place and called for Black candidates to demonstrate a "cultural and psychological view of group solidarity." Those conservatives tried to discredit Ms. Guinier as a radical reformer, and bowing to political pressure, President Clinton withdrew Ms. Guinier's nomination, a move that outraged civil rights activists.

After these events, Ms. Guinier returned to teaching, and in 1998, she left Penn Law to become the first tenured Black female professor at Harvard Law School. There, she became one of the most respected civil rights scholars in the country. Sherrilyn Ifill, current president of the NAACP Legal Defense Fund, called Ms. Guinier "easily the most intellectually powerful, towering figure I had ever met." Ms. Guinier wrote several books detailing her research, including *The Tyranny of the Majority: Fundamental Fairness in Representative Democracy* (1994), *Lift Every Voice: Turning a Civil Rights Setback Into New Vision of Social Justice* (1998); and *The Tyranny of the Meritocracy: Democratizing Higher Education in America* (2015). Thanks to her publications and her role in politics, she made many media appearances and was a highly-regarded public speaker.

Ms. Guinier is survived by her husband, lawyer and professor Nolan Bowie; their son, Nikolas Bowie; a stepdaughter, Dana Rice; three sisters; and a granddaughter.

Elihu Katz, Annenberg School

Elihu Katz, a foundational figure in the field of media studies and the distinguished trustee emeritus professor of communication in Penn's Annenberg School for Communication, passed away on December 31. He was 95.

Born in 1926 in Brooklyn, Dr. Katz attended the Yeshivah of Flatbush, where he learned Hebrew at age 6. He graduated from Midwood High School in 1944 and began a BA at Columbia College in Manhattan. His studies were interrupted, however, by a stint in the United States Army from 1944-1946, during which he was trained as a Japanese interpreter at the University of Chicago and stationed briefly overseas. After the war, Dr. Katz returned to Columbia and completed his degree in 1948. He continued at Columbia as a graduate student in sociology, studying with prominent sociologists Paul Lazarsfeld and Rob-

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ert Merton. He received his MA in 1950, writing a thesis called “The Happiness Game,” which dealt with fan mail to a radio personality. He also conducted extensive research with Dr. Lazarsfeld on “two-step flow of communication,” which posited the then-uncommon idea that discussion with other people was an important component in people’s understanding of media.

In 1954, Dr. Katz left the Bureau for Applied Social Research, where he had begun working while at Columbia, to join the University of Chicago’s department of sociology. Soon after, in addition to Chicago, Dr. Katz took a post at the Hebrew University of Jerusalem in 1956, where he co-founded the Communications Institute a decade later. He also assumed a role in the mid-1960s at the Israel Institute of Applied Social Research (IIASR). At Chicago, Dr. Katz continued to research personal influence, the interplay between groups of people and messages in media. He co-authored *Medical Innovation: A Diffusion Study* in 1966 and *The Politics of Community Conflict: The Fluoridation Decision* in 1969, both of which studied the influence of medical advertising. Meanwhile, in Israel, he studied the interactions of immigrants with officials like customs workers and bus drivers, co-authoring *Bureaucracy and the Public: A Reader in Official-Client Relations* in 1973. From 1967 to 1969, in the midst of the Six-Day War, Dr. Katz headed Israel’s nascent television service. This work later led to Dr. Katz working with and studying the BBC in England.

In 1978, Dr. Katz began teaching at the Annenberg School for Communication at the University of Southern California. His research shifted in the same decade to individual empowerment in relation to mass media, studying the responses of culturally diverse individuals to primetime soap operas (work that was published in 1990 as *The Export of Meaning*). He continued to research the media implications of events on the world stage, writing *Media Events: The Live Broadcasting of History* about Egyptian president Anwar Sadat’s 1977 visit to Jerusalem. In the 1990s, Dr. Katz headed the Guttman Institute, which further studied Israelis’ responses to social and political events. Also in the early 1990s, Dr. Katz retired from USC and the Hebrew University, and in 1993, he joined the faculty of the Annenberg School at Penn, where he established the post-doctoral Annenberg Scholars Program. While at Penn, Dr. Katz studied diffusion and co-authored *Echoes of Gabriel Tarde: What We Know Better or Different 100 Years Later* in 2014, which built upon a late-19th-century essay by a French sociologist. Dr. Katz retired from Penn the same year and settled in Jerusalem.

In 2018, Dr. Katz received an honorary doctor of humane letters from Penn ([Almanac February 6, 2018](#)), and a colloquium was launched in his honor at the Annenberg School. Also in 2018, Dr. Katz received the prestigious Steven H. Chaffee Career Achievement Award from the International Communication Association. He also received the Israel Prize for social sciences



Elihu Katz

in 1998, and in 2013, an honorary degree from Northwestern University. “He was very much responsible for positioning the field of communication as something that could be studied in the university arena,” said Barbie Zelizer, Penn’s Raymond Williams Professor of Communication.

Dr. Katz is survived by his wife, Ruth Katz, a musicologist and professor emerita at Hebrew University; and two sons.

Alan Laties, Ophthalmology

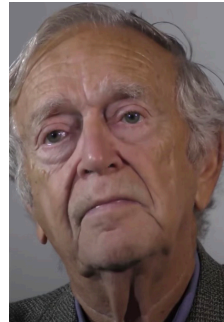
Alan M. Laties, an emeritus professor of ophthalmology in Penn’s Perelman School of Medicine, passed away on December 26, 2021. He was 90.

Born in Massachusetts, Dr. Laties graduated from Harvard College in 1954 and Baylor College of Medicine in 1959.

Following graduation, he interned at Mt. Sinai Hospital in New York City and completed his residency in ophthalmology at the Hospital of the University of Pennsylvania. He then served as a postdoctoral fellow in the Institute of Neurological Science before joining Penn’s faculty in 1960 in the department of ophthalmology. Eight years later, he was promoted to associate professor. During the late 1960s, Dr. Laties conducted influential research on the distribution of the chemical noradrenaline in the structure of the eye, which helped to diagnose eye abnormalities ([Almanac December 1968](#)). In 1972, he was awarded the Jonas Friedenwald Award for his contributions to visual sciences, and the next year, he served on a Penn committee to select the new Vice Provost for Research. Dr. Laties also served on University Council committees in the early 1970s and throughout his career.

Dr. Laties received Penn’s prestigious Lindback Award for Distinguished Teaching in 1970 and the National Retinitis Pigmentosa Foundation Humanitarian Award in 1978. In the early 1980s, Dr. Laties was named the chair of research at the Scheie Eye Institute, and in 1984, he was awarded the Harold G. Scheie Research Professorship in Ophthalmology at Penn’s School of Medicine ([Almanac February 21, 1984](#)). Eight years later, he was named the Harold G. Scheie/Nina C. Mackall Research Professor in Ophthalmology. In 1994, he won the Paul Kayser International Award of Merit in Retina Research of the International Congress of Eye Research, which recognized his influential advances in the localization of neuropeptides in the retina. Beginning in 2004, Dr. Laties sat for several years on the board of Penn’s University Club. In 2020, Dr. Laties retired, taking emeritus status.

Outside of his academic duties, Dr. Laties served as editor-in-chief of *Investigative Ophthalmologist* and *Visual Science* and chaired the Scientific Advisory Board of the National Retinitis Pigmentosa Foundation-Fighting Blindness. He focused his research on the hereditary disease retinitis pigmentosa and made many advances in diagnosis and treatment of this disorder and other afflictions of the eye, like diabetes and glaucoma; he published this research widely in scientific journals. In the early 1980s, he was part of a two-physician team sent to the USSR by the



Alan Laties

U.S. government to evaluate a proposed treatment of retinitis pigmentosa.

Dr. Laties is survived by his wife, Deena Gu, a distinguished artist; his children, Jane, Alex, and Nicholas Robinson; and a brother, David.

William Schilling, Student Financial Services

William (Bill) Schilling, C’66, L’69, who served as director of Student Financial Aid (later Student Financial Services, or SFS) from 1981 to 2021, passed away on December 9, 2021 after a brief and sudden struggle with cancer. He was 76.

Born in Drexel Hill, Pennsylvania, Mr. Schilling graduated from Upper Darby High School and then came

to Penn’s College of Arts and Sciences, where he graduated in 1966. Three years later, Mr. Schilling received a law degree from Penn Law. In 1970, he joined Penn’s staff as an upper class aid officer in the department of Student Financial Aid. From there, Mr. Schilling rose through the ranks, becoming the assistant director of the department, then the associate director, acting director, and, in 1981, director.

During his tenure at Penn, Mr. Schilling committed himself to making an Ivy League education possible for students of all backgrounds and means. He oversaw the manifold expansion of Penn’s undergraduate financial aid program and pioneered a no-loan aid policy, ensuring that students in need receive only grants, not loans, in support of their education. In 1997, he led an initiative to improve Penn’s graduation rates by alleviating financial difficulties that had compelled students to drop out ([Almanac October 28, 1997](#)). He supplemented this work for educational equity by volunteering with the College Board and the Mendenhall-Tyson Scholarship Foundation.

Mr. Schilling was active in Penn life, serving on several Faculty Senate and University Council committees (as well as several ad-hoc committees that focused on financial aid) and presenting to them frequently about the state of financial aid at Penn. In 1996, he joined Penn’s 25-Year Club. He continued to find innovative ways to make Penn more accessible for students, including partnerships with scholarship organizations and advocating for a generous amount of the money raised in the *Making History* fundraising campaign to support undergraduate aid. Mr. Schilling retired from Penn in 2012 but stayed at SFS until 2016 as a temporary worker. After his retirement, Penn’s Trustees passed a resolution of appreciation for Mr. Schilling for “significantly and positively impact[ing] the lives of thousands of Penn students” ([Almanac July 17, 2012](#)).

Mr. Schilling is survived by his wife, Patricia; children, Amy (Lenny) Liberatore, Donny (Bonnie) Charlesworth, Gail (Lawrence) Harrington, and William “Drew” Schilling; and seven grandchildren. A memorial service was held on December 18, 2021. Donations in Mr. Schilling’s name can be made to the Church of the Holy Comforter in Drexel Hill, PA.



William Schilling

The State of University City 2022

Report from the University City District



Spotlight on University City: University City is the region's leader in education, science, and innovation. The 2.4 square mile neighborhood boasts worldclass institutions that have catalyzed over 85,000 jobs in fields including medicine, higher education, technology, real estate, and hospitality, and is a national leader in the life sciences sector. University City is a destination for culture seekers and food lovers, a transportation hub with some of the most bicycle- and pedestrian-friendly streets in the city, and is home to the most significant development projects in the region. With diverse demographics, a blend of housing and rental options, topnotch schools and hospitals, and amenities galore, University City is one of Philadelphia's neighborhoods of choice.

Real Estate Development: Accelerated growth, rapid transformation, and continued investment remain the story in University City's real estate sector, which continues to thrive despite disruptions due to COVID-19. Progress on major residential, institutional, public space, and mixed-use projects marked another busy year of groundbreakings, topping outs, and ribbon cuttings in the neighborhood. In the past year, significant progress has been made on three major long-term projects: uCity Square, Schuylkill Yards, and Amtrak's 30th Street Master Plan. Other key developments, including the newly opened Pavilion at the Hospital of the University of Pennsylvania, 3.0 and 4.0 University Place, and new buildings on the campus of Children's Hospital of Philadelphia, have made major strides toward completion, and plans for multiple large-scale projects aim to transform several blocks of Chestnut Street west of 40th. All told, these investments, totaling over 11.1 million square feet of development in the pipeline, continue to set University City apart as a major regional hub for employment, research, and places to live.

Employment: New development and institutional expansions contribute to University City's continued status as a top regional employment hub. In 2021, over 25,000 jobs at anchor employers were posted, smashing previous records. Nearly 75% of jobs in University City pay

over \$40,000 a year, as compared to just over 50% for Philadelphia as a whole. University City accounts for just under 12% of all jobs within Philadelphia, despite representing only 1.69% of the city's total footprint. A large percentage of jobs are found at the local hospitals and universities, including 600 positions at Penn's newly opened Pavilion hospital, but growth associated with nascent technology firms and commercialization of research is also creating more employment opportunities at every rung of the career ladder.

Office: University City is home to nearly 5 million square feet of office space, with another 770,000 square feet currently under construction, and was recently ranked 3rd on a list of top growing tech submarkets in North America according to CBRE. Major long-term projects including Schuylkill Yards, 3.0 and 4.0 University Place, and additional buildings at uCity Square are adding to this robust total. In Q3 of 2021, University City commercial real estate was leased at a percentage of 92.7%, good for the highest occupancy rate of all Philadelphia submarkets, and its asking gross rent of \$45.74 per square foot is the highest in the region, displaying the continued desirability of doing business in University City. Because of the dominance of offices dedicated to the life sciences, University City's office buildings fared better than many others during the pandemic, and workers returned at a higher rate in University City than in other parts of the region. Our neighborhood's amenities and offerings have attracted companies like GSK, convinced Cambridge Innovation Center to double its lab space, and continually attract new investors, developers, and companies.

Retail and Hospitality: Local and national retailers, restaurants, and hotel operators have long viewed University City as a prime location due to an eclectic mix of employees, commuters, college students, and residents. With help from grants, governmental support, creative offerings, new outdoor dining initiatives, and the generosity and support of loyal

(continued on page 7)

(continued from page 6)

customers, many businesses have weathered the COVID-19 pandemic. Students and employees have begun returning to University City's streets at levels equal to and sometimes exceeding numbers from before the pandemic, and new businesses ranging from an Ethiopian market to an up-scale plant store with discount prices to a short-term hotel have opened in the past year. Barring additional setbacks, the future looks rosy for more businesses and customers down the road.

Higher Education: True to its name, University City offers top options in the region and nation for undergraduate and graduate studies. More than 52,000 students are enrolled in the neighborhood's five institutions of higher education. Students from around the country and the globe are drawn to the proximity to employment opportunities, the beautiful campuses, the vitality of the surrounding community, and the varied housing inventory. Both the University of Pennsylvania and Drexel University fared well in recent *U.S. News & World Report* rankings, with Penn ranking #13 in a list of best global universities and in the top ten for economics and business and in several science concentrations, while Drexel excelled in similar lists for top undergraduate teaching, undergraduate engineering programs, and most innovative schools.

Healthcare: The neighborhood's medical institutions—Hospital of the University of Pennsylvania (HUP), Penn Presbyterian Medical Center, Children's Hospital of Philadelphia (CHOP), and Michael J. Crescenz VA Medical Center—combine to account for nearly 38% of all jobs in University City, making them an essential component of the local economy. Both CHOP and HUP receive annual accolades for quality of care and as top national workplaces: in the 2021 *U.S. News & World Report* rankings of hospitals, CHOP finished #2 for top hospitals for children, while HUP placed #13 for adults, and each ranked in the top 100 of America's best large employers according to Forbes. Our local hospitals are also leading the way in new treatments, procedures, and medical technologies, and with the addition of the Pavilion, the new facility from Penn Medicine that opened its doors on November 1, 2021, there's much more to come.

Life in the Neighborhood: What makes a neighborhood a great place to live? For University City, it's fantastic amenities, an excellent dining scene, diverse housing options, world-class transit, parks and public spaces aplenty, and communities with distinct personalities. Options for housing are as varied as the residents, with historic homes, walk-up apartments, stylish high-rises, dormitories, and more. Over 100 acres of public space and parks with abundant outdoor seating offer respite from the city streets and places for people to relax, recharge, and spread out. An eclectic dining scene offers plenty of options, including long-standing mom-and-pop restaurants, cuisine from around the globe, and outposts for local and national chains. University City boasts a robust arts and culture scene, including theaters, art galleries, and local dance and performance groups. The streets, sidewalks, and transit stations combine to offer excellent options for traveling within the neighborhood or to points beyond, and the neighborhood scores well annually as a location for walking, biking, and transit according to Walkscore.com. Local schools earn annual accolades, including a second Blue Ribbon School designation for Penn Alexander, and this year the new \$38 million Powel/Science Leadership Academy Middle School (PSLAMS) opened at 3610 Warren Street. Active neighborhood associations and community groups inject unique character and civic pride in smaller sub-neighborhoods, and have proven a continually valuable resource for the community in times of need.

Innovation: University City is nationally recognized as a hub for advances in science, research, and medicine. Cutting-edge innovations originate out of 1.86 million square feet of lab space in research hubs like the Wistar Institute, Pennovation, Drexel's ic@3401, uCity Square, and Schuylkill Yards. This confluence of labs, benches, and clinics contributed to Philadelphia ranking at #7 in top life sciences clusters in the United States according to CBRE, who also dubbed University City the region's hottest life sciences neighborhood. Discoveries initiated in University City spark billions of dollars in economic growth and attract international attention in fields like biotech, robotics, and medicine. In 2020, 207 patents were issued to University City businesses and institutions, which also accounted for over \$800 million in NIH funding and \$1.85 billion in R&D spending, up 51% from five years ago. In 2021, nearly 400 million doses of the Pfizer-BioNTech and Moderna vaccines were administered

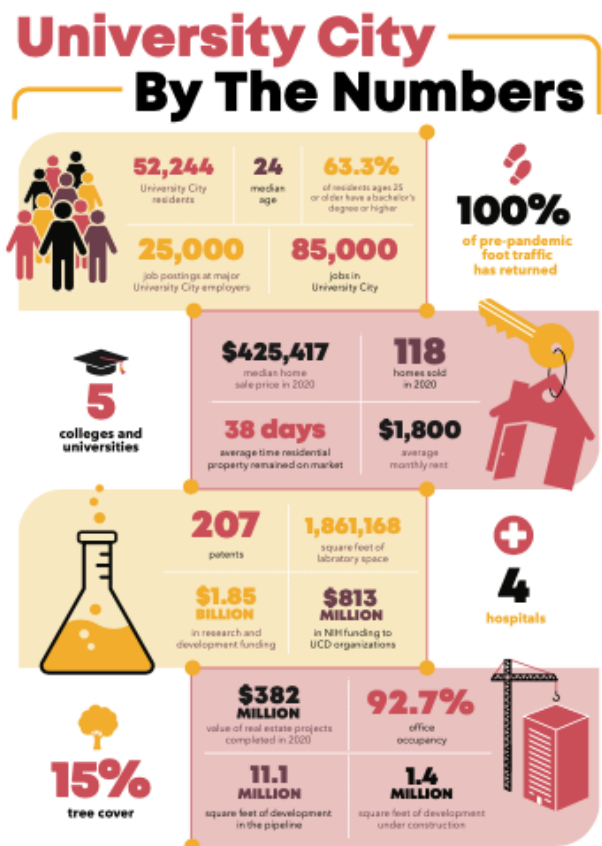
in the United States using messenger RNA delivery, a process developed in 2005 by Penn researchers Katalin Karikó and Drew Weissman that has opened the possibility for additional mRNA vaccines capable of eradicating countless other diseases.

Transportation Planning: Each year, UCD works with partners to address transportation issues including traffic congestion, transit routing, and bike and pedestrian safety. UCD, major institutions, local developers, the City, the Pennsylvania Department of Transportation, and the Delaware Valley Regional Planning Commission work together on a Transportation Management Association (TMA) that serves the neighborhood. This association formalizes work these partners have done for nearly two decades and opens new lanes to improve how people and goods get around. Together with SEPTA, the TMA operates the Loop through University City (LUCY) bus that carries hundreds of thousands of passengers each year from 30th Street Station to nearby jobs. In 2021, we worked with SEPTA to help address rider safety concerns tied to COVID-19, and with bikeshare program Indego to research and implement new stations for their bike docks. Moving forward, the TMA will continue to assist in projects aimed at improving every mode of transit to benefit residents and commuters.

Road to Recovery: The COVID-19 pandemic impacted all aspects of our daily lives, including how we work, travel, and gather with others. As a society we've dealt with major impacts to small businesses, colleges and universities, and across our local economy, and we've been forced to make pivots and adjustments to deal with infection rates and variants, social unrest, and vaccination rollouts. As 2021 comes to a close, there are reasons to feel optimistic about University City's ability to recover.

—University City District

To read the full report, visit <https://issuu.com/universitycity/docs/the-state-of-university-city-2022>.



Honors & Other Things

Architecture Faculty: AIA Architectural Excellence Awards

Five faculty members and alumni of the department of architecture of the Stuart Weitzman School of Design were honored in November by the Pennsylvania chapter of the American Institute of Architects with a 2021 Architectural Excellence Award. Among the firms from across Pennsylvania recognized for excellence in design, contributions to the profession of architecture, and commitment to the quality of the built environment were Erdy McHenry Architecture, ISA, DIGSAU, and KieranTimberlake, which are led by instructors or graduates of the Weitzman School.

Jurors selected one project from a pool of 105 submissions to receive the Silver Medal, the most distinguished design award. The recipient of this honor was Erdy McHenry Architecture for Anderson Hall. Located on Temple University's campus, Anderson Hall features a grand glass atrium, creating a new gateway into the academic building and offering a renewed prominence and added functionality.

Erdy McHenry Architecture, led by lecturer Scott Erdy, was previously awarded the 2016 AIA PA Architectural Firm of the Year Award. When speaking about the firm, Mr. Erdy said, "We are mindful of our firm's Philadelphia roots, wherever we work. In a city where themes of architectural expression and meaning have been posed by visionaries long before our time, we are proponents for a new Philadelphia School, where young firms can explore crafts and programmatic expression that may be unique to Philadelphia, but ultimately will have a broader positive influence." In addition to the Silver Medal, Erdy McHenry was awarded a Merit Award for Fifth Façade: Franklin County Penn State Extension, the first facility completed as part of the CFAES Master Plan, bridging the gap between the community and the Ohio State University campus, as part of its Land Grant mission.

ISA, which is led by alum and lecturer Brian Phillips, MArch'96, received an Honor Award for the project 22 South 40th Street. The brick structure at 22 South 40th Street, attributed to architect Frank Furness, originally housed a precursor to the Philadelphia Free Library and was later transformed into a PECO showroom and a community health clinic. ISA's strategic approach to preservation looked to balance historic restoration with reactivating and reopening the building to West Philadelphia's vibrant street life, welcoming whatever the future holds. ISA's Oxford Green was also recognized with a Merit Award. Oxford Green is the largest, greenest housing project built to date by the Philadelphia's Habitat for Humanity.

Other Weitzman honorees were DIGSAU, where Mark Sanderson, MArch'00, is principal, and KieranTimberlake, led by alumni Stephen Kieran, MArch'76, and James Timberlake, MArch'77. In addition to a Merit Award for their design of Jeff and Judy Henley Hall, University of California Santa Barbara, Mr. Kieran and Mr. Timberlake received the Medal of Distinction, the highest honor given by AIA PA. The architects were praised for "a portfolio of beautifully crafted, thoughtfully made buildings that are holistically integrated into site, program, and people."

Weitzman alum and member of the school's

Board of Advisors, Mark Gardner, MArch'00, of Jaklitsch/Gardner Architects, served on the jury.

Angela Duckworth: Education Week Public Influencer

For the second year in a row, Angela Duckworth—Rosa Lee and Egbert Chang Professor at the Wharton School and the School of Arts and Sciences' department of psychology with a secondary appointment at Penn GSE—has been named at the top of *Education Week's* Edu-Scholar Public Influence Rankings.

Dr. Duckworth, bestselling author of *Grit: The Power of Passion and Perseverance* and co-founder of Character Lab, a nonprofit that connects researchers with educators to advance science that improves the lives of children, is widely regarded as having helped shape the national dialogue on child development.

Rick Hess, director of education policy studies at the American Enterprise Institute, compiles the list annually. It names 200 university-based scholars in the United States who, according to Hess's rubric, have done the most in the past year to shape educational practice and policy.

Dr. Duckworth was joined on the list by Penn GSE professors Jonathan Zimmerman, Howard Stevenson, Richard Ingersoll, Roberto Gonzales, and Vivian Gadsden, as well as Penn Vice Provost for Faculty Laura Perna and Dean Pam Grossman.

Deep Jariwala: IEEE Photonics Society Young Investigator Award

Deep Jariwala, assistant professor in the department of electrical and systems engineering in Penn Engineering, is the 2022 recipient of the IEEE Photonics Society Young Investigator Award. The IEEE Photonics Society is a technical community of more than 100,000 professionals dedicated to transforming breakthroughs in quantum physics into revolutionary devices, systems and products.

Dr. Jariwala, whose research lies at the intersection of solid-state optoelectronics and emerging low-dimensional materials, is being honored "for breakthrough advances in optical characterization and understanding of light-matter coupling in excitonic and strongly-correlated semiconductors," according to the society's website.

The award, established to honor an individual who has made outstanding technical contributions to photonics before their 35th birthday, consists of a certificate of recognition and an honorarium of \$2,000.

Three Penn Nursing Hillman Scholars Awarded Pilot Grants from NPO

In late November three University of Pennsylvania School of Nursing Hillman Scholars, Charisse Ahmed, Cassis Boateng, and Kierra Foley, were notified that their small grant proposals were approved, and they would be awarded pilot grants from the Hillman Scholars in Nursing Innovation National Program Office (NPO). The NPO announces requests for proposals each fall and spring to which the Hillman Scholars at Penn and the University of North Carolina can apply.

Charisse Ahmed's proposal, "Designing Intervention Prototypes to Address Behavioral Barriers to Antiretroviral Therapy Adherence among Adolescents Living with HIV in Eswatini," continues her work in Eswatini, a lower middle-income country in sub-Saharan Africa. The targeted problem is low adherence among adolescents living with HIV (ALHIV) to antiretroviral therapy (ART).

Cassis Boateng's proposal is titled "How Black Male Survivors of Gun Violence Perceive Spirituality and Use in Their Recovery Process." It furthers his research on the use of spirituality in the recovery process for Black men who are victims to gun violence in Philadelphia. Earlier this year, Mr. Boateng completed a project using existing qualitative data on this topic and applying the five steps of Design Thinking for Health.

Kierra Foley also completed a Design Thinking project this year and will use this pilot award to further that work as detailed in the project proposal, "Piloting an iOS App to Reduce Social Isolation in Sexual and Gender Minority Elders." The result of her Design Thinking project was a concept for a mobile application named Staying Fabulous, which is designed for sexual and gender minority elders.

Adriana Perez: NHCOA Award

The National Hispanic Council on Aging (NHCOA) recently honored Adriana Perez, an assistant professor in Penn Nursing's department of family and community health with its Research Recognition Award during its 2021 special awards ceremony, United for Equity, on December 9, 2021. The ceremony focused on inequalities impacting health and economic security.

The award recognizes Dr. Perez for her dedication and research to improve the lives of Hispanic older adults, their families, and caregivers. "I am deeply honored to have my research recognized by NHCOA, a leading organization that advocates for the community that is the central focus of my work," said Dr. Perez. "This is even more special because I was nominated by the Alzheimer's Association, an important national partner in research and policy."

NHCOA has been the nation's leading organization focused on improving the lives of Hispanic older adults, their families, and caregivers for over 50 years.



Angela Duckworth



Deep Jariwala



Adriana Perez

Benchmarks

Since 1956, Penn has celebrated a rite of passage each year, for faculty and staff of all ranks who have been members of the University community for twenty-five years. Another 175 new members crossed the twenty-five year mark in 2021.

25-Year Club: New Members in 2021

Denise Adamson, School of Dental Medicine	Engineering and Applied Science	Hospitality Services	Joanne Murray-Gilmore, Annenberg School for Communication
Scott Adkins, Facilities and Real Estate Services	Thomas Donaldson, Wharton School	Christopher Hunter, School of Veterinary Medicine	Katherine Nathanson, Perelman School of Medicine
Shirley Alameda, Facilities and Real Estate Services	James Donnelly, Facilities and Real Estate Services	Diane Hurley, School of Veterinary Medicine	Hillary Nelson, Perelman School of Medicine
Ameena V. Al-Amin, Perelman School of Medicine	Tamra Dunston, Development and Alumni Relations	Sheila Jainlett, University Library	Russell Ney, Wharton School
Margaret Alfaraano, School of Veterinary Medicine	Jonathan Epstein, Perelman School of Medicine	Charles Johnson, Residential and Hospitality Services	Michael Ng, Business Services
Pearete Allen, Provost's Center	David Fahringer, School of Dental Medicine	Eric Johnston, School of Engineering and Applied Science	Dawn Norris, School of Engineering and Applied Science
Nadra Allen, Facilities and Real Estate Services	Patricia Felder, Residential and Hospitality Services	Philip Jones, University Museum	Rolf Noyer, School of Arts and Sciences
Marianne Altland Williams, Perelman School of Medicine	Polina Fenik, Perelman School of Medicine	Kimberly Junod, President's Center	Una O'Doherty, Perelman School of Medicine
Hewett Ashbridge, Perelman School of Medicine	Susan Ferrazzano, Law School	Patrick Kim, Perelman School of Medicine	Edward Ochroch, Perelman School of Medicine
Yiwola Awoyale, School of Arts and Sciences	Alan Flake, Perelman School of Medicine	Leslie King, School of Veterinary Medicine	Michael Pack, Perelman School of Medicine
Robert Baldassano, Perelman School of Medicine	Shaun Flannery, Facilities and Real Estate Services	Athena King-Miller, Facilities and Real Estate Services	Tonya Parks, Perelman School of Medicine
Gordon Baltuch, Perelman School of Medicine	Maurice Fluellen, Perelman School of Medicine	Jennifer Kogan, Perelman School of Medicine	Warren Pear, Perelman School of Medicine
Thomas Barber, School of Dental Medicine	John Flynn, Perelman School of Medicine	Magdalena Korecka, Perelman School of Medicine	Robert Perlsh, Perelman School of Medicine
Sandra Barile, Perelman School of Medicine	Mark Fogel, Perelman School of Medicine	Eric Krilowicz, Information Systems and Computing	Nadya Petryk, University Library
Jeffrey Barta, Residential and Hospitality Services	Douglas Frye, Graduate School of Education	Taryn Kutish, School of Arts and Sciences	James Pilla, Perelman School of Medicine
Khalil Bdeir, Perelman School of Medicine	Tapan Ganguly, Perelman School of Medicine	Tony Kutovoy, Wharton School	David Porter, Perelman School of Medicine
Sam Belkowitz, Weitzman School of Design	Lan Gao, Perelman School of Medicine	Dwaune Latimer, University Museum	Susan Primavera, Perelman School of Medicine
Deborah Bennett, School of Nursing	Randi Garnick, Law School	Liza Law, Wharton School	Kathleen Propert, Perelman School of Medicine
Bill Berner, School of Arts and Sciences	James Gentner, Facilities and Real Estate Services	Denise Lay, School of Engineering and Applied Science	Ricardo Ramos, Facilities and Real Estate Services
Ian Blair, Perelman School of Medicine	William Gipson, Student Services	David Levy, Perelman School of Medicine	Vasu Renganathan, Perelman School of Medicine
John Blankemeyer, Facilities and Real Estate Services	Leah Glickman, University Library	James Lewis, Perelman School of Medicine	Susan Rheingold, Perelman School of Medicine
Timothy Block, Morris Arboretum	Jerry Glickson, Perelman School of Medicine	Jun Li, Perelman School of Medicine	Gearline Robinson, Provost Interdisciplinary Programs
Lawrence Boggs, Provost's Center	Paul Goldin, School of Arts and Sciences	Chengyang Liu, Perelman School of Medicine	Edward Royzman, School of Arts and Sciences
Pamela Bond, Residential and Hospitality Services	Michael Granato, Perelman School of Medicine	Kathleen Loomes, Perelman School of Medicine	David Rubin, Perelman School of Medicine
Timothy Bouffard, Information Systems and Computing	Steven Greenberg, Perelman School of Medicine	Alison Loren, Perelman School of Medicine	Eduardo Ruchelli, Perelman School of Medicine
Patricia Brown, Residential and Hospitality Services	Thomas Grogan, Facilities and Real Estate Services	Zhe Lu, Perelman School of Medicine	Robert Sadoff, Provost's Center
Marvin Brown, University Library	Stephan Grupp, Perelman School of Medicine	Elizabeth Mackenzie, Graduate School of Education	Christopher Savidge, Perelman School of Medicine
Rebenia Cesar, Residential and Hospitality Services	Carmen Guerra, Perelman School of Medicine	Margrit Maggio, School of Dental Medicine	Elizabeth Scheyder, School of Arts and Sciences
Jesse Chittams, School of Nursing	Indira Gurubhagavatula, Perelman School of Medicine	Gillian Maimon, Graduate School of Education	Edna Schwab, Perelman School of Medicine
Cynthia Clark, Perelman School of Medicine	Daniel Hammer, School of Engineering and Applied Science	David Malamed, Perelman School of Medicine	Alison Seward, School of Veterinary Medicine
Dareus Conover, School of Arts and Sciences	Andre Harris, Information Systems and Computing	Beth Mark, Health and Wellness	Brian Sherman, School of Veterinary Medicine
Dishea Cummings, Provost's Center	Banadir Hassan, Facilities and Real Estate Services	Diane McGarvey, Perelman School of Medicine	Anne Shuman, Provost's Center
Andrew Dancis, Perelman School of Medicine	Christopher Helker, Perelman School of Medicine	Edward McLaughlin, Facilities and Real Estate Services	Rudra Sil, School of Arts and Sciences
Mark Devlin, School of Arts and Sciences	Lorin Hitt, Wharton School	Gayle Meadows, Perelman School of Medicine	Rebecca Simmons, Perelman School of Medicine
Clare Din, School of Arts and Sciences	Tina Horowitz, Wharton School	Qing Meng, Perelman School of Medicine	Julie Sochalski, School of Nursing
Dennis Discher, School of	Catherine Hou, Perelman School of Medicine	Rosemarie Mick, Perelman School of Medicine	Julie Spaeth, Development and Alumni Relations
	Zhen-Yu Huang, Perelman School of Medicine	Bryan Miles, Division of Finance	
	Alfred Hunter, Residential and	Lisa Montenegro, Perelman School of Medicine	

(continued on page 10)

25-Year Club: New Members in 2021

(continued from page 9)

Kelly Spratt, Perelman School of Medicine
David Steinberg, Perelman School of Medicine

Julie Stern-Delfiner, Perelman School of Medicine

Eric Stoopler, School of Dental Medicine
Angelo Talley, Business Services

Jonathan Tanner, Perelman School of Medicine

Elena Taratuta, Perelman School of Medicine
Andrew Thomas, University Library

Ann Marie Thompson, Perelman School of Medicine

Sharon Thompson-Schill, School of Arts and Sciences

Petra Todd, School of Arts and Sciences
Andrew Ulane, Information Systems and Computing

Jose Vithayathil, School of Arts and Sciences
Domenic Vitiello, Weitzman School of Design

William Vought, Perelman School of Medicine

Lori Waddell, School of Veterinary Medicine
David Wallace, School of Arts and Sciences

Kim Walls, Perelman School of Medicine
Tammy Watson, Student Services

Laurel Weaver, Perelman School of Medicine
Frederick Webb, Facilities and Real Estate Services

Andrew Wells, Perelman School of Medicine
Ramona Wesolowski, Facilities and Real Estate Services

Eleanor Whittock Martin, Perelman School of Medicine

Cynthia Wicks, Perelman School of Medicine
Robert Wilensky, Perelman School of Medicine

Vern Yoneyama, Information Systems and Computing

Kelly Young Graver, School of Veterinary Medicine

Jennifer Yuan, Information Systems and Computing

Summer Camps and Programs at Penn

Almanac publishes a supplement early each year featuring the camps and programs taking place at Penn over the summer. Offerings listed are camps for children, teens and young adults for an array of activities, from academics, enrichment and recreation—including anthropology, business, law, veterinary medicine and music—to numerous sports camps. To submit information about a camp, email almanac@upenn.edu with the following information: name of camp; dates held (if multiple sessions, indicate dates for each); age range for participants; summary of the program that is 35 words or less; cost (note any discounts); URL for enrollment/application forms; deadline to apply/enroll (if applicable); and an email, link, and/or phone number to obtain more information.

One Step Ahead

Security & Privacy Made Simple

Another tip in a series provided by the Offices of Information Security, Information Systems & Computing and Audit, Compliance & Privacy

Resolve to Protect High-Risk Data

The start of the New Year is a great time to do some “data housekeeping”—ensuring you know what data you are handling, and how to protect that data.

Based on the sensitivity of the data, government regulations, and University policies, Penn categorizes data into three risk classification groups: high, moderate, and low.

Data is classified as high-risk if the loss of confidentiality, integrity, or availability of the data or system could have a significant adverse impact on any individual, or on the University’s mission, safety, finances, or reputation. High-risk data includes, but is not limited to:

- PennKey password and other system credentials
- Personal health information (PHI)
- Social Security numbers
- Credit card and financial account numbers
- Some student and personnel records
- The export of controlled data

Protection of high-risk data is required by laws or regulations, and Penn is required to report to the government, or provide notice to the individual, if such data is inappropriately accessed.

By understanding the risks associated with the Penn data you use, you can help keep that data, the University, and its people more secure.

In the new year, resolve to protect your accounts and all Penn data:

- Use strong passwords, and also use Two-Step Verification where available
- Stop retaining data when it is no longer needed, and store data securely if it must be kept
- Avoid sending sensitive data by email, which is inherently insecure; use services such as Secure Share when necessary
- Make sure you are familiar with University policies and guidelines that govern the Penn data you use and manage

Learn more about how to protect high-risk data: Penn Data Risk Classification: <https://www.isc.upenn.edu/security/data-classification>; Protecting Penn Data: <https://oacp.upenn.edu/privacy/penn-data/>; Information Security Tips for Staff: <https://www.isc.upenn.edu/security/staff>; Two-Step Verification: <https://www.isc.upenn.edu/how-to/two-step-faq>

For additional tips, see the One Step Ahead link on the Information Security website: <https://www.isc.upenn.edu/security/news-alerts#One-Step-Ahead>

Update

January AT PENN

CHILDREN’S ACTIVITIES

Penn Museum

Online events. Info: www.penn.museum/calendar.

25 *At-Home Anthro Live: The Story of the Chinese Zodiac*; 1 p.m.

EXHIBITS

Penn Museum

Online and in-person events. Info: www.penn.museum/calendar.

21 *Virtual Global Guide Tour: Mexico & Central American Gallery*; 2:30 p.m.

FITNESS AND LEARNING

21 *SNF Paideia Fellows Meet and Greet*; hear from Class of 2024 students about their experience in the SNF Paideia Fellowship Program; 3 p.m.; Zoom webinar; register: <https://tinyurl.com/paideia-info-jan-21> (SNF Paideia Program).

Center for Undergraduate Research & Fellowships

Online webinars. Info: <https://www.curf.upenn.edu/curf-events>.

21 *Fellowships Explained*; 2 p.m.

Udall Information Session and Scholar Panel; 4 p.m.

Graduate School of Education (GSE)

Unless noted, online events. Info: <https://www.gse.upenn.edu/news/events-calendar>.

20 *Penn GSE Teacher Programs Information Session*; 5 p.m.

21 *Friday Virtual Chats with Admissions*; noon.

READINGS & SIGNINGS

19 *Discriminating Data: Correlation, Neighborhoods, and the New Politics of Recognition*; Wendy Hui Kyong Chun, Simon Fraser University; 12:30 p.m.; Zoom webinar; info: <https://tinyurl.com/chun-talk-jan-19> (Annenberg School).

TALKS

18 *Conditional Calibration: Controlling FDR Under Dependence and Uniformly Improving Knockoff Methods*; Will Fithian, UC Berkeley; BlueJeans webinar; register: <https://bluejeans.com/113449012/0327> (Center for Clinical Epidemiology & Biostatistics).

19 *Plant Chromatin “Senses” Mechanical Stress*; Kateryna Fal, Université de Lyon; 11 a.m.; Zoom webinar; register: <https://tinyurl.com/mechanobiology-spring-2022> (Center for Engineering Mechanobiology).

Human Monoclonal Antibody Therapy for HIV-1 Infection; Michel C. Nussenzweig, Howard Hughes Medical Institute; noon; BlueJeans webinar; join: <https://primetime.bluejeans.com/a2m/live-event/xqbwzwhrb> (Penn Center for AIDS Research, Microbiology).

Tackling Disease-Associated Biomolecules: From RNA Therapeutics to Single-Molecule Detection; Connie Wu, Harvard; 3:30 p.m.; Wu and Chen Auditorium, Levine Building; info: <https://cbe.seas.upenn.edu/events/> (Chemical and Biomolecular Engineering).

(continued on page 11)

(continued from page 10)

Tulip Figures and Ottoman Fashions in Renaissance Art and Natural History; Vin Nardizzi, University of British Columbia; 4:30 p.m.; Zoom webinar; info: jgreebel@sas.upenn.edu (English).

20 *Cardiovascular Safety of Biologic and Targeted-Synthetic DMARDs in Patients with Rheumatoid Arthritis*; Seo Young Kim, Harvard; 9 a.m.; BlueJeans webinar; join: <https://bluejeans.com/873734674/4747?src=join> info (Center for Clinical Epidemiology & Biostatistics).

How Do Tissues Fracture and Repair Across Length Scales? Ottman Tertuliano, MEAM; 10:30 a.m.; Zoom webinar; join: <https://tinyurl.com/tertuliano-talk-jan-20> (Materials Science & Engineering).

Special Briefing: 2022 Outlook for States and Cities; panel of speakers; 11 a.m.; Zoom webinar; register: <https://tinyurl.com/iur-briefing-jan-20> (Penn Institute for Urban Research).

Embodying the Complexity of Korean Queerness: Affective Counter-profiling, Affective Solidarity, and Reconfigured Citizenship; Woori Han, CDCS; noon; Zoom webinar; register: <https://tinyurl.com/han-talk-jan-20> (Korean Studies).

Engineering New Tools to Understand Airway Mucosal Barrier Function; Gregg Duncan, University of Maryland; 3:30 p.m.; room 216, Moore Building and Zoom webinar; info: be@seas.upenn.edu (Bioengineering).

Aristophanic Gyno-Futures: Reproduction Transness Disability; Mario Telò, UC Berkeley; 4:45 p.m.; Zoom webinar; register: <https://tinyurl.com/classical-studies-spring-2022> (Classical Studies).

The Origins and Futures of the Modern Research University; Emily Levine, Stanford; 5 p.m.; Zoom webinar; join: <https://tinyurl.com/levine-talk-jan-20> (History, Wolf Humanities Center, German, GSE).

21 *Becoming a Resilient Scientist*; Sharon Milgram, NIH; 10 a.m.; Zoom webinar; info: bgsa.academic@gmail.com (Biomedical Graduate Studies).

Exploration of Deep-Sea Environments Using Passive Acoustic Technologies; Holger Klinck, Cornell; 3 p.m.; Zoom webinar; info: [https://earth.sas.upenn.edu/events/ees-seminar-](https://earth.sas.upenn.edu/events/ees-seminar-series-dr-holger-klinck)

[series-dr-holger-klinck](https://earth.sas.upenn.edu/events/ees-seminar-series-dr-holger-klinck) (Earth & Environmental Studies).

24 *On the Cohomology of Seaweed Algebras*; Alan Hylton and Vince Coll, Lehigh; 2 p.m.; Zoom webinar; join: <https://upenn.zoom.us/j/96850916585> (Mathematics).

For Better or Worse: The Role of Social Identity in the Pandemic; Jay Van Bavel, NYU; 3:30 p.m.; Zoom webinar; info: <https://tinyurl.com/van-bavel-talk-jan-24> (Psychology).

Indigenous Identities and Activism; panel of speakers; 4 p.m.; Zoom webinar; join: <https://kansas.zoom.us/j/93569894889#success> (Center for Latin American and Latinx Studies).

Making and Knowing in Early Modern How-To Texts; Pamela H. Smith, Columbia; 5:15 p.m.; online webinar; info: <https://pennmaterialtexts.org/about/events/> (Workshop in the History of Material Texts).

25 *Orchestrating B Cell Responses to Drive Protective T Cell Immunity to Solid Tumors*; Chrystal Paulos, Emory University; noon; GoTo-Meeting webinar; join: <https://global.gotomeeting.com/join/227215405> (Wistar Institute).

The Hippocampus: A Brain Region Worth Remembering; Douglas Coulter, pediatrics; Amelia Eisch, anesthesiology and critical care; Dong Wang, Drexel University; 6 p.m.; Crowdcast webinar; register: <https://www.crowdcast.io/e/neurolecture-hippocampus> (Biomedical Graduate Studies).

Continuing Education Series: Current Oncology Clinical Trials and New Therapies for Cancer; Brian Flesner, oncology; 7 p.m.; Zoom webinar; register: www.alumni.upenn.edu/oncotrialsjan25 (Penn Vet).

Penn Dental

Unless noted, online webinars. Info: <https://www.dental.upenn.edu/news-events/events/>.

21 *Oral Appliances and TMDs*; Charles Greene, University of Illinois Chicago; 7 p.m.

Economics

Online webinars. Info: <https://economics.sas.upenn.edu/events>.

19 *Designing Representative and Balanced Experiments by Local Randomization*; Max Cytrynbaum, MIT; 12:30 p.m.

20 *Redesigning Federal Student Aid in Higher Education*; Luis Armona, Stanford; noon.

21 *(Don't) Take Me Home: Home Bias and the Effect of Self-Driving Trucks on Interstate Trade*; Ron Yang, Harvard; noon.

24 *Affirmative Action in Centralized College Admission Systems: Evidence from Brazil*; Sebastian Otero, Stanford; noon.

25 *Monitoring Team Members: Information Waste and the Self-Promotion Trap*; Matteo Camboni, Northwestern University; noon.

Sociology

Locations TBA. Info: <https://sociology.sas.upenn.edu/events>.

20 *Marriage Engagements in New Delhi*; Megan Reed, sociology; 9:30 a.m.

24 *Family Composition among US Children: Dynamic, Diverse, and Dispersed*; Paula Fomby, University of Michigan; noon.

Parenting and the Transition to Adulthood; Elena Van Stee, sociology; noon.

AT PENN Deadlines

For more events, visit the [January AT PENN calendar](https://calendar.upenn.edu) online. The February AT PENN calendar will be published on January 25. To submit an event for a future AT PENN calendar or update, email the salient details to us at almanac@upenn.edu.



On January 25, children can learn about the Chinese Zodiac just in time for Lunar New Year 2022, the Year of the Tiger.

Almanac

3910 Chestnut Street, 2nd floor
Philadelphia, PA 19104-3111
Phone: (215) 898-5274 or 5275
Email: almanac@upenn.edu
URL: www.upenn.edu/almanac

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The University of Pennsylvania Police Department Community Crime Report

About the Crime Report: There are no Crimes Against Persons or Crimes Against Society from the campus report for January 3-9, 2022. Eight crimes against property were reported (3 burglaries, 1 arson, 1 retail theft, 1 theft from vehicle, 1 theft other, and 1 other offense) with 3 arrests. Full reports are available at: <https://almanac.upenn.edu/sections/crimes> Prior weeks' reports are also online.—Eds.

This summary is prepared by the Division of Public Safety and includes all criminal incidents reported and made known to the University Police Department between the dates of **January 3-9, 2022**. The University Police actively patrol from Market St to Baltimore Avenue and from the Schuylkill River to 43rd St in conjunction with the Philadelphia Police. In this effort to provide you with a thorough and accurate report on public safety concerns, we hope that your increased awareness will lessen the opportunity for crime. For any concerns or suggestions regarding this report, please call the Division of Public Safety at (215) 898-4482.

18th District

Below are the Crimes Against Persons from the 18th District: 10 incidents (5 aggravated assaults, 2 assaults, 2 robberies, and 1 rape) and 1 arrest were reported for **January 3-9, 2022** by the 18th District covering the Schuylkill River to 49th St & Market St to Woodland Avenue.

01/04/22	4:39 PM	3330 Market St	Assault
01/04/22	9:27 PM	4613 Baltimore St	Robbery
01/05/22	6:00 AM	3401 Civic Center Blvd	Assault
01/05/22	7:52 PM	S 42nd St & Chester Ave	Aggravated Assault
01/06/22	6:28 PM	S 40th & Market Sts	Aggravated Assault
01/06/22	9:35 PM	4500 Blk Walnut St	Rape
01/07/22	4:53 AM	4200 Chestnut Ave	Aggravated Assault
01/07/22	10:30 AM	N 46th & Market Sts	Robbery
01/08/22	9:46 PM	4636 Walnut St	Aggravated Assault/Arrest
01/08/22	11:44 PM	1102 S 47th St	Aggravated Assault

Vaccine-like mRNA Injection Can Be Used to Make CAR T Cells in the Body

Experimental immunotherapy can temporarily reprogram patients' immune cells to attack a specific target via only a single injection of messenger RNA (mRNA), similar to the mRNA-based COVID-19 vaccines, according to a new study from researchers in the Perelman School of Medicine at the University of Pennsylvania.

The researchers, whose work was published on January 6 in *Science*, demonstrated the new approach with an mRNA preparation that reprograms T cells—a powerful type of immune cell—to attack heart fibroblast cells. Heart failure is often driven in part by these fibroblast cells, which respond to heart injury and inflammation by chronically overproducing fibrous material that stiffens the heart muscle, impairing heart function—a condition called fibrosis. In experiments in mice that model heart failure, the reduction in cardiac fibroblasts caused by the reprogrammed T cells led to a dramatic reversal of fibrosis.

"Fibrosis underlies many serious disorders, including heart failure, liver disease, and kidney failure, and this technology could turn out to be a scalable and affordable way to address an enormous medical burden," said senior author Jonathan A. Epstein, chief scientific officer at Penn Medicine and executive vice dean and the William Wikoff Smith Professor of Cardiovascular Research in the Perelman School of Medicine. "But the most notable advancement is the ability to engineer T cells for a specific clinical application without having to take them out of the patient's body."

The new technique is based on chimeric antigen receptor (CAR) T cell technology, which, until now, has required the harvesting of a patient's T cells and their genetic reprogramming in the lab to recognize markers on specific cell types in the body. These specially targeted T cells can then be multiplied using cell culture techniques and re-infused into the patient to attack a specific cell type. The first CAR T cell therapy was developed by researchers from Penn and Children's Hospital of Philadelphia and approved by the U.S. Food and Drug Administration in 2017 for use against certain leukemias—and later approved for lymphoma—that arise from immune cells called B cells.

Although CAR T cell technology is currently used primarily for treating cancers, with dramatic results in many otherwise hopeless cases, its developers have long envisioned harnessing the approach for other diseases. Indeed, Dr. Epstein and colleagues showed in a 2019 study that the standard CAR T cell approach can be used to attack overactive cardiac fibroblasts and restore heart function in a mouse model of heart failure.

However, this standard CAR T cell strategy would be problematic when directed against heart failure or other fibrotic diseases in humans. Fibroblasts have a normal and important function in the body, especially in wound healing. CAR T cells that are reprogrammed genetically to attack fibroblasts could survive in the body for months or even years, suppressing the fibroblast population and impairing wound-healing for all that time.

Therefore, in the new study, Dr. Epstein and colleagues devised a technique for a more temporary and controllable, and procedurally much simpler, type of CAR T cell therapy. They designed mRNA that encodes a T-cell receptor targeting activated fibroblasts and encapsulated the mRNA within tiny, bubble-like lipid nanoparticles (LNPs) that are themselves covered in molecules that home in on T cells. That technology is also crucial to the mRNA COVID-19 vaccines now in use across the globe.

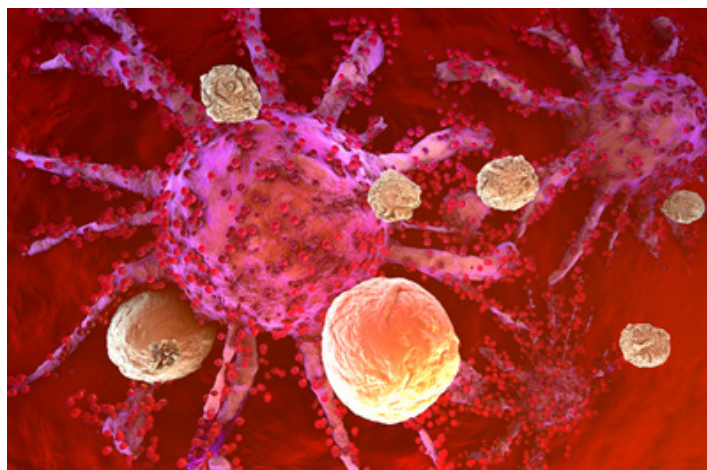


Image of a CAR T cell.

"Standard CAR T cell technology involves modifying patients' T cells outside the body, which is expensive and difficult to scale for common diseases or for use in less wealthy countries," said study co-author Drew Weissman, the Roberts Family Professor in Vaccine Research at Penn. "Making functional CAR T cells inside the body greatly extends the promise of the mRNA/LNP platform."

Injected into mice, the encapsulated mRNA molecules are taken up by T cells and act as templates for the production of the fibroblast-targeting receptor, effectively reprogramming the T cells to attack activated fibroblasts. This reprogramming is very temporary, however. The mRNAs are not integrated into T-cell DNA and survive within T cells for only a few days—after which the T cells revert to normal and no longer target fibroblasts.

The scientists found that, despite this brief duration of activity, injections of the mRNA in mice that model heart failure successfully reprogrammed a large population of mouse T cells, causing a major reduction of heart fibrosis in the animals and a restoration of mostly normal heart size and function with no evidence of continued anti-fibroblast T cell activity one week after treatment.

The researchers are continuing to test this mRNA-based, transient CAR T cell technology, with the hope of eventually starting clinical trials.

Along with Drs. Epstein and Weissman, the other co-corresponding authors are Haig Aghajanian, co-founder and vice president of research at Capstan Therapeutics; and Hamideh Parhiz, a research assistant professor of medicine at Penn. Joel Rurik, the lead author, is a PhD candidate in Dr. Epstein's laboratory.

Funding for the study was provided by the National Institutes of Health.

Adapted from a [Penn Medicine News article](#), January 6, 2022.