SEPT. 7, 2026

THE 100 MOST INFLUENTIAL PEOPLE IN ARTIFICIAL INTELLIGENCE

TIME 100/AI

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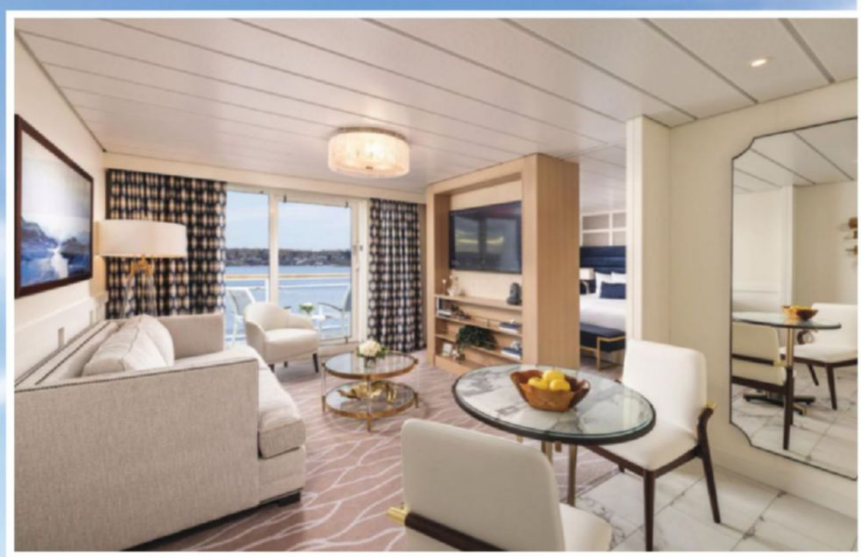

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TIME
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Photograph by Will Matsuda for TIME

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Consequential tech

AI has been explosive and divisive, filled with big promises and big fears

WE STARTED THE TIME100 AI THREE YEARS ago with the goal of determining who were the most influential leaders in artificial intelligence, knowing that such a list would serve as a guide for our readers seeking to understand a booming field. Since then, if your experience with AI is anything like mine, the technology has gone from a curiosity to a constant in how we work and organize our lives. It's become a primary way the world seeks out knowledge.

The activity in AI has been explosive and divisive, filled with big promises and big fears. The individuals on the 2026 TIME100 AI reflect the tumultuous state of this field. In the past 12 months, we've seen executives like xAI's Elon Musk take leading AI firms to the public markets; figures like Anthropic's Dario Amodei clash with the Pentagon over how AI tools are used in war; founders like Oracle's Larry Ellison rush to build the data centers the industry says AI needs to reach its full potential; and researchers like Chinese startup Moonshot AI's Yang Zhilin build models that attract extraordinary attention and on occasion outperform the most advanced U.S. competitors. At the same time, a growing coalition of politicians and advocates like Senator Bernie Sanders, labor leader Liz Schuler, and actor Joseph Gordon-Levitt are warning what these changes could mean. "The bottom line is, I think we have to stop the development of superintelligence," Sanders tells TIME.

OpenAI's Sam Altman, left, and TIME's Sam Jacobs at a TIME event in 2023

THIS YEAR'S LIST SELECTION was led by Ayesha Javed, who spent months working with TIME journalists and contributors to find the group of 100 individuals who best represent the year's key storylines and who, in our opinion, are having the most influence in driving these developments. Alongside this year's list, we take an unprecedented look inside OpenAI, whose release of ChatGPT in 2022 unleashed the world's fascination with what this technology can do. For a stretch, the AI research company has seemed to lose momentum. Across dozens of interviews, we talked with company executives about how they think they are getting it back.

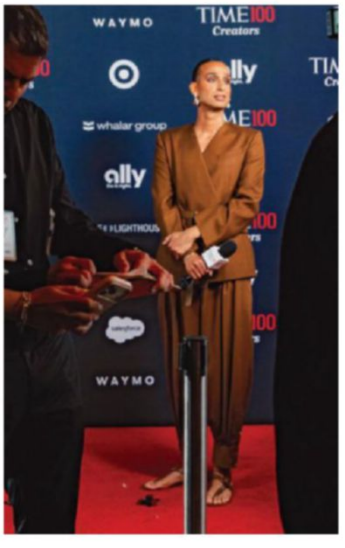
The growth of TIME100 AI is part of a more significant ambition at TIME, as we seek to lead our industry in the coverage of the remaking of the world by artificial intelligence. In recent years, our global team of reporters, editors, and producers has brought readers inside companies like Anthropic, Google, Nvidia, and Waymo; broken news on robotics revealing what the next wave of automation looks like; and reported on the global data-center boom and the political backlash it has provoked, from a remote valley above the Arctic Circle in Norway to frontline communities in Tennessee and Texas. Last December, we named "The Architects of AI" our Person of the Year, a decision that reflected our commitment to covering the leaders shaping this technology and its meaning for our world.

To support our continued investment in this work, we're now expanding the presence of our AI team, adding reporters in London; Washington, D.C.; and San Francisco. We're also evolving the ways you can find their journalism. This fall, we'll relaunch In the Loop, our newsletter about AI, with a new format. In the coming months, we plan to expand it to five days a week, giving readers a daily, essential briefing on the industry and the influences shaping it. Next year, we'll build on the success of this year's AI events in Davos, Switzerland; Cannes, France; New York City; and San Francisco by launching our first-ever TIME100 AI Leadership Forum in Washington, D.C. We are exploring additional opportunities to convene the world's most influential AI leaders internationally too.

This work reflects TIME's commitment to covering the most consequential story of our time with the ambition it demands—across every platform, through access and accountability, and careful scrutiny of AI's promise and perils.

Sam Jacobs,
EDITOR-IN-CHIEF

MIKE COPPOLA—GETTY IMAGES FOR TIME



TIME celebrates a new class of creators

Clockwise from top: attendees celebrate the second annual list of the most influential digital voices of the year at the TIME100 Creators party in Brooklyn on July 30; TIME CEO Jessica Sibley and honoree Alix Earle, who's on the cover; honoree Micky Gordon laughs with influencer Katie Fang and honoree Boman Martinez-Reid; and Cyrus Veyssi, who was on the 2025 list, between interviews on the red carpet. Find the list and TIME's coverage of the event on **time.com**

TIME Games

Play seven different daily puzzles at the new **time.com/games,** from classics like Sudoku to original concepts like Linked, the word-association game below. *(Find the answer on the side of this page.)*

*Pick one word in each column to create a connection from **SILVER** to **WRANGLER***

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LINING	AREA	BUG	JEANS
CHROME	STOMACH	ROPE	JEEP

SILVER → WRANGLER

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SETTING THE RECORD STRAIGHT

In "Mining America, Again" (Aug. 17) we mischaracterized the relationship between Thacker Pass and the Fort McDermitt Paiute and Shoshone Tribe; the parties negotiated a community-benefits agreement. In the UFOs feature in the same issue, we misstated the location of Area 51. It is in Nevada.

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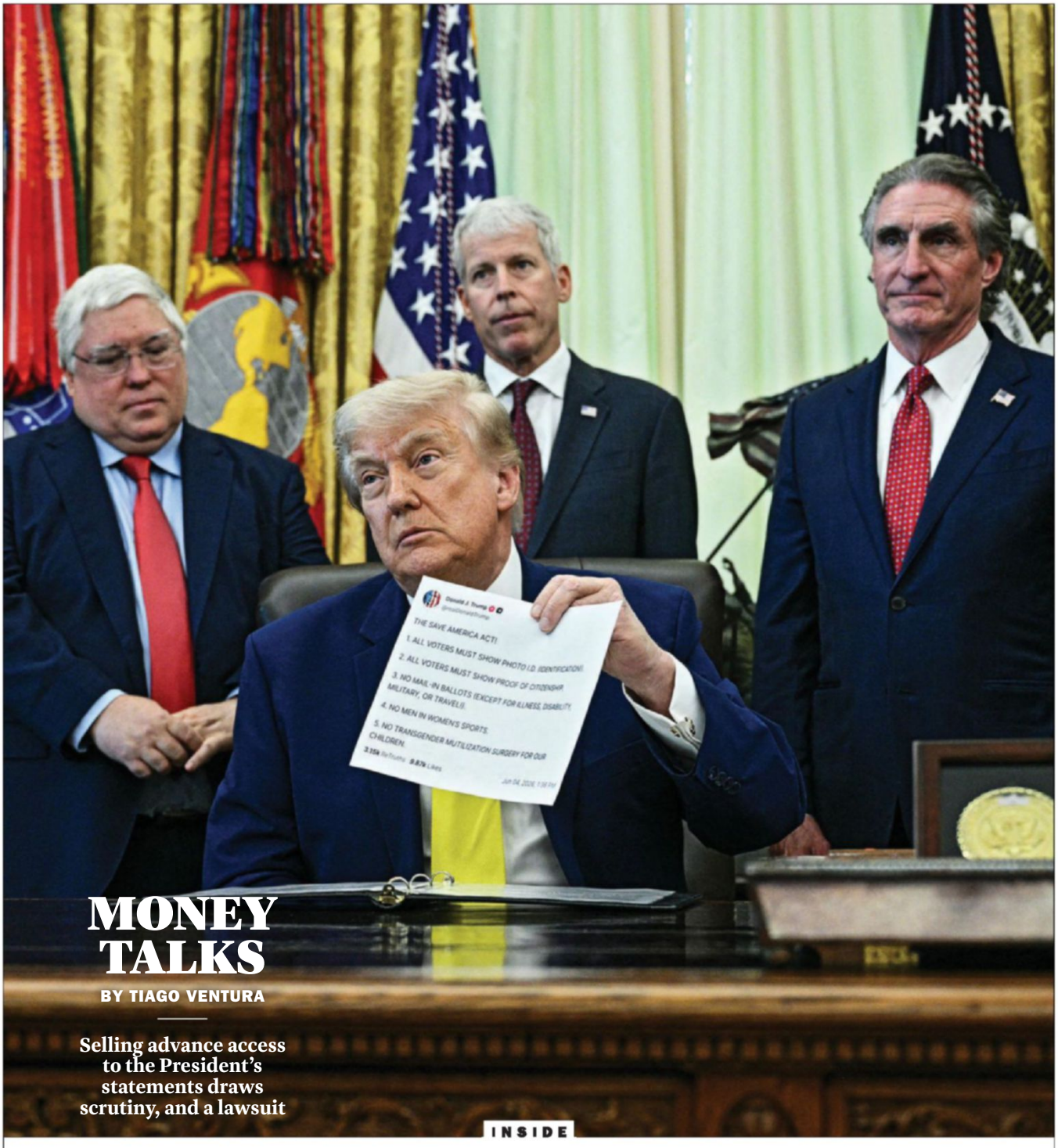
The Brief



MONEY TALKS

BY TIAGO VENTURA

Selling advance access to the President's statements draws scrutiny, and a lawsuit

INSIDE

PHOTOGRAPH BY BRENDAN SMIALOWSKI

WHETHER HE IS ANNOUNCING TARIFFS OR offering updates on the Iran war and the status of the Strait of Hormuz, President Donald Trump has long turned to Truth Social to share important news. And, since Aug. 1, there's been a new way to gain early access to that information: a service that to the tune of up to $100,000 a month offers paying subscribers a sneak peek at posts from high-profile accounts, including Trump's own, which boasts 13 million followers.

Now, in a lawsuit filed Aug. 12 in a New York federal court, two media entities, the Intercept and the Freedom of the Press Foundation, claim that the Truth API service offered by the Trump Media and Technology Group (TMTG) is "profoundly corrupt," as the President "stands to gain financially by giving 'market-moving' government information to those who are willing and able to pay his personal company"—and that media organizations like the Intercept that do not pay to participate will be left at an unfair competitive disadvantage.

TMTG previously said that the commercial data feed would deliver posts to its customers in "milliseconds" and that it had been designed "for organizations most impacted by the cost of a delay in information."

"Markets already move on Truth Social posts," said Kevin McGurn, interim chief executive officer of TMTG, ahead of the service's launch. "Truth API delivers a direct, licensed, real-time feed of the platform's most market-moving Truths while advancing our strategy to monetize proprietary assets through a high-margin, recurring revenue stream."

The lawsuit aims to prohibit the White House from posting official government announcements exclusively on Truth Social so long as the paid service exists. Trump has "published between 9,000 and 11,000 posts or reposts on Truth Social" since resuming office, and "often" his announcements have "no immediate corresponding announcement from the White House," suggesting that "Trump's posts are the only way to get official government news," the complaint argues. Trump—who holds the largest stake in TMTG, through a revocable trust—and other White House officials are listed as defendants, but TMTG is not.

The White House did not respond to requests for comment from TIME and other news organizations.

THE LEGAL CHALLENGE amplified existing charges that President Trump has traded on his office to make money. His most recent financial-disclosure statement, released June 30, said that he had made $2.2 billion in 2025, including $1.4 billion from his family's cryptocurrency ventures.

The Truth Social lawsuit says it aims to prohibit the President from personally profiting from selling privileged access to information generated in his official capacity.

"The President's public statements are for the public, not a wealthy few. Our democracy depends on upholding the Constitution and enjoining Trump's corrupt scheme," said Brendan Ballou, a lawyer representing the media plaintiffs.

The suit also names Natalie Harp, executive assistant to the President, and White House deputy chief of staff Daniel Scavino, who both have access to Trump's Truth Social account, according to the lawsuit, and the Executive Office of the President along with the White House Office.

'The President's public statements are for the public, not a wealthy few.'

—BRENDAN BALLOU,
ATTORNEY FOR MEDIA PLAINTIFFS

The legal challenge lands in the midst of mounting backlash over the data feed, as Democratic lawmakers have already called for probes into the service, citing concerns over potential market impacts.

Senators Adam Schiff of California and Elizabeth Warren of Massachusetts on July 28 urged the Securities and Exchange Commission (SEC) to investigate possible insider-trading and market-manipulation implications related to the release of Truth API. (The SEC did not respond to a request for comment from TIME.)

"Trump Media's new service threatens to undermine the integrity of capital markets. Because of this service, social media posts about the President's opinion or policy intent will not be available to the public or ordinary investors at the same speed as [for] Wall Street firms and wealthy insiders paying for access," the Senators wrote.

In a July 30 letter, Representative Jamie Raskin of Maryland detailed the opening of a House Judiciary Committee minority investigation into the Truth Social service, demanding Trump Media's communications with officials, customer identities, pricing, marketing materials, internal eligibility policies, and revenue projections.

At an Aug. 6 hearing titled "Empowering Main Street by Unlocking Access to Capital," Senator Warren asked four witnesses, all experts from the world of investment and financial markets, to raise their hands if they believed Trump selling faster access was good for market integrity. None did. ◻

The Brief includes reporting by Chantelle Lee

Eclipsed

People gather on Aug. 12 near the Javalambre Astrophysical Observatory in Arcos de las Salinas, near Teruel, Spain, to watch a total solar eclipse. The phenomenon, which occurs when the moon passes between the sun and Earth, was visible from parts of Europe for the first time in nearly three decades, and lasted about four hours.

OPENING PAGE: AFP/GETTY IMAGES; ECLIPSE: CHRISTIAN HARTMANN—REUTERS

THE BULLETIN

Eurovision Song Contest bars warring countries from hosting

EUROVISION, THE WORLD'S BIGGEST international song contest, announced on Aug. 12 that countries at war would no longer be allowed to host the competition.

SECURITY CONCERNS Traditionally, the host nation is the previous year's winner, but under the new rules, a country will "automatically be ineligible to host the contest if an armed conflict, a sensitive geopolitical situation, or any other situation materially affects the security, safety or stability of their state or immediate region," said the European Broadcasting Union (EBU), which organizes the contest. Public broadcasters from countries outside Europe, like Canada, can participate in the contest by joining the EBU.

CONSISTENCY The EBU has moved competitions before over geopolitical issues, even though no formal rule existed. The U.K. city of Liverpool hosted the 2023 contest on behalf of Ukraine, because it was at war with Russia—which had been banned from competing after invading.

More recently, controversy has swelled around the participation of Israel, which joined the competition in 1973 and has won four times, most recently in 2018.

BOYCOTT This year, Iceland, Ireland, the Netherlands, Slovenia, and Spain boycotted the competition in Vienna after the EBU refused calls to suspend Israel over its conduct of the war in Gaza, where its forces have killed more than 73,000 people since the Oct. 7, 2023, Hamas attack on Israel that killed 1,200. Broadcasters have argued that Eurovision competitors are not ordinary performers but representatives of their nations. Eurovision "is not merely a song contest," José Pablo López, president of Spain's public broadcaster RTVE, said. It's "the most politicized festival in existence."

Israel's government was accused of measures to boost the audience televote in the 2025 and 2026 contests, in which Israel finished second. Israel replied that it was operating within the rules, and issued a statement accusing critics of a smear campaign. "Israel deserves to be represented on every stage around the world," Israeli President Isaac Herzog declared in a December post. —MIRANDA JEYARETNAM

GOOD QUESTION

Why is Ukraine targeting 'Russia's Amazon'?

BY OLIVIA-ANNE CLEARY AND CALLUM SUTHERLAND

OFTEN DESCRIBED AS "RUSSIA'S AMAZON," THE E-commerce giant Wildberries operates dozens of warehouses across Russia and plays a core role in the country's consumer economy. Since July 18, Ukraine has targeted at least 20 sites belonging to the company, with Kyiv calling out the locations as "logistics centers" that support Russia's military. Moscow and Wildberries deny the allegation.

With the Russia-Ukraine war in its fifth year, the conflict blends trench warfare with long-range attacks deep into the other country that create political pressure on the opposite side by disrupting the lives of ordinary citizens. The 437 civilians killed in Ukraine by Russian attacks in July was the most since 2022, while Ukraine uses drone strikes to target infrastructure and supply networks. The attacks on Wildberries underscored the retailer's economic importance, its ties to the country's financial sector, and the potential impact on ordinary Russian consumers.

Smoke rises from a Wildberries facility in St. Petersburg after an attack in July

As Russia's largest online retailer, Wildberries hosts third-party sellers and facilitates everything from household goods to air travel, and it even has a financial arm, WB Bank. In May, Wildberries announced a strategic partnership with VTB Bank, a Russian majority state-owned institution. In mid-July, the European Commission included the bank in the latest package of sanctions E.U. states enforce against Russia. "Wildberries Bank LLC is involved in an economic sector providing a substantial source of revenue to the Government of the Russian Federation, which is responsible for the annexation of Crimea and the destabilisation of Ukraine," declared the council of the European Union.

WILDBERRIES WAS FOUNDED by Tatyana Kim, formerly Tatyana Bakalchuk, in 2004. A former English teacher, Kim was 28 years old and on maternity leave when she launched the initiative, and was later joined by her now ex-husband Vladislav Bakalchuk.

As Wildberries grew, so did Kim's fortune. *Forbes* estimates her net worth at $8.1 billion, making her Russia's richest woman. "Wildberries has grown from small origins to be one of two major internet marketplaces in Russia," Charles Hecker, an associate fellow in international security at the Royal United Services Institute think tank, tells TIME. (The other one is called Ozon.) "It's an enormously prominent company, and Kim is an incredibly prominent businessperson in Russia."

'Attacking Wildberries impacts the Russian consumer.'

—CHARLES HECKER, INTERNATIONAL SECURITY ANALYST

Kyiv insists Wildberries is key to Russia's military supply chain. "Ukraine's official reason behind attacking Wildberries is that Ukraine believes the website is used as a channel for military components," says Hecker. Kremlin spokesperson Dmitry Peskov has rebutted accusations that Wildberries warehouses are used for Russian army supplies. Kim has also rejected the allegations. In a July 31 video uploaded to Telegram, she argued Kyiv's drone attacks on sites linked to Wildberries amount to "acts of terrorism" against civilians. In response to accusations that Wildberries sells dual-use goods—items that can have both civilian and military uses—Kim said the company doesn't offer anything that is not also available on major global e-commerce platforms such as Amazon or Alibaba.

Wildberries has issued statements pledging financial support for some sellers whose goods were damaged. According to the Washington, D.C.–based think tank Institute for the Study of War, Ukraine's strike campaign "has increased the cost of the war for small and medium-sized Russian businesses reliant on the Wildberries platform, as well as on the Russian consumers who utilize the Wildberries service, largely in urban areas that the Kremlin has sought to shield from the war."

The realities of these financial repercussions stand in stark contrast to assurances made by Russian President Vladimir Putin in 2022.

"Putin said at the beginning of the full-scale invasion of Ukraine that the war would not impact the way Russians lead their lives," says Hecker. "But attacking Wildberries impacts the Russian consumer, and this comes on top of inflation and periodic mobile internet outages across Russia. It's difficult now for Putin to say that the war on Ukraine is not impacting the way ordinary Russians live." ◻

DIED

Hayden Panettiere

Super star

THE ACTOR HAYDEN PANETTIERE, WHO died Aug. 16 at 36, was perhaps best known for her role as Claire Bennet in the superhero TV series *Heroes*. But it was a real superpower that played a special role in her acting career, she told CBS in an interview about her May 2026 memoir, *This Is Me: A Reckoning*: "Once people figured out that I could cry on cue the way that I did, it was in everything." At first, she said, she would imagine her pet passing away. "But then as I got older, the imagery became darker," she said.

She spoke candidly about sadness in her own life—from dealing with aggressive paparazzi when she was a teen to coping with her brother's death in 2023. She was also open about her struggles with postpartum depression. "There I am with this beautiful, healthy, beautiful baby girl in this very fortunate life, and I could not, for the whole life of me, be happy," she told CBS while promoting her book. In it, she went further, describing turning to drugs and alcohol to cope. She entered a rehabilitation facility in 2020.

Panettiere's career began before she could walk: she appeared in a commercial at just 11 months old. She was then regularly cast in shows and movies throughout the 2000s, including *Remember the Titans* and *Scream 4*. She also played Juliette Barnes, one of the leading roles in *Nashville*, the country-music series that aired from 2012 to 2018. Panettiere returned to the *Scream* horror franchise in 2023, but in recent years she had stayed largely out of the limelight.

"I wish the world had more time with you because I had a burning curiosity about who you were becoming," said Viola Davis, who starred alongside Panettiere in the 2016 drama *Custody*, in a post on social media. "Your tests became your testimony, and your testimony became your legacy." —CALLUM SUTHERLAND

RESIGNED

Karoline Leavitt

Press secy out

Karoline Leavitt will depart from her position as White House press secretary at the end of August to spend more time with her family, President Donald Trump announced on Aug. 12. Leavitt, who gave birth to her second child in May, thanked Trump and the White House team on X, adding that she would remain "a vocal advocate for MAGA and the Republican Party."

Having gotten her start in 2018 as a White House intern, Leavitt worked as Trump's presidential campaign spokesperson in 2024 and became the youngest-ever White House press secretary when she assumed office in 2025 at age 27. It is unclear who will replace her at the podium. —*Philip Wang*

DEFEATED
Count Binface, **a satirical candidate dressed as a garbage can,** by right-wing Reform UK leader Nigel Farage in an Aug. 13 parliamentary by-election that was boycotted by Britain's major parties.

ARRESTED
Five suspects in connection to the March **theft of three works of art** by Cézanne, Renoir, and Matisse, worth an estimated $10 million in total, Italian police announced on Aug. 14.

STARTED
The Las Vegas trial for the first person charged in the 1996 murder of **Tupac Shakur,** on Aug. 17. The prosecution alleges Duane "Keffe D" Davis, who pleaded not guilty, coordinated the attack.

PLEADED
Luigi Mangione, guilty on Aug. 14 to two federal stalking charges related to the fatal 2024 shooting of UnitedHealthcare CEO Brian Thompson. Mangione still faces state charges.

HEALTH

Stop saying there's a nursing shortage

BY ALANA SEMUELS

TURN ON THE TELEVISION OR SCROLL DOWN A NEWS feed, and you might think that the U.S. desperately needs to train more nurses. Arizona has nearly 30,000 nursing vacancies, local TV stations there recently reported; Pennsylvania Republicans met in early June to discuss how to fill the state's nursing shortage. Two schools are even opening new nursing programs in Georgia to meet that state's projected nursing shortage.

Yet more people are going into nursing; 280,308 people passed the NCLEX examination to become a registered nurse (RN) or licensed practical nurse (LPN) in 2025, a 34% increase from 2016, according to the National Council of State Boards of Nursing. And currently 7 million registered nurses and practical nurses hold an active license in at least one state, according to the council.

But there were only about 3.4 million jobs for RNs in 2024, the most recent year for which data are available, and 651,400 jobs for LPNs and licensed vocational nurses the same year, according to the Bureau of Labor Statistics—meaning that there are substantively more actively licensed nurses than there are nursing jobs. The implication is that well over 2 million licensed nurses are not currently working as nurses for patients.

This data—and the experience of many nurses across the country—suggest that the U.S. may have less an actual shortage of licensed nurses than a shortage of nurses who are willing to work in bedside jobs that have become increasingly demanding. Pressure on nursing has not let up since the pandemic, nurses say, because of cost-cutting at hospitals and health systems that ask them to do more work with fewer resources.

"We're really putting a lot of money into building a pipeline for nursing, but if nurses are leaving after a year or two of getting into employment, the problem isn't so much a pipeline problem as a leaking gas tank," says Karen Lasater, a professor at the University of Pennsylvania School of Nursing who studies what she calls the nursing-retention crisis.

Conditions for nurses were bad before the pandemic, got even worse during it, and appear to be deteriorating further a few years out, according to research Lasater and her colleagues recently published in the journal *Medical Care*. Postpandemic, more than two-thirds of hospital nurses reported having too few staff, compared with 57% before the pandemic, according to the paper, which surveyed 50,044 nurses in hospitals across New York and Illinois. From December 2023 to March 2024, about one-third of nurses said that they were dissatisfied and that they intended to leave their employer—significantly higher than prepandemic and pandemic levels.

That the work was getting harder was not something they imagined. Among nurses working on medical-surgical units, the average staffing ratio increased to six patients per nurse, up from 5.7 prepandemic, according to the paper. (In California, one of the few states with mandated staffing ratios, ER nurses are staffed at a ratio of four patients per nurse, and labor and delivery nurses are staffed at two patients per nurse.)

"I fear that we're headed to a worse place, because it's apparent that we didn't learn much from the COVID-19 pandemic," Lasater says.

Nursing students in Arvada, Colo., wrap a training manikin in April 2026

Ariana Lucio, a 45-year-old in El Paso, Texas, has been a nurse for 14 years and currently works in the medical-surgical unit at Del Sol Medical Center, which is owned by HCA Healthcare, the largest health system in the U.S. Her hospital has been cutting back on staffing and embracing technology that makes work harder for nurses, says Lucio. Adequate staffing is a key issue for nurses' unions and organizations, and Lucio, who is

a member of National Nurses United, has protested staffing conditions at the hospital.

Her unit used to have a clerk who would answer the phones, stock supplies, and handle paperwork, but the hospital eliminated the position, she says. Now, she says, nurses are running to answer phones, clean the break room, and pick up the tasks the unit clerk used to do. In the past, the charge nurse—often the person managing a specific hospital unit—wasn't

TIMOTHY HURST—MEDIANEWS GROUP/THE DENVER POST/GETTY IMAGES

assigned patients, Lucio says. No longer. The added responsibility of patients means the charge nurse can't as easily help other nurses with difficulties they may encounter.

"It's gotten harder, especially after COVID," says Lucio, who recently became so burned out that she went from working full time to part time. "It's coming not so much from patients but from changes in the administration."

In a statement to TIME responding to these examples of how staffing conditions have changed, Del Sol Medical Center said that its staffing is "safe and appropriate" and that it utilizes technology to "limit administrative tasks so our nurses can spend more time taking care of patients."

A study published in *JAMA Network Open* of nearly 8,000 nurses who left the profession from 2018 to 2021 found that 26% left because of burnout, and 21% cited insufficient staffing.

DATA SHOW that lower staffing ratios lower nurse burnout and improve patient outcomes. In one study of nurses at hospitals across Queensland, Australia, those who worked at hospitals that followed a minimum nurse staffing policy had 24% lower odds of high burnout and 27% lower odds of job dissatisfaction.

Minimum staffing ratios were good for patients too; they were linked to lower mortality, shorter length of stay, and less readmission, according to a separate study in the *Lancet*. The costs avoided because of fewer readmissions and shorter stays were more than twice the cost of the additional nurse staffing, the study found.

"There's really substantive cost savings," Lasater says.

Yet hospitals are often reluctant to invest in lowering their nurse-to-patient ratios. Doctors can bill for their services, making it easy for administrators to see that they bring in money, Lasater points out. But it's harder for administrators to see that nurses have an impact on the balance sheet. Instead, hospitals treat nurses like a labor expense, she says.

Rather than add nurses, many hospitals are paring back, sometimes turning to apps where they can hire nurses as gig workers. Such apps often allow hospitals to avoid paying for benefits for these workers, says Katie Wells, a senior fellow at the AI Now Institute who studies tech in health care. Having gig workers in hospitals puts additional pressure on nurses because they have to train the new staff, even though those workers may be there for only a day, Wells says. Many nurses say they'd much prefer full-time colleagues who have to be trained only once. "Lean staffing has just become the norm."

'Lean staffing has just become the norm.'

—KATIE WELLS, AI NOW INSTITUTE

The American Hospital Association argues that the issue is not lean staffing but, rather, workforce shortages that are projected to continue for more than a decade. "The growing complexity and intensity of patient care, along with overly burdensome regulatory requirements and increased administrative demands from corporate insurers, continue to place significant demands on nurses," the association said in a statement to TIME.

Hospitals are also facing increased costs of caring for patients, according to a recent post by Rick Pollack, president and CEO of the American Hospital Association, on the group's website. In 2025, he writes, hospital expenses grew 7.5%, more than twice the rate of growth in hospital prices. Hospitals are also caring for patients who are sicker and whose care is more complex than it used to be, he points out.

A few states have mandated minimum staffing ratios for hospitals. In California, where minimum staffing ratios for nurses have been in place since 2004, research shows that hospital nurses have lower burnout than nurses nationally. The state's required ratios differ depending on the unit; the medical-surgical unit has a mandated ratio of no more than five patients to one nurse, for instance, while the ICU has a mandated ratio of no more than two patients for one nurse. In Oregon, mandatory nurse staffing ratios went into effect in June 2026.

It's one reason Lasater says that the best solution for getting more nurses to stay at hospitals is to mandate nurse-to-patient ratios by legislation. It works, she says.

"Hospitals have always had the opportunity to create better staffing conditions and to create more favorable working conditions," she says. "They can voluntarily do this, but a large portion of them haven't." ◻

CLIMATE

Living through America's hottest July

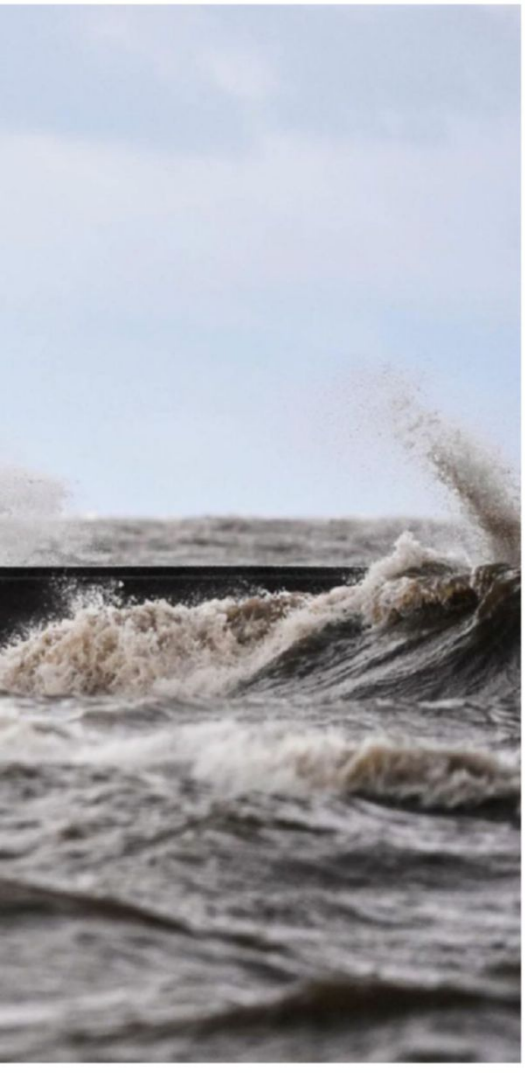
IT WAS THE HOTTEST MONTH IN recorded American history. July's average temperature was 3.3°F (1.8°C) higher than the 20th century average for the contiguous United States, according to new data from the National Oceanic and Atmospheric Administration. Millions sweltered through three separate heat-dome events, with several states, including Idaho, Utah, and Montana, setting all-time temperature records on July 12.

Yet extreme heat wasn't the only notable climate event. Wildfires in eastern Oregon burned through 140,000 acres, forcing thousands of residents to evacuate and stretching federal fire resources thin as fires also burned in Colorado, Washington, and elsewhere. Smoke from those blazes, and others in Canada, worsened air quality for millions across the country. By mid-July, Chicago was reporting the worst air quality in the world. In northern Minnesota, the Boundary Waters Canoe Area Wilderness shut down for almost two weeks.

As some Americans found themselves digging out N95 masks to walk their pets or commute to work, others saw their homes destroyed. From July 13 to July 17, more than 28 in. of rain fell in Central Texas, a deluge that brought flash floods along the Guadalupe River, killing two people. Climate change is, increasingly, both the news and the weather. —SIMMONE SHAH

A tale of two yards, on July 24 in Denver. Amid Colorado's historic drought and record low snowpack, residents have been restricted to watering twice a week

PHOTOGRAPH BY MICHAEL CIAGLO—THE WASHINGTON POST/GETTY IMAGES



Children play near breaking waves as Tropical Storm Bertha approaches the Louisiana coast on July 22 in New Orleans

PHOTOGRAPH BY GERALD HERBERT—AP

Firefighters burn off vegetation while trying to stop a wildfire called the Bench Fire from spreading in Warm Springs, Ore., on July 25

PHOTOGRAPH BY NOAH BERGER—AP

Bill Dozier, left, and Sharon Dozier sit on their flooded front porch as they talk with their grandson, Skylor Dozier, in Uvalde, Texas, on July 16

PHOTOGRAPH BY SAM OWENS—SAN ANTONIO EXPRESS-NEWS/ GETTY IMAGES

5 foods that food-safety experts never eat

BY ANGELA HAUPT

FOOD SAFETY HAS BEEN IN THE SPOTlight this summer. A record-setting outbreak of *Cyclospora,* a microscopic parasite that can contaminate fresh produce and cause days or weeks of miserable gastrointestinal illness, continues to sicken Americans. That's leaving us all more attuned than usual to whether we'll regret, in 24 hours to two weeks, what's on our plate.

Welcome to the world of food-safety experts, who are used to casting a gimlet eye on food even in the absence of outbreaks. But ask them what they won't ever eat, and the list is shorter than you'd expect.

These experts don't live in fear. Most will tell you that all food carries some risk, and the real skill is deciding which risks are worth taking. Frank Yiannas, former deputy commissioner for food policy and response at the U.S. Food and Drug Administration, says he doesn't think of foods as simply "good" or "bad." "I'm perfectly willing to be changed on things if there's evidence," he says. "If regulators identify a particular brand of a product that's being recalled, I'll check to see if we have it at home, and we'll avoid it." But generally, he prefers what he describes as a quantitative risk assessment. "I'm calculated," he says. He, for example, always orders his burgers well done.

Still, after decades of this work, these experts have each decided a handful of foods simply aren't worth the gamble. Some of their no-go items are predictable; others are surprising. Some might be sitting in your fridge right now. Still others spark professional disagreement. For example, some infectious disease physicians refuse to eat sushi—but others can't resist. (The workaround some adopt: inspecting each piece of raw fish for parasites before eating it.)

Here are five foods experts say aren't worth the risk.

PHOTO-ILLUSTRATION BY TIME; SOURCE IMAGES: FOTOGRAZIA; DEEPBLUE4YOU; HUIZENG HU; ANNICK VANDERSCHELDEN PHOTOGRAPHY; LITVALIFA—GETTY IMAGES

1. Raw milk—and cheeses made from it

There's almost no debate about this one. "It's ridiculous," says Bill Marler, a food-safety lawyer who has spent decades suing companies over outbreaks. He says he has represented families of children who have died or suffered kidney damage and neurological complications after foodborne illness linked to raw milk, and to him, the risk simply isn't worth it. It's especially hard to justify when there's a safe alternative. "You have such a great thing called pasteurization," he says.

2. Cantaloupe

Ask Darin Detwiler, an associate teaching professor of food policy at Northeastern University, to name some of the riskiest produce in the grocery store, and he doesn't hesitate: cantaloupe. "You cannot adequately clean the outside of the cantaloupe," he says. Once you run a knife through the rough rind, you drag whatever's on the surface straight into the flesh.

3. Raw oysters and other raw shellfish

Raw oysters show up on a lot of experts' no-go lists. Shellfish are filter feeders, Marler explains—they pull water through their bodies, and "anything in the water that's contaminated, they suck it into their bodies." If the water is contaminated, there's a good chance your oyster is too. It's no surprise that they're linked to frequent illness outbreaks.

4. Undercooked pork

Jill Roberts, a molecular epidemiologist and professor at the University of South Florida College of Public Health, says pork is one meat she approaches with extra caution. She avoids thick cuts like pork tenderloin because they're harder to cook all the way through. "All I can see is *Toxoplasma,*" she says. The parasite, which can also be spread through cat feces, has increasingly been linked to undercooked pork. "I'm just out on that one."

5. Sprouts

Raw sprouts are an easy pass for Barbara Kowalcyk, director of the Institute of Food Safety and Nutrition Security at George Washington University. They've been linked to a long string of foodborne-illness outbreaks, she says, "and there's really no good way to clean them." That's because bacteria can be present on sprout seeds before they're ever grown, and the warm, humid conditions needed for sprouting are also ideal for helping those bacteria multiply.

The View

NATION

THE FUTURE OF REDLINING

BY DERRICK JOHNSON

A home has never been just four walls and a roof. It has helped send children to college, start businesses, and create opportunities that last for generations, particularly for Black and brown communities. But, in the face of inflation, low supply, and high prices, that pathway is under strain. At a time when buying a home has never been more difficult, we should be expanding access—not creating new barriers.

INSIDE

Everyone, for instance, should be able to see what's for sale. Listing the full inventory of available homes online creates the transparency a buyer needs to determine where they can live, whether their home is building wealth, and what opportunities they can create for future generations. But this equitable listing model is under increasing threat.

Private listing networks (PLNs) and so-called pocket listings allow homes to be marketed privately to a select group of agents, brokers, and potential buyers instead of through a multiple listing service (MLS), the shared database real estate professionals used to find and compare homes. Supporters say these practices give sellers more choice, control, and privacy. But in today's housing market, you shouldn't have to know someone to know what's possible.

The growing acceptance of private listing networks by real estate interests signals a shift in how the market operates, with selective access becoming a central feature rather than an exception. The risks are not theoretical. Exclusive listings can reduce opportunities for first-time homebuyers: 46% of housing counselors say first-time buyers struggle with pocket listings, according to the Consumer Federation of America (CFA) and the National Urban League. Previous research found such listings can perpetuate racial exclusion and discriminatory steering. MLS-listed homes sell for 17.5% more than off-MLS homes, per Bright MLS and Drexel University. For sellers in majority-minority ZIP codes, a pocket listing translates to $9,850 less on a sale (compared with $3,700 in white neighborhoods), according to research from Zillow.

Transparency is not a luxury. When buyers can compare homes, prices, and time on market, they can make informed decisions. Sellers reach more potential buyers, and the market works more fairly for everyone.

When homes move into closed or semiclosed channels, that basic fairness can break down. Buyers who are not connected with the "right" agent, broker, or social network may never have the chance to find their dream home. Sellers may lose out on a better deal because fewer buyers know their home is available. Smaller brokerages and agents lose access to key information that is no longer shared equally.

That should concern anyone who cares about fair housing.

IN APRIL, THE MLS serving greater Chicagoland worked with the nation's largest brokerage to expand its private listing network, restricting public visibility of many home listings. A federal court recently issued a temporary restraining order to ensure the Chicago MLS continues to provide fair access. That should be a warning sign to the rest of the country. If this model spreads, public access to home listings could become a fallback rather than the default. We risk breeding the kind of widespread inequity that harks back to redlining.

Redlining denied generations of Black families equal access to mortgages, investment, and the opportunity to build wealth. During the 1930s, federal programs used maps to gauge and rate neighborhoods for lending risk. Minority neighborhoods were often unjustly marked in red ink as "hazardous," denying them mortgages and investments. Although outlawed by the Fair Housing Act of 1968, its legacy remains visible today in racial wealth gaps, segregation, and unequal opportunity. Now, a modern form of digital redlining threatens to emerge. This is more than an industry dispute. This is a civil rights issue.

States are beginning to recognize the danger. Washington and Connecticut have enacted laws to protect public access to home listings, while lawmakers in Illinois, New York, and other states are considering similar bills. Illinois' HB4964 would require most residential listings to be publicly marketed online within one calendar day unless a seller signs a formal disclosure and opt-out form. Every state should consider that kind of commonsense guardrail.

How much longer will America refuse to listen? To stop this, proponents of consumers and of the American dream must support legislation to safeguard against this practice. As the head of an organization that has fought for civil rights and social justice since 1909, let me be clear: We have seen the roots of this pattern before, and we must act with fervor to avoid repeating a history of injustice.

Johnson is the president of the NAACP

PHOTO-ILLUSTRATION BY FRANZISKA BARCZYK FOR TIME; SOURCE IMAGES: JOHNNY GREIG—GETTY IMAGES; PHAMAI TECHAPHAN—GETTY IMAGES; YEVGEN ROMANENKO—GETTY IMAGES

Bourla, right, with Jacobs on July 21

THE CEO MOMENT

The next big moves for a pharmaceutical giant

BY SAM JACOBS

AS CEO OF PFIZER, ALBERT BOURLA EMERGED ON THE global stage during the COVID pandemic, leading the vaccinemaker to new heights while becoming a prominent voice for the scientific community. The years that followed have been more challenging. The pharmaceutical giant has sought out new avenues of success with cancer-treatment drugs and to catch up with its competitors, which have dominated the market for weight-loss medications. Bourla spoke with TIME recently at his New York City HQ.

Coming out of COVID was a big comedown for Pfizer's business. You've said that impacted you psychologically. What did you mean? I'm a very, very high achiever. To go from the top performer to the bottom performer—although not in everything, but in stock price, for example—was something that I didn't take lightly. And I know that my whole organization didn't take it lightly. I needed to find the path and rally an organization behind it. I tried to explain to people, "You were the guys that saved the world when nobody thought that it could be saved. And you did it in ways that nobody thought it was possible. Guess what? We are going to do it again, with cancer this time."

You seem to be behind some of your competitors when it comes to obesity. How do you think you're going to catch up? We aspire to bring into the market an obesity treatment that instead of weekly injections requires monthly injections. That's a very big differentiation.

'It is extremely important that we do things faster.'

—ALBERT BOURLA, PFIZER CEO

What's your relationship like with Secretary of Health Robert F. Kennedy Jr.? I told him that there are things that we have very different views [on]—vaccines, for example. If we select the areas that don't have that big of a difference and try to work together to produce something good … that will create a bonding and will take away the trust issues, and then we can tackle the vaccines.

The Health Secretary has attacked a revolving door between Washington and the industry. You recently hired a top FDA official to be your chief medical officer. What went into that decision? The FDA official used to be a Pfizer employee before going to the FDA.

Is it possible for the U.S. to build a medical supply chain without China? I don't think it's a good thing to have a reliance on the supply chain of China when it comes to medicines.

But can we build it here? I think we can, but we need to provide market incentives. There was a reason why medicines that used to be manufactured in the U.S. moved out.

You've prioritized speed here at Pfizer. Are there any risks for a pharmaceutical company to be so focused on speed? I think it is extremely important that we do things faster without cutting any corners … We have a saying in Pfizer: "Time is life." Bringing medicine for a cancer patient earlier makes all the difference in the world. If that medicine will allow someone to see the wedding of the son or the graduation of the daughter, there is nothing more important in their life, and speed is what will allow them to do it.

Visit **ti.me/ceo-moment** to watch the full interview, or follow *The CEO Moment* podcast on Apple or Spotify

As night turns to day, flowers may bloom at all the wrong times

The Brief

By Jeffrey Kluger
EDITOR-AT-LARGE

HUMAN ACTIVITY CAN ALREADY DAM rivers, clear-cut jungles, irrigate deserts, and change the very climate. Now, our technology may be on the doorstep of turning nighttime to day. That's the word out of Washington, where the Federal Communications Commission (FCC) recently approved a proposal by the Hawthorne, Calif.–based company Reflect Orbital to loft **a satellite with a 60-ft.-wide mirror that will catch and beam sunlight back to Earth, artificially illuminating a patch of otherwise-dark ground**.

The launch, set for later this year, is just a beta test of the basic technology, but Reflect Orbital—which bills itself as "The Sunlight Company"—has big things in mind. If this first satellite proves itself, mission planners envision raising 36 satellites by next year, 5,000 by 2030, and a staggering 50,000 by 2035.

"We're grateful to the FCC for recognizing the importance of testing novel technologies in space," said Ben Nowack, co-founder and CEO of Reflect Orbital, in a statement. "This license is the first step toward rigorously testing our technology's efficacy and the safeguards we have developed." The company envisions multiple uses for sun-reflecting satellites: assisting search and rescue operations, allowing construction projects to operate around the clock, charging solar power stations, increasing crop yield.

But critics cite all manner of risks. Human and animal circadian rhythms could be badly affected if the sun—or a simulacrum of it—never sets. The practice of changing the clocks by a mere hour twice a year is already known to mess with human sleep-wake cycles, after all. Plants could bloom when they shouldn't and die before their time. Orbital mirrors flashing and winking back to Earth could distract airline pilots. Finally, light pollution is already interfering with astronomical observations—a problem made even worse by satellite constellations like SpaceX's 10,000-strong Starlink fleet, one-fifth the number Reflect Orbital plans.

'We want to precisely control where our sunlight is going.'
—**BEN NOWACK**, REFLECT ORBITAL CEO

"Astronomers worry that a constellation of orbital mirrors like Reflect Orbital is planning might compromise the ability to view the night skies," says John Logsdon, professor emeritus at George Washington University's Elliott School of International Affairs.

Nowack disagrees. "From the beginning, we've been designing our satellites to be very precise," he tells TIME. "We want to precisely control where our sunlight is going, and we only want to light up areas that want that sunlight."

THE COMPANY'S INITIAL EFFORTS will be modest. The first satellite, named Earendil-1—after the Old English word for morning star—will shed only as much light as a full moon, across a 6,000-acre area, or about the size of an airport. And that faint illumination will not last long—just five minutes before the satellite, which will be orbiting 400 miles up at 17,500 m.p.h., moves out of range. But if the first launch succeeds, those metrics could change fast. By next year, the 36 satellites that are projected to be aloft will be able to reflect down the equivalent of nighttime street lighting, with multiple mirrors at different spots in orbit cooperating to provide 2.5 hours of light. The 5,000 satellites planned for 2030 will produce the equivalent of daylight for a few minutes at a time, the equivalent of indoor lighting for up to two hours, and all-night street lighting. And the 50,000-strong flock in 2035 will produce an as-yet-unspecified number of hours of daylight illumination and 'round-the-clock indoor-level lighting to customers who request it.

Nowack's claims that the artificial lighting will be precisely limited to specific spots notwithstanding, there is certain to be some spillover to areas outside the intended footprint of light—thanks to our atmosphere.

Air molecules reflect and scatter light beyond an immediate beam, which is why the sky starts brightening at dawn even before the sun climbs above the horizon.

"The atmosphere is dynamic and turbulent, catching, throwing, and bouncing photons like mobile trampolines; that's what gives us effects like stars twinkling at night," says Lindsay DeMarchi, a policy analyst with the Aerospace Corp.'s Center for Space Policy and Strategy. "That's many opportunities for interactions … to spread out or scatter light as photons travel from space to Earth's surface."

The astronomical community is mobilizing against Reflect Orbital. In a letter sent to the FCC on June 2—before the agency's approval of the company's operations—the American Astronomical Society sought to halt the upcoming launch, citing the light-pollution problem, the potential for eye damage if amateur astronomers view the satellite through a telescope, the risk to pilots and drivers who might be distracted or temporarily blinded by the artificial light, and the waste of federal research dollars if the work of government-funded observatories is compromised.

"The proposed satellite would be intentionally reflecting sunlight to Earth and is designed to be as bright as possible, making impacts on astronomical research extremely challenging to mitigate," it argued.

Nowack stands by his insistence that incoming light from his satellites will be finely focused, while also promising that in some cases he'd be willing to refuse service to a potential customer if someone on adjacent land objected. "If there's a case where we want to serve a customer, but there's a [person] nearby that doesn't want the light, generally we're not going to serve that customer," he says.

For better or worse, the space mirror is coming, and possibly soon.

ERCIN ERTURK—ANADOLU/GETTY IMAGES

Health Matters
By Alice Park
SENIOR HEALTH CORRESPONDENT

ALZHEIMER'S DEMENTIA IS MORE prevalent in women than in men, and doctors believe one reason for that has to do with the sudden drop in estrogen after menopause, which can affect the brain. Now, a new study published in *Neurology* seems to support that theory. Researchers analyzed the health records of more than 5,000 older women with hysterectomies who had died and had an autopsy of their brains. **Those who had received estrogen-only hormone therapy at menopause had 35% lower odds of having the hallmarks of Alzheimer's disease,** including amyloid plaques in their brains, compared with women who had not received estrogen.

By including the autopsy findings, the results "lend objectivity to the outcome measures," says Jennifer Bruno of Stanford University, one of the co-authors of the study. "Previous studies used cognitive decline or clinical ratings of dementia, which are not definitive diagnoses of Alzheimer's and therefore not objective."

Earlier studies of hormone therapy and Alzheimer's have led to mixed results, with some suggesting a reduced risk of the neurodegenerative disorder and others finding no benefit or an increased risk. The landmark Women's Health Initiative (WHI) trial, the initial results of which were released in 2002, raised a lot of concern about the safety of hormone therapy; it found that the treatment increased women's risk of breast cancer and dementia, while showing no benefit for reducing the risk of Alzheimer's. But it included women who were postmenopausal and used a different type of hormone therapy, making it hard to generalize to women taking hormones during menopause.

The women in the new study were prescribed estrogen only, and not the combination of estrogen and progesterone that is more commonly used to treat menopausal symptoms. Progesterone protects the uterus, but women who have had a hysterectomy, like those in the study, can use estrogen alone, and researchers believe estrogen has more wide-ranging effects on the body, including in the brain.

'We want to remove the cloud and reopen dialogue.'
—JENNIFER BRUNO, STANFORD

The results do not confirm that estrogen can lower the risk of Alzheimer's, but they do provide a reason to study the connection further. Understanding when the women began taking estrogen, what dose they used, and how long they remained on the hormone therapy, and linking that to any markers for Alzheimer's, could clear up whether the hormone treatment is a viable way to lower women's risk of the memory disorder. "The WHI was a big study that didn't address things properly and put a cloud over prescribing [hormone] therapies," says Bruno. "We want to remove the cloud and reopen dialogue to think about how we can, from a research perspective, further understand the potentially powerful mechanism of [how these hormones] can help with memory and Alzheimer's disease."

WORLD

The miracle of normal life in the new Syria

BY LINA SERGIE ATTAR

I RETURNED TO SYRIA IN THE SUMMER AND FOUND something new: the quiet miracle of ordinary life. I stood on the edge of al-Hatab Square in the old city of Aleppo, transfixed. A group of boys was kicking a soccer ball. One kicked it out into the street, where it bounced off a parked car. They shouted, laughed, and kept playing. It was an ordinary scene, but I couldn't look away.

The historic square had been repaved a few years ago with broad, white slabs of limestone, ringed by a mix of gutted buildings and jarring storefronts—the residue of nearly 14 years of war and the Assad regime's failed attempts at reconstruction.

For years, Syria had been defined by images of war: deep bomb craters, crumbled neighborhoods, sprawling refugee camps. Al-Hatab Square had been a fault line between regime and rebel territory in Aleppo during the particularly brutal years of 2013 to 2016. Many died crossing between the sides. The regime's aerial bombardment and the rebels' underground explosions caused much of the destruction in the Jdeideh quarter, a UNESCO World Heritage Site. I had watched the aftermath of bombings many times—pillars of smoke rising from the rubble, the White Helmets rushing to pull ash-covered bodies from the wreckage, the brokenness that was left behind. Now boys chased soccer balls across the square that was once a battlefield.

I thought of a 2014 video produced by the advocacy group Syria Campaign that imagined this scene in reverse: beginning in the moments after a bomb fell and rewinding until the bomb shot back into the sky, the camera panning down to children playing soccer in a square. Just like this one. In those moments, you could squint and believe that fate had spared Syria the war. Yet, now, all around me there was the evidence. The yellowed stone planters that once held trees were gone. The old silver and gold shops were gone. What had once been dense and crowded was now open and disorienting.

This was my fourth trip to Aleppo since the Assad regime fell in December 2024. Every visit evoked grief and fury, happiness and gratitude, disbelief and mourning. As time passed, these emotions grew quieter, and something new took their place.

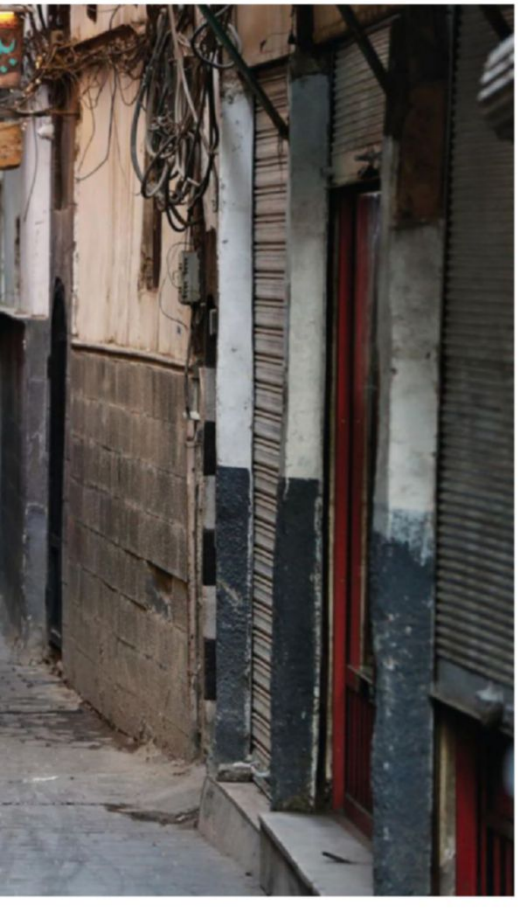
ACROSS THE COUNTRY, people offered wildly different accounts of life 18 months after liberation. People complained about inflation, the fuel crisis, and the cost of electricity. Some called the revolution a failure; others considered the new transitional government, led by President Ahmed al-Sharaa, to be faultless. Somewhere between disappointment and optimism lies the complicated truth.

Still, I found myself wondering: Can we finally live an ordinary life? Every day, I was struck by normality. The narrow streets of old Damascus were filled with crowds of shoppers. Cafés were crowded with Syrians watching World Cup matches through the night.

Children in the Old City of Damascus on July 23

At a government sports complex in Damascus, children roller-skated and practiced karate where Russian and Iranian forces had once occupied the grounds. These programs were offered to the community for free; the sports complex returned to the people.

One evening at the citadel of Aleppo, more than 1,800 people gathered in the amphitheater for a musical performance. The Gardenia Choir, a Syrian women's ensemble, sang tunes that every Syrian child of the 1980s would recognize. A traditional singer from Aleppo performed *qudud halabiyeh* and *muwashahat,* Andalusian poems that have been sung for centuries. The crowd broke into carefree dance, singing along. Even the security guards joined in. As dusk settled, fireworks burst above us. I flinched, by instinct, then relaxed. For years, pops and booms had meant death from the sky. These fleeting



OMAR SANADIKI—AP

moments felt like a release of pain and sorrow held too long.

It is no small thing to feel true joy in Syria. But normality is fragile and unevenly distributed. In Damascus, over the course of a single week in July, two bombings shook the city. The first bomb targeted a café outside the courthouse, killing nine people, most of them lawyers. Days later, two explosions injured 18 people near the Four Seasons Hotel, where President Emmanuel Macron of France was visiting. The bombings were a stark reminder of how easily life can still be shattered.

Soon after, the People's Assembly, Syria's new, transitional parliament, convened its first session since the fall of the Assad regime. Many Syrians remain critical of its delayed and flawed formation: one-third of the assembly was appointed by the President, the rest chosen through regional electoral colleges led by committees assigned by the President. Yet, this parliament was not like the ones I had watched growing up, where disagreement with the Assad regime was lethal. A member of parliament once famously declared that Bashar Assad should rule not just Syria, but the entire universe, even as Assad dropped barrel bombs on his own people. The new ways of the parliament signaled the beginning of something new.

It is no small thing to feel true joy in Syria. But normality is fragile

President Ahmed al-Sharaa entered quietly and addressed lawmakers without the choreographed applause that had defined the Assad years. There was no clapping after each sentence. No clapping at all.

What was changing in Syria was not only what people were able to do, but also what they were able to say. The shroud of silence and fear that enveloped Syria throughout the Assad decades was gone. Syrians were, finally, speaking freely. In Hama, 130 miles north of Damascus, I visited the atelier of one of the city's last traditional weavers. We drank coffee as he told stories of February 1982, when Hafez Assad put the rebellious city under siege and the regime's army killed tens of thousands in a single month. Others in the shop shared stories of entire families killed in their homes. What felt radical was that we were in Hama, openly speaking about the stories of Hama.

In Aleppo, a kind man sitting next to me at dinner casually recounted how he and his wife—both were jailed for opposing Assad during the revolution—had survived. Their survival and our ability to speak openly about the brutal past felt miraculous.

In Hama, the wounds are 44 years old; the city was hollowed out, every family touched by loss. In Aleppo, in the suburbs of Damascus, across Syria, people and neighborhoods heaved under the trauma of the last 14 years. Thousands of families are still searching for answers about their loved ones—more than 100,000 of whom had disappeared under Assad's rule.

SYRIA HAS NEW WOUNDS as well. On the coast and in southern Syria, Alawite and Druze communities mourn the loss of loved ones and homes after deadly clashes between the government and armed militias last year. Those communities are not obstacles to Syria's hopeful future. Securing their safety and right to justice is a test of whether that hope is real. The return of normality for some cannot be an excuse to overlook those for whom the new Syria has brought new suffering.

There are no easy answers on how to move forward after a war that tore a country apart. In Bosnia, people are still identifying and burying their dead 31 years after the Srebrenica massacre. Syria is still at the beginning of this reckoning, and it will take time to build the forms of justice and remembrance that honor its people.

One day, al-Hatab Square will be old again, and its white stones will weather and match the gray ones beside them. Maybe then our present will finally become history. Maybe then we will no longer be shocked by normal. For now, people look up in delight rather than terror at a blaze of colors across the sky. Children play soccer in Aleppo on an old battlefield, laying new layers of joyful memories.

I think that's progress.

Sergie Attar is a Syrian American writer, architect, and founder of Karam Foundation

Seniors get new medical alert device

No contracts, no deposits and no monthly bills ever

FastHelp is the only Medical Alert device that won't break the bank. That's because it comes with no contracts, no deposits and no monthly bills ever – which makes FastHelp a great choice for seniors, students and professionals because it connects to one of the largest nationwide networks everywhere cell service is available for free. You don't need a cell phone or a land line.

And here's the best part. All those who already have an old style monitored medical alert button can immediately eliminate those monthly bills, which is why Universal Physicians is widely advertising this announcement nationwide.

So if you've ever felt a medical alert device was too complicated or expensive, you'll want to get FastHelp, the sleek new medical alert device with no monthly bills.

The medical alert device slugfest was dominated by two main combatants who both offer old style monitored help buttons that come with a hefty bill every month. But now Universal Physicians, the U.S. based heavyweight, just delivered a knockout blow sending the top rated contenders to the mat with the unveiling of FastHelp. It's the sleek new cellular embedded medical alert device that cuts out the middleman by instantly connecting you directly to highly trained 911 operators all across the U.S. There's absolutely nothing to hook-up or install. You don't need a land line and you don't need a cell phone. Everything is done for you. ■

■ **NO MONTHLY BILLS:** "My wife had an old style help button that came with hefty bills every month and she was embarrassed to wear it because it made her look old," said Frank McDonald, Canton, Ohio. "Now, we both have FastHelp™, the sleek new medical alert device that our grandkids say makes us look 'cool' not old," he said. With FastHelp, seniors never have to worry about being alone and the best part is there are no monthly bills ever.

Seniors born before 1964 get big boost

Instantly connects to free unlimited nationwide help with just the push of a button with no contracts, no deposits, and no monthly bills

Seniors born before 1964 get new medical alert device

Nationwide: Demand for new Medical Alert Device soars

The phone lines are ringing off the hook.

That's because for seniors born before 1964, it's a deal too good to pass up.

Starting at precisely 8:30am today the Pre-Store Release begins for the sleek new medical alert device that comes with the exclusive FastHelp™ One-Touch 911 Button that instantly connects you to unlimited nationwide help everywhere with no contracts, no deposits and no monthly bills ever.

"It's not like old style help buttons that make you talk to a call center, only work when you're at home and come with hefty bills every month. FastHelp comes with state-of-the-art cellular embedded technology. That means it works at home or anywhere and everywhere cell service is available whether you're out watering the garden, driving in a car, at church or even hundreds of miles away on a tour or at a casino. You are never alone. With just a single push of the One-Touch E Button you instantly get connected to free unlimited help nationwide with no monthly bills ever," said Jack Lawrence, Executive Director of Product Development for U.S. based Universal Physicians.

"We've never seen anything like it. Consumers absolutely love the sleek new modern design and most of all, today's instant

(Continued on next page)

■ **FLYING OUT THE DOOR:** Trucks are being loaded with the new medical alert devices called FastHelp. They are now being delivered to lucky seniors who call the National Rebate Center Hotline at 1-800-221-2809 DEPT. FSTH214 today. Everyone is calling to get FastHelp, the sleek new medical alert device because it instantly connects you to unlimited nationwide help everywhere cell service is available with no contracts, no deposits and no monthly bills ever.

(Continued from previous page)

rebate practically pays for it and no monthly bills ever," Lawrence said.

FastHelp is the sleek new medical alert device with the best of combinations: a quality, high-tech engineered device that's also an extremely great value because there are no monthly bills ever. ■

The only device that makes you look important, not old

The problem with medical alert devices is, nobody wants to wear them because it makes them look old. Well, that's not the case with FastHelp. That's because it's the first state of the art medical alert device designed to make you look important, not old. Old style monitored help buttons you wear around your neck, or require expensive base station equipment or a landline are the equivalent of a horse and buggy, it's just outdated.

Millions of seniors fall every year and spend hours lying on the floor helpless and all alone with no help.

But seniors who fall and get immediate help are much more likely to avoid getting sent to a nursing home and get to STAY living in their own home independently.

Yet millions of seniors are still risking their safety by not having a medical alert device. That's because seniors just can't afford to pay the monthly bills that come with old style medical alert devices.

That's why seniors born before 1964 are rushing to cash in the whopping $150 instant rebate before the 21 day deadline ends.

So there's no need to wait for FastHelp to hit store shelves later this year because seniors born before 1964 can get it now just by using the $150 instant rebate coupon printed in today's publication before the 21 day deadline ends. If lines are busy keep trying, all calls will be answered. ■

Doctor urges seniors to get new medical alert device

Instantly connects you to free unlimited nationwide help with no contracts, no deposits and no monthly bills ever

Comes with new cellular embedded technology that works at home or anywhere you go so you are never alone

All seniors born before 1964 are getting a $150 rebate and cover just $149 making this deal too good to pass up

Nothing to hook up. You don't need a land line or cell phone. It's ready to use right out of the box

Seniors snap up new medical alert device that comes with no monthly bills

People don't always do what their doctor says, but when seasoned veteran emergency room physician, Dr. Philip B. Howren says every senior should have a medical alert device, you better listen up.

"Seniors are just one fall away from being put in a nursing home," Dr. Howren said. "With a medical alert device, seniors are never alone. So it keeps them living independently in their own home. That's why seniors and their family members are snapping up a sleek new medical alert device that comes with no monthly bills ever," he said.

Many seniors refuse to wear old style help buttons because they make them look old. But even worse, those medical alert systems come with monthly bills.

To solve these problems Universal Physicians, a U.S. company, went to work to develop a new, modern, state-of-the-art medical alert device. It's called "FastHelp™" and it instantly connects you to free unlimited nationwide help everywhere cell service is available with no contracts, no deposits and no monthly bills ever.

"This slick new little device is designed to look incognito to slip in your pocket. Seniors love them, because it actually makes them look important, not old," Dr. Howren said.

FastHelp is expected to hit store shelves later this year. But special promotional giveaways are slated for seniors in select publications. ■

Five Star Customer Reviews

Hurricane Help
"We had two hurricanes recently. I had no electricity for 6 days. I fell, so I pushed the button, and they came right out and picked me up off the floor. I tell many of my friends they need to get FastHelp!" - *Virginia, FL*

LIFESAVER
"When I got my FastHelp I never thought I'd have to use it, but when I fell and broke my hip it saved my life." - *Harold, OH*

Very appreciative of having FastHelp
"I did have an emergency. Help RESPONDED quickly and came in a few minutes." - *Irving, PA*

WE LOVE THE PRODUCT
"We bought it outright with no bills ever." - *Rosemary, NY*

Safe anywhere
"This little FastHelp device is my guardian angel. I'm so glad my daughter-in-law got it for me." - *Pete, FL*

A+ Rating: These are unsolicited consumer feedback from satisfied customers as reported to Universal Physicians.

HOW TO GET IT

BORN BEFORE 1964:
Use the rebate coupon to the right and call this Toll-Free Hotline:
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EXT. FSTH214

BORN AFTER 1964:
You cannot use the rebate coupon to the right and must pay $299 Call:
1-800-221-9773
EXT. ADFH0926

BOTTOM LINE:
You don't need to shop around. We've done all the leg work, this deal is too good to pass up. With the instant FastHelp rebate, it is a real steal at just $149 and shipping. There are no monthly bills ever.

PROS: It's the sleek new medical alert device that comes with the exclusive FastHelp One-Touch 911 Button that instantly connects you to free unlimited nationwide help with no contracts or deposits. It connects you to the vast available network of cellular towers for free and saves seniors a ton of money because there are no monthly bills ever making this deal a must have. Plus it's the only medical alert device that makes seniors look important, not old.

CONS: Consumers can't get FastHelp in stores until later this year. That's why it's so important for seniors born before 1964 to call the National Rebate Center Hotline within the next 21 days. For those who miss that deadline, the sleek little medical alert device will set you back over $300 bucks.

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PLEASE USE CHECK OR MONEY ORDER WITH NO TRANSACTION FEE. ALL OTHER PAYMENT FORMS HAVE A THREE PERCENT TRANSACTION FEE. FASTHELP IS COVERED BY A 30-DAY MONEY BACK GUARANTEE LESS SHIPPING AND A 1 YEAR LIMITED WARRANTY. FASTHELP IS A 4G CELLULAR DEVICE. FASTHELP WILL NOT BE ABLE TO MAKE 911 CALLS WHEN CELLULAR SERVICE IS NOT AVAILABLE SUCH AS IN REMOTE AREAS. FASTHELP USES GPS TRIANGULATIONS TO APPROXIMATE YOUR LOCATION WHEN YOUR DEVICE IS TURNED ON. DR. HOWREN IS A COMPENSATED MEDICAL ADVISOR. OH RESIDENTS ADD 6.5% SALES TAX. UNIVERSAL PHYSICIANS 7747 SUPREME AVE, NORTH CANTON, OH 44720.

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WELCOME, COMRADES

As democratic socialists gain ground, Republicans rejoice

By Nik Popli/Chicago

PHONES RISE ACROSS THE ROOM AS CHRIS RABB STEPS TO the front. It is the second day of the national summit for the Democratic Socialists of America (DSA) in Chicago, and Rabb is fresh off an upset that launched the movement's summer winning streak, defeating party-backed rivals in a Democratic congressional primary outside Philadelphia.

Activists in red shirts move closer to take selfies. Some wear DSA's rose insignia; others have slogans about ICE or Gaza stretched across their chests. "All right, comrades," Rabb says, using the group's preferred form of address with a satisfied grin. He asks whether anyone is actually from his district. A few hands go up. For everyone else, Rabb explains, he intends to be their "bonus rep": another vote and voice for the causes they have spent years trying to push from the margins of Democratic politics to the center of the national debate.

Then Rabb, who at 56 is among the oldest people at the summit, tells the room what he thinks is happening. "As someone who's been around the block a few times, I've never, ever felt this level of electricity," Rabb says. "Do not take this for granted. Do not let people try to gaslight you and tell you you do not have power." The room erupts.

There is plenty feeding the confidence. By the time DSA members gather in Chicago in early August, Republicans are gleefully calling it the "Summer of Socialism." The organization's membership has surged past 120,000. Its candidates and allies have toppled establishment-backed Democrats in congressional primaries from New York to Colorado to Florida. Zohran Mamdani, a longtime DSA member, is running New York City. Socialists have captured or are poised to win mayoralties in Seattle and Washington, D.C., while Nithya Raman is headed for a November runoff in Los Angeles. DSA could enter the next Congress with its largest contingent ever. Abdul El-Sayed won Michigan's Democratic Senate primary with the backing of prominent socialists and a platform that mostly mirrors DSA's, though he doesn't claim the movement's mantle. DSA member Alexandria Ocasio-Cortez is a way-too-early favorite in the next Democratic presidential primary, according to prediction markets. "This feels like seeds that were planted years ago are now bearing fruit," Ashik Siddique, DSA's 38-year-old co-chair, tells me from a sofa tucked beside the meeting rooms where about 600 democratic socialists gathered for the weekend.

For a movement that counted only a few thousand members a decade ago, the transformation is remarkable. Bernie Sanders made democratic socialism legible to millions of Americans; AOC gave it a younger national face; Mamdani demonstrated that a socialist could defeat the Democratic establishment, govern a major city, and then help elect more socialists behind him. But with the midterms looming, the question is now how far the model travels.

Less than two weeks after the summit, the swing state of Wisconsin supplied an answer DSA members did not want: Francesca Hong, a democratic socialist state legislator, narrowly lost the Democratic primary for governor to Milwaukee County executive David Crowley, who had briefly dropped out of the race just weeks before Election Day. The primary's finish was dominated by scrutiny of Hong's since-renounced positions on everything from abolishing the police to canceling Thanksgiving. To establishment Democrats, the outcome suggests DSA's popularity remains limited to areas where Democrats already dominate. "We aren't seeing DSA win in places that are core to winning the majority," former Democratic National Committee chairman Jaime Harrison tells me after Hong's loss. "Their platform is not the top agenda for the folks who live in those communities." A week later, an upset in a red state challenged that thinking, as DSA member Angie Nixon defeated establishment favorite Alex Vindman for the Democratic Senate primary in Florida, despite being outraised more than 16 to 1. Republicans, meanwhile, are eager to paint the entire party with a far-left brush in hopes of stemming the blue wave both sides see forming on the horizon this November.

Yet DSA is ascendant inside a Democratic Party that needs

CLOCKWISE FROM TOP LEFT: ALEXANDRIA OCASIO-CORTEZ, ZOHRAN MAMDANI, MELAT KIROS, DARIALIZA AVILA CHEVALIER, AND CHRIS RABB

PHOTO-ILLUSTRATION BY MARK HARRIS FOR TIME

FROM LEFT, BERNIE SANDERS, ZOHRAN MAMDANI, AND ALEXANDRIA OCASIO-CORTEZ CAMPAIGN ON OCT. 26, 2025

what the movement is producing: volunteers, enthusiasm, disciplined organizing, and a message that connects with the economic anxieties of young voters. A third of Democrats and Democratic-leaning voters now identify as democratic socialists, according to a CNN poll released July 30.

But DSA carries liabilities of its own. Its national platform goes far beyond what successful candidates typically advertise: the group favors abolishing the Senate, eliminating police and prisons, dismantling ICE, closing overseas military bases, and bringing large corporations under public ownership. Republicans are eager to attach those positions to every Democrat in the country. Some Democrats are just as eager to keep their distance. "There are candidates who have won primaries and call themselves communists," says Matt Bennett of the centrist Democratic think tank Third Way, which is preparing a $15 million effort to discredit democratic socialism ahead of 2028. "It's much harder to push back when there's a grain of truth to the charge."

The stakes are about to become more concrete. Along with almost certainly increasing its numbers in Congress, DSA is set to take the reins of the U.S. capital. Critics in both parties will be searching for proof that the winners of these insurgent campaigns are too radical, too idealistic, or simply inept. But to DSA leaders, it's an unprecedented opportunity to show Democrats, and the country, that its agenda for everything from housing costs and labor protections to immigration and foreign policy is what voters are looking for heading into 2028. "We're bringing a meaningfully different style and substance to politics," Siddique says. "We're proving it works, and it's raising everyone's expectations. People look to New York and D.C. or Los Angeles or Minneapolis, and they are increasingly feeling like, wow, we could do what they did here."

'THIS FEELS LIKE SEEDS THAT WERE PLANTED YEARS AGO ARE NOW BEARING FRUIT.'

—ASHIK SIDDIQUE, A DSA CO-CHAIR

AT THE OPENING SESSION in Chicago, Kaitlin Marone asks who in the room was already a member in 2016. A few hands rise. The DSA field organizer moves the date forward to 2020. Nearly half the room raises theirs. Then Marone asks everyone to turn to their comrades and explain why they joined.

The conversations offer clues to DSA's sudden relevance. Members talk about rent and health care, Donald Trump and immigration enforcement, Israel and Gaza, jobs that do not pay enough and homes they cannot afford. Others describe a Democratic Party they no longer believe is capable of addressing the problems shaping their lives.

There is plenty at the summit to remind visitors that this is an avowedly socialist organization. A bookseller in the hallway sells Marxist literature; *The Communist Manifesto* sells out by evening. But many of the grievances drawing people toward DSA no longer sound especially fringe. For Katie Sims, DSA's 28-year-old electoral chair, the revelation came after graduating from Cornell in 2020 and looking at what a job would pay, then what rent and health insurance would cost. "I was like, none of these numbers add up," Sims says. Polls show younger Americans are increasingly pessimistic about reaching the basic milestones available to their parents: homeownership, financial security, raising a family without amassing crushing debt. But, while Mamdani was elected mayor of New York with 51% of the vote, the people DSA has attracted are disproportionately young, white, urban, and college educated—hardly a representative sample of the working class the organization hopes to organize.

Many DSA members first arrive angry about a landlord, a hospital bill, student debt, or a war overseas. By connecting all of those problems to one larger one—the rapid concentration of wealth and power—DSA has given those frustrations a home and a vocabulary, and, increasingly, a way to organize around them. The movement has been adept at identifying places where Democratic voters are moving before the party establishment does, and then organizing the people who are already there.

Israel has provided another opening. Democratic voters, particularly younger ones, have moved sharply against Israel's conduct in Gaza, while many elected Democrats have been slower to follow. DSA, which long called for ending U.S. military aid to Israel, was poised for the shift in public opinion. Sara Almosawi, a 24-year-old daughter of working-class parents from Iraq and Indonesia, joined DSA after Sanders ended his 2020 presidential campaign. "My parents immigrated here to follow the American Dream, and I don't think that really panned out," she says. In college, she helped lead campus protests against the war in Gaza, and she is now national co-chair of the Young Democratic Socialists of America.

That pipeline is beginning to reach elected office. Darializa Avila Chevalier, 32, organized at Columbia before winning a congressional primary this summer with opposition to U.S. support for Israel at the center of her campaign. Other DSA-backed candidates have campaigned on more

MELAT KIROS WON THE DEMOCRATIC NOMINATION FOR COLORADO'S FIRST CONGRESSIONAL DISTRICT IN JUNE

affordable housing, stronger unions, Medicare for All, and tighter restrictions on data centers.

Mamdani has emerged as the movement's most effective translator. His campaign took ideas long associated with DSA, such as free public buses and a freeze on rent, and framed them around an argument almost anyone could understand: life in New York had become too expensive, and government should make it cheaper. By pairing that message with outspoken opposition to U.S. support for Israel, he turned two forces drawing younger voters toward the socialist left into a coherent political identity. "The mood changed right after Mamdani won," Sims says. "The answer to 'could we build it' is yes."

ON THE FIRST NIGHT of the summit, about 50 socialists pack into a dimly lit bar on Chicago's South Side to discuss the next presidential election. Alexandria Ocasio-Cortez is not there, but her name and face appear on signs and pins scattered around the unofficial "DSA for AOC" gathering, where members squeeze into booths and spill onto the patio. After spending the day talking about labor organizing and how to build a lasting movement, the conversation turns to what might be possible in 2028. "We're in the moment of the presidential question," Sims tells the crowd, standing on a chair as comrades cheer. "Doesn't it just make sense now?"

Ocasio-Cortez has not ruled out running for President, and DSA leaders I speak with regard an endorsement from the group as close to inevitable if she does. They say no other working politician has her mix of a national following, massive fundraising network, and talent for pressing socialist ideals. A few other names are floated, including progressive Representative Ro Khanna of California and United Auto Workers president Shawn Fain. (Neither is a socialist.) Jeremy Cohan, a longtime New York DSA organizer, argues that AOC alone could merge Obama-style organizing with Sanders-style politics. "It has never really been tried," he says. "And I think that could change the country."

But Ocasio-Cortez also demonstrates the challenges ahead if the movement aims to mature. The national organization declined to renew its endorsement of her in 2024 after disagreements over Israel, even as its New York chapter continued supporting her. Some members worry that a presidential campaign would pull her toward the Democratic mainstream; others wonder whether demanding ideological fidelity would squander the influence they spent a decade building.

Even as they debate rallying behind her, Ocasio-Cortez acknowledges that many DSA ideas remain broadly toxic. Asked after Hong's loss about her past calls to defund the police and other provocative statements from 2020, Ocasio-Cortez (who made some herself) wryly quoted far-left New York City Council member Chi Ossé: "Woke 1 was crazy."

The dispute reflects a larger question: What exactly does DSA want to do with the power it is accumulating? Even DSA's leaders disagree over how far to go. At a June meeting in St. Louis, its National Political Committee debated for hours whether to add support for abolishing the Senate to the platform. Advocates argue the upper chamber is a fundamentally undemocratic institution because each state, regardless of population, gets two Senators. "This is not the time to put that demand forward," someone argued. The proposal passed by one vote.

The distance between that vision and the campaigns DSA is winning captures the central contradiction of its success. DSA-endorsed candidates have triumphed by running on some of the group's issues while eschewing others. But some members fear focusing too much on electoral success risks reducing DSA to another faction within the Democratic Party. "Electoral politics will not save us," Rabb says in Chicago. "It's only a component of collective liberation. You're never going to hear me saying voting is all that matters." Some have called for the DSA to become its own party rather than running on the Democratic ballot. But DSA leaders say the recent streak of wins has strengthened the pragmatists. "Our members want to keep doing what's working," Siddique says, "which is just running as Democrats."

If its nominees win in November, DSA's tiny congressional presence could become something resembling a bloc. It would still amount to a handful of seats in a 435-member House. But in a chamber governed by narrow margins, a handful can matter. Hakeem Jeffries, who is positioned to become Speaker if the Democrats control the House, could find himself in repeated negotiations with the DSA caucus over close votes on everything from funding for Israel to avoiding a government shutdown.

And then there is 2028. An Ocasio-Cortez campaign could force the organization to face the compromises required to elect a President. Members imagine Ocasio-Cortez building on Mamdani's momentum and Sanders' strong showing in two presidential primaries, giving the movement a national vehicle for turning its ideas into power without compromising its overarching goal: a socialist United States. "We need a fighting unified left," Diana Kingsbury, a 31-year-old community organizer from Santa Rosa, Calif., tells me as light rain begins to fall on the patio of the Chicago bar. "We need to have muscles behind our issues. Otherwise, what are we doing?" ◻

OPENING PAGE SOURCE PHOTOS BY GETTY IMAGES: OCASIO-CORTEZ: TOM WILLIAMS/CQ-ROLL CALL; MAMDANI: CINDY ORD; KIROS: RJ SANGOSTI/THE DENVER POST; AVILA CHEVALIER: MICHAEL NAGLE/BLOOMBERG; RABB: HANNAH BEIER/BLOOMBERG; THESE PAGES, FROM LEFT: VICTOR J. BLUE—BLOOMBERG/GETTY IMAGES; REBECCA SLEZAK—AP

Shinya Yamanaka at Kyoto University's Center for iPS Cell Research and Application on July 17

PHOTOGRAPHS BY TAKUYA MAEDA FOR TIME

LONGEVITY LEADERS

12 TRAILBLAZERS MARKING THE WAY TO A LONGER, HEALTHIER LIFE

Shinya Yamanaka

THE MASTER OF RESETTING CELLS

By Alice Park

DR. SHINYA YAMANAKA CAN NO LONGER ENJOY A beer in peace. After a long day at a recent conference in Montreal, the scientist found a seat at the quiet hotel bar, hoping for a few moments to himself. "But unfortunately, or fortunately, a group of Japanese businessmen came into the bar," he says. And although scientists don't get recognized very often, Yamanaka is a celebrity in Japan.

He doesn't mind. Celebrity, he knows, is a small price to pay for the profound impact that he has on an impressively wide range of scientific fields: developmental biology, regenerative medicine, chronic-disease treatments, and, increasingly, longevity. In 2006, he published a groundbreaking paper that forever changed our understanding about how the human body develops and ages, and how to reverse those processes. In 2012, Yamanaka earned the Nobel Prize in Physiology or Medicine for his work, becoming a hero in his country and inspiring generations of scientists worldwide.

What Yamanaka achieved was long thought to be impossible: turning back the clock of human cells. Certain animals can regenerate cells, tissues, and entire limbs, but human cells seemed to develop only in one irreversible direction. Yamanaka proved that theory wrong, showing first in animals and then in people that any adult cell could become like those found in embryos, capable of developing into any of the body's different types of cells. This discovery catalyzed new ways of treating disease by replacing failing cells. This year, the first treatments based on his discovery 20 years ago became available to some patients.

"I can't believe it's been 20 years already," Yamanaka said in a recent interview at the Center for iPS Cell Research and Application (CiRA) at Kyoto University, which he helped create and directed for 12 years. (He remains there as professor and director emeritus.) "And I would say, so far, so good. The technology has grown, so now we are seeing medical applications of this on a small scale."

We may be at just the start of how Yamanaka's discovery transforms human health. If diseased or injured cells can be replaced, then why not reprogram aging ones to become youthful and vigorous again? It is one of the most actively researched areas in the longevity field. Scientists are finding that it may not even be necessary to reprogram older cells all the way back to an embryonic, blank-slate state; even partially reprogramming them could rejuvenate cells enough to slow some aging processes. The hope is that one day, aging itself may be "treatable" with fresh sets of cells and tissues that work like decades-younger versions of themselves. "It's a very active area [of research]," Yamanaka says. "And I think partial reprogramming is a very powerful potential way to live healthier and longer."

YAMANAKA DIDN'T START his career as a scientist but as a physician. Born in Osaka, where his father made saw parts, he liked to take apart clocks and radios, although he wasn't always successful in putting them back together. He diligently read a monthly science magazine for schoolchildren and performed the included experiment kits. He attended medical school

in Kobe at his father's urging and became an orthopedic surgeon, influenced in part by the overtraining injuries he had endured playing judo and rugby. But Yamanaka soon realized that surgery didn't inspire him. Just as he had been drawn as a boy toward understanding the mechanics of electronics, he was intrigued by basic science and learning how diseases take root.

He earned a Ph.D. in pharmacology at Osaka University and completed a fellowship at the Gladstone Institutes in San Francisco. (TIME cochair and owner Marc Benioff is a past supporter of the Gladstone Foundation.) Yamanaka thrived there, studying a gene that lowered cholesterol in mice and learning how to culture embryonic stem cells in the animals, which served as a foundation for his later discovery.

When his fellowship ended in 1996, Yamanaka returned to Japan. But he missed the scientific community at Gladstone. "I experienced post-America depression," he says. He had trouble getting funding for his basic research projects and became so disillusioned with his career path in Japan that he considered practicing medicine again, admitting, "I nearly died once as a scientist."

But an opportunity to run his own lab at Japan's Nara Institute of Science and Technology provided one last shot at the scientific career he yearned for. "I wanted to try something very big, very risky, but that will have a huge impact on medicine," he says. "So that's how I started this project"—his modest way of describing the work that would earn a Nobel Prize.

AT THE TIME, other stem-cell scientists were focused on trying to coax embryonic stem cells to become the mature cells the body needs to treat disease—islet cells in the pancreas, for instance, which produce insulin. "I thought I wouldn't be competitive enough if I just did a similar approach," he says. So Yamanaka zagged. Rather than starting with embryonic cells, he started with mature, specialized cells and tried to turn them back to an embryo-like state.

There was no guarantee this was even possible with human cells, but Yamanaka pinned his career on two studies that convinced him it might be. First, British biologist John Gurdon, with whom Yamanaka would share the Nobel, had shown in the 1960s that a cell from an already-developed tadpole still contained the genetic instructions it needed to become a new frog. Then, in 1996, Scottish embryologist Ian Wilmut took a mature cell from a female sheep and created an exact clone of the ewe. "Because of those two studies, I thought at least in theory, we could revert somatic [adult] cells back into the embryonic state," Yamanaka says. "So I was not just a crazy scientist."

He started by trying to identify which genes were responsible for driving the development of embryonic cells. Then, he used engineered viruses that could infect cells (but no longer cause disease) to introduce these genes to adult cells; these, in turn, would instruct the cell to make the proteins that help the mature cells act more like embryonic ones. Yamanaka and his team winnowed 24 possible genes down to four.

Even Yamanaka was surprised that the process worked. When his colleague first showed him the older mouse cells that seemed to have reverted back to young versions of themselves, he refused to believe it. "I thought it was a mistake," he says. "I asked my colleague to repeat the experiment again and again and again, but it always worked," even with different types of mature mouse and human cells. "So we gradually became confident in the results."

He called the cells induced pluripotent stem cells (iPS cells for short), and researchers raced to capitalize on the potential of these "Yamanaka factors" to generate replacements for diseased cells in conditions like diabetes and Parkinson's disease. "iPS cells impact all sorts of areas, from the study of disease to the study of development," says Dieter Egli, associate professor of developmental cell biology at Columbia University and a leading stem-cell scientist. "This fundamental insight of the reversion of time and cell specialization is absolutely a miracle."

To capitalize on the discovery, the Japanese government invested heavily in CiRA—where the scientists' teams still call him Yamanaka-sensei—to refine the production of iPS cells. One of the key genes involved in the process can also promote tumors; Yamanaka found a way to omit it while reprogramming the cells, albeit less efficiently, and has since developed ways to manufacture high-quality iPS cells for use in human studies. He also initiated important discussions with the government on the ethical use of these cells.

'OUR FIRST PRIORITY IS TO EXTEND HEALTHY LONGEVITY, NOT JUST LONGEVITY ITSELF.'
—SHINYA YAMANAKA

"When we succeeded in making human iPS cells, I was very happy for just one week," Yamanaka says. The process bypassed the ethical challenges of needing embryos as a stem-cell source. "But I realized, 'Wow, maybe I overcame one ethical hurdle, but now I generated another, even higher hurdle.'"

Because any adult cell can be turned into any other type of cell in the human body, including egg and sperm, he quickly realized the potential for abuse. Eggs, sperm, and embryos that could theoretically be generated by iPS cells would cause permanent changes not just in individuals but to

Yamanaka helped create CiRA and served as its director for 12 years

future generations, forever altering the human gene pool. He asked the Japanese government to help draft guidelines to navigate when and how using iPS cells to create such germ-line cells would be ethically justified, and invited ethicists to join the team at CiRA. "It's an ongoing, very, very important issue," he says. "The speed of scientific progress is becoming faster and faster, so we can't just postpone these discussions. We have to talk [about them] and start deciding now."

While egg and sperm from iPS cells have not been approved for human studies, other iPS cells are already being used in people. In March 2026, the Japanese government issued the first conditional approvals of two treatments based on iPS cells: one for Parkinson's and another for heart failure. If ongoing trials of these treatments continue to be successful, they could pave the way for exploring not just how dysfunctional or injured cells can be rejuvenated, but whether older ones can be reprogrammed to regain their youthful function. "Our first priority is to extend healthy longevity, not just longevity itself," he says, "so that people can live through their 80s and 90s without the need of aid from other people."

One of the first efforts to test iPS cell-based rejuvenation began in May in the U.S., when the first patient was treated with iPS cells to reprogram aging eye cells that were causing glaucoma and optic neuropathy. These retinal cells can't be regenerated by the body, so if they start to deteriorate over time, people can lose their vision. The hope is that by injecting a treatment using three of the Yamanaka factors, these older retinal cells can become rejuvenated to function normally again, and potentially rescue people from blindness.

WHILE EFFORTS LIKE THIS are important steps toward improving human health, they also open the door to extending human life. Reprogramming is becoming a mainstay of numerous longevity strategies, including one from a team at the University of Tokyo, which is using iPS cells to generate exosomes, small sacs that contain various components that cells need to survive and thrive, and injecting them into mice and humans. Research is early, but the therapy seems to reduce inflammation, a driver of aging in cells.

Yamanaka is cautiously optimistic about the expansion of interest in iPS cells in the field of longevity. "I think the potential is very high, but the application of partial reprogramming may be a bit more challenging," he says. Because they are relatively new, it isn't clear yet whether reprogrammed cells are exactly equivalent in function and safety to normally developed adult cells, so Yamanaka continues to study the process in depth. He splits his time between CiRA and his lab at the Gladstone Institutes in San Francisco, where—again taking a contrarian approach—his latest research explores when reprogramming may not work, and how certain cells might protect themselves from being reverted to a younger state. Understanding the limitations of the method he discovered could also help solve more mysteries about how the body ages.

While Yamanaka says the iPS field has made remarkable progress in the past 20 years, when it comes to the technology's ultimate potential, "we are at the halfway point," he says, drawing an analogy to marathons, which he began running in his 40s. "We are happy to reach the halfway point, but we still have to run the second half. And we all know that the remaining half is tougher."

In another 20 years, Yamanaka hopes to see more human approvals for iPS cell-based therapies. But just as few people could have predicted that it would be possible to reprogram mature cells back to a younger state, he also hopes that by then, there may be new discoveries that can't be imagined today. "My hope is that in 20 years, we have other technologies so that iPS cells aren't required anymore," he says. "I hope the younger generation will come up with something even better." □

Jamie Justice

THE GERONTOLOGY JUDGE

As executive director of the XPRIZE Healthspan competition, Jamie Justice oversees a professional science fair for cutting-edge longevity science around the world. With her team of more than a dozen judges, Justice, a gerontology researcher, has spent the past several years soliciting and then reviewing applications from the world's best scientific minds, looking for the most exciting ideas on how to live longer, better. In July, the judges narrowed the submissions to 10 teams, then gave them each $1 million to start advanced testing of their ideas over the next four years.

The teams are challenged to come up with a strategy to reduce the impact of aging on three key areas in humans—muscle, brain, and immune function—by the equivalent of at least 10 years.

The 10 finalists, announced in August, include teams from China, Japan, South Korea, and the U.S., exploring everything from repurposed drugs to novel compounds and stem-cell-derived approaches. "It wasn't a popularity contest," says Justice, and the ideas weren't necessarily traditional or expected. Teams from Japan focused on an age-addressing strategy popular in Asia now: supplements that use exosomes, tiny vesicles that deliver enzymes, proteins, lipids, and other compounds that are important for keeping cells healthy. One team earned the funding prize by providing exosomes from parsley that, in a small group of people, seem to improve how cells communicate and lower signs of aging, including inflammation. "We have a lot of upsets, and so many people are angry because some of the safe stuff and the big names didn't make it," Justice says.

Now, the teams will continue to test and refine their strategies, and compete for the $81 million grand prize, which will be awarded in 2030.

—Alice Park

Nir Barzilai

BRANDING THE FIELD

Geneticist Nir Barzilai's work has helped drive a new approach to medicine. Instead of treating individual diseases, his research has supported the idea that targeting the biology of aging with drugs and lifestyle interventions could more broadly extend health span, the healthy years of a person's life.

"Right now, our maximum lifespan is 115, and about half of us die at around the age of 80," Barzilai says. "I don't know if we'll ever break the 115-year mark, but we should get decades more of life and good health."

Over decades studying centenarians and "superagers," people who live past the age of 95 in good health, and the biological and genetic factors that help them defy disease and delay aging, Barzilai and his collaborators have found several factors associated with healthy longevity, including variations in genes linked to cholesterol and lipid metabolism. Researchers are now exploring whether they can create drugs that mimic these so-called longevity genes, and Barzilai is co-leading an ambitious project, the SuperAgers Initiative, in search of more genes that help slow aging and disease. The project aims to recruit 10,000 people over the age of 95 and their family members. "People don't get over the age of 100 without some genetic explanation, so we're trying to understand the biology behind that," he says. "That knowledge will help us develop more drugs."

Barzilai has played an instrumental role in pushing the idea that existing drugs could be repurposed as longevity-boosting treatments. He designed a clinical trial testing whether metformin, a diabetes drug, could delay the onset and progression of age-related diseases such as cardiovascular disease and cancer. That trial has yet to launch, but Barzilai says the study design could be adapted by other groups looking to test whether drugs like GLP-1 medications could be used not just to treat a single disease but also to prevent multiple age-related conditions.

Barzilai is also helping lead a project aimed at finding reliable biomarkers for aging that could be used to test whether drugs and lifestyle improvements, such as exercise and sleep, actually slow someone's aging.

This all has massive implications for how we could live and age, and Barzilai is eager to persuade the world just how transformative longevity science could be. "There's a lot of junk out there," he says—and that junk sometimes obscures what he sees as truly revolutionary research. He even eschews the term that often accompanies his title; *longevity* has been sullied by too much hype and misinformation, he says. Instead, he favors "geroscience," the study of how biological processes of aging contribute to disease.

For Barzilai, changing the language is part of transforming the field. He heads the Albert Einstein College of Medicine's Institute of Geroscience in New York and is president of the Academy of Geroscience, a coalition of scientists aimed at advancing research on the biology of aging. Both organizations recently changed their names under his leadership. "We need to distinguish ourselves from all the noise," Barzilai says. "It's become important to have the word *science* in there."

—Dominique Mosbergen

JUSTICE: AMANDA VILLAROSA FOR TIME; BARZILAI, ALON: COURTESY OF SUBJECT; WYSS-CORAY: OLA HOPPER—STANFORD UNIVERSITY; DUNCAN: FEINBERG SCHOOL OF MEDICINE; SINCLAIR: TONY LUONG FOR TIME

Tony Wyss-Coray

CRACKING THE BODY CLOCK

Tony Wyss-Coray, a professor of neurology at Stanford University, has pioneered ways to measure a person's so-called biological age, which scientists say more accurately reflects how a body is aging than does chronological age. "These tests could tell you how your organs are holding up," Wyss-Coray says.

The "older" a person's organs are overall, his research has found, the higher their risk of death. —*D.M.*

Francesca Duncan

A NEW LONGEVITY ORGAN

A reproductive biologist at Northwestern University, Francesca Duncan is uncovering just how important the ovaries are to healthy longevity for women. "Pretty much every organ system you can think of is touched by the ovaries," she says. One of her major findings is that ovaries become stiffer and more inflamed over time—a discovery that has made them a new target for longevity work. "I think this is a big frontier," she says. —*D.M.*

Uri Alon

GENETIC POTENTIAL

In January 2026, Uri Alon, director of the Sagol Institute for Longevity Research at the Weizmann Institute of Science in Israel, and his colleagues made headlines finding that about 55% of a person's lifespan comes down to their genes: far more than previously thought.

Exercise, good diet, and sleep still matter. "You need that in order for our genes to express themselves in their optimal way," Alon says. —*Veronique Greenwood*

David Sinclair

RE-ENVISIONING AGING

It looked like any other injection an eye doctor might administer. But contained inside was something that no patient had ever received: a cocktail of ingredients designed to change how genes behave in specific eye cells and restore them to a more youthful state. In early June 2026, that first patient, who had a form of glaucoma, received this groundbreaking cellular-rejuvenation therapy with the ambitious goal of reversing an age-related disease.

"For all of us present, including the patient, it was an emotional moment," says geneticist David Sinclair, who developed the therapy in his lab at Harvard Medical School. "For the patient, it was emotional because of the potential of getting their eyesight back. For me, it was 30 years of hard work by my teams. We hoped to reach this point one day, and it was happening."

The pioneering trial—conducted by Life Biosciences, a company Sinclair co-founded—is the first test of the idea that, at least in certain cells, aging may not be inevitable, and can be reversed by restoring important information that older cells lose over time. The study will include up to 18 people: 12 with a form of glaucoma, and six with a condition called nonarteritic anterior ischemic optic neuropathy (NAION, for short), both of which can lead to blindness. The two conditions are triggered when pressure causes cells in the inner part of the retina to start to die, and, because they can't be replaced, patients lose their vision. But Sinclair thinks these cells can be coaxed back from the brink.

Sinclair's "information theory of aging" holds that cells age when they become overwhelmed by the exposures of daily life. Building off of Shinya Yamanaka's seminal discovery that exposing cells to four genes can reverse the clock on those cells, turning them back to a youthful state, Sinclair tweaked the formula using only three of the genes so that cells could regain their original instruction guide and be rejuvenated.

Sinclair believes that this process can reverse age-related diseases that affect tissues in the eye, liver, brain, skin, and more. In lab tests, using both animal models and human cells in a dish, "we haven't found a tissue or organ where [this epigenetic age-restoring therapy] wasn't beneficial. So I think if this first trial goes well, then it will open up bigger opportunities to tackle other diseases," he says.

The longevity field is long on innovative ideas but short on proof that any of these approaches actually work, and Sinclair has been criticized for making bold claims and launching companies that have not yet produced durable results. The scientific community, understandably, is closely watching for the results of this trial. Sinclair is optimistic that the study will catalyze a new way of restoring cells, starting with those in the eye. "The mere fact that there is at least one person who has this in their bodies right now is something that will be seen as an important milestone," he says. —*A.P.*

Myechia Minter-Jordan

POWER IN NUMBERS

Since becoming AARP's CEO in November 2024, Dr. Myechia Minter-Jordan has begun shifting the conversation about what life looks like after age 50. "We've always advocated for older individuals, but my sense is that it has been a 'people over there' kind of conversation," she says. "Now, it's all of us."

The current trendiness of longevity has helped, she says. People are thinking more about what they can do to extend their lives, and that's given AARP an opening to ask the follow-up question people too often forget: What should their finances and health care look like as they age?

One of Minter-Jordan's priorities is to get out the message that Social Security and Medicare are instrumental for health and financial resiliency later in life. In 2025, the 90th anniversary of the Social Security Act, Minter-Jordan traveled the country highlighting the importance of both programs and telling the stories of members who depend on them. More than 3 million AARP activists contacted their congressional leaders to remind them that Social Security and Medicare aren't handouts, she says, but benefits that people have earned.

As a physician, Minter-Jordan knows that living longer isn't always as good as it sounds. The gap between people's "health span"—how long they're healthy—and lifespan is about 12.5 years, she says. (It's typically worse for women.) But AARP wants to help to close that gap. AgeTech Collaborative, AARP's startup accelerator, connects hundreds of companies that are designing products to help people age better with investors and entrepreneurs who can help bring their products to market. Its Community Challenge grants invest in small local projects nationwide that make age-oriented design changes to public places. Under Minter-Jordan, AARP has doubled the amount of money it grants to fund practical improvements that benefit older Americans, like more benches in community parks.

Minter-Jordan, who is in her 50s, says that people are sometimes surprised to see someone relatively young as the face of an organization representing an aging America. But that's kind of the point, she says. Beyond middle age, people are still contributing a great deal to American society and the economy. There are now 57 million Americans over age 50 in the workforce, and Minter-Jordan wants the rest of the country to realize that their experience makes them valuable.

"This is a longevity revolution," she says. "The businesses, employers, and policymakers who take older Americans seriously and design for their actual lives are the ones that are going to be positioned to grow and lead." —*Alana Semuels*

Juan Carlos Izpisua Belmonte

RENEWING OLD CELLS

Juan Carlos Izpisua Belmonte believes that disease and aging happen because cells start to lose their identity, becoming less efficient at their jobs—and that it may be reversible. He co-founded Altos Labs, a biotech company, to test his idea.

In 2025, he used Shinya Yamanaka's discovery of four genes that can rewind the clock—turning adult cells to a younger state—in a treatment for mice. It partially reprogrammed and rejuvenated cells in older animals' organs; skin cells, for example, regained the ability to better heal wounds. It also worked in human cells in the lab. The next step is to try transplanting such "younger" organs in older animals. "If we can tackle the problem of cell identity, we could not just focus on aging itself but on many, many diseases," Izpisua Belmonte says. —*Alice Park*

Andrea Maier

BREAKING NEW GROUND

In 2025, Andrea Maier helped open a new clinical-trial center at National University of Singapore called the Academy for Healthy Longevity, which will enable teams to run multiple long-term trials assessing the effects of supplements, exercise routines, and other lifestyle interventions for health span. Her body of research investigating whether various drugs and interventions that make mice live better longer translate into people has brought her to the forefront of the field.

Maier hopes the state-of-the-art center will help generate the evidence needed to give longevity medicine a solid scientific base, and train a new generation of doctors. She notes the center "is now too small again, because we have too many trials—which is great."

—*Veronique Greenwood*

Gabrielle Lyon

ELEVATING EXERCISE

For decades, muscle has been treated as something to sculpt, strengthen, or show off. Dr. Gabrielle Lyon wants people to think of it differently: as one of the body's most important organs—and a strong predictor of how well we'll age.

In 2015, as a fellow in nutritional sciences and geriatrics at Washington University in St. Louis, Lyon cared for people with dementia and studied the relationship between body composition and brain function. She became convinced that medicine had spent decades asking the wrong question. Instead of focusing primarily on body fat, she came to believe, doctors and researchers should pay closer attention to the health of people's muscles.

Lyon's 2023 book *Forever Strong: A New, Science-Based Strategy for Aging Well* argues that muscle is "the organ of longevity"—not a vanity project but a metabolic powerhouse. When you contract it, she says, muscle secretes peptide hormones called myokines that communicate with the brain, liver, and pancreas. "It creates a whole-body cross talk," she says. "It's amazing."

Exercise is one of the most evidence-backed ways to live longer. Strong muscles help older adults maintain their balance, mobility, and independence—and because muscle weakness increases the risk of falls and disability, preserving strength can help people remain healthier longer. She also argues that muscle quality can reveal health risks that body-fat percentage misses. One indicator is how much fat has infiltrated the muscle itself, marbling it like a steak—a condition known as myosteatosis. Studies have linked myosteatosis to insulin resistance, including independently of total and visceral body fat, as well as impaired mobility and increased mortality risk. Total body-fat percentage, in other words, does not necessarily capture what is happening inside a person's muscles.

Lyon has written two best-selling books, appears frequently on media platforms, founded National Muscle Health Month, hosts *The Dr. Gabrielle Lyon Show* podcast, has more than 1 million followers on Instagram, and continues to publish peer-reviewed research. "I'm not an influencer," she says. "I'm a practicing physician." But by elevating muscle health from a fitness goal to a cornerstone of healthy aging, Lyon has helped reshape the longevity conversation.

Lyon's prescription: Do resistance training at least twice a week, and eat enough protein. You'll need more as you age, she says, and protein delivers essential amino acids your body can't make on its own. The good news, she says, is that sarcopenia—age-related muscle loss—is reversible, and the payoff isn't reserved for the young. Lyon points to data showing that even 80- and 90-year-olds can build strength. "There's only one way to do it wrong," she says, "and that's to not do it."

Her goal is to help put people on a practical road map for building strength and living healthier longer. To do that, she hopes to get people to care more about muscle than fat. "It's not about what we have to lose," Lyon says. "What do we have to gain?" —*Angela Haupt*

Robert Waldinger

HEALTH IN HUMANITY

Dr. Robert Waldinger didn't believe it at first. The idea that loneliness could break down the body—that the quality of your relationships might help decide whether you get coronary artery disease, arthritis, or Type 2 diabetes—struck the psychiatrist as far-fetched. "How could that be a thing?" he recalls thinking back in medical school.

It's a question he's now spent decades trying to answer. In 2003, Waldinger became director of the Harvard Study of Adult Development, the longest-running study of human lifespan. It began in 1938 with 724 young men: 268 sophomores at Harvard and 456 teenagers from Boston's poorest neighborhoods. For nearly 90 years, researchers have followed participants through questionnaires, interviews, medical records, and increasingly sophisticated health assessments, including blood tests, genetic and gene-expression analyses, stress biomarkers, and MRI brain scans, to understand how relationships get "into our bodies" and shape the way we age. The study has expanded beyond the original participants to include their spouses and more than 1,300 of their children, transforming it into a two-generation study of 724 families. Their children—now aging baby boomers—are helping researchers understand what gets passed from one generation to the next.

One result keeps resurfacing: People who stay connected to others seem to stay healthier too. Socially isolated people, the data revealed, "get the diseases of aging much sooner," and the likeliest culprit is stress. "Being lonely is a stressor," Waldinger says. Other studies have since confirmed his findings, that the pull toward others is bone-deep. It isn't about how many friends you have; an introvert, for example, may need only a couple. But the takeaway from nearly a century of data and thousands of lives might be the ultimate longevity hack. "Invest in other people," Waldinger says. "Other people help you get through the hard times." —*A.H.*

POWER

How Aryna Sabalenka became the most dominant force in women's tennis

By Sean Gregory/Pinecrest, Fla.

ARYNA SABALENKA DID NOT GET COMpletely drunk.

In July, Sabalenka, the world's top-ranked women's tennis player, lost to Naomi Osaka in their round-of-16 match at Wimbledon. It was her first straight-set defeat at a major in nearly a half-dozen years. What's more, it was her second surprise exit in a row from a Grand Slam tournament. So when she took her place before the assembled media at her postmatch press conference, she did not mince words: "I just want to go get completely drunk," she said, "forget about tennis and try to get better, in better shape."

The comment created worldwide headlines, but now she is ready to set the record straight. "I had a couple of drinks," Sabalenka tells TIME some three weeks after the loss. "I danced a little bit, I forgot about tennis for a couple days. But I never get drunk."

After the Wimbledon disappointment, Sabalenka, 28, took a vacation to Greece, posting her leisure activities on social media as she went. She has more followers across TikTok and Instagram, 7.2 million, than any other active women's player (aside from Serena Williams, who returned to Wimbledon at 44 but injured her knee in a first-round loss) as well as a YouTube series chronicling her life called *Aryna's Arena.* The second highest paid female athlete in the world in 2025—she took in about $30 million, according to Sportico, trailing only Coco Gauff's $31 million, and has deals with blue-chip brands like Nike, Gucci, Stella Artois, and

SABALENKA ENDURES THE SOUTH FLORIDA HEAT IN JULY

PHOTOGRAPHS BY MOLLY CRANNA FOR TIME

Emirates—Sabalenka danced, sipped espresso martinis, lounged poolside, and dived off a boat into the Aegean Sea.

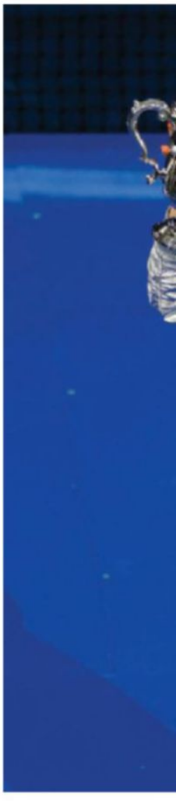
Some observers, however, were unimpressed. "More tennis less TikTok," wrote one guy. What these haters don't understand, Sabalenka explains, is that she finds posting therapeutic. "You just forget about everything," she says. "You try to dance, try to move your body, so for just that 30, 40 minutes, sometimes an hour, it's just being focused on one thing and not thinking about other stuff. It's just like a small getaway." Sabalenka rolls her eyes at the snide commentary. "Sometimes I go to their profile and see how perfect they are," she says. "And I'm like, 'Dude, just figure out your own sh-t before you jump into others' lives.'"

We're speaking in a well-appointed South Florida home, replete with a tennis court and pool, not far from where she lives. And despite her detractors, Sabalenka seems relaxed and happy. Unlike at Wimbledon, where her pleas to allow dogs on the grounds went unheeded, she has her Cavalier King Charles Spaniel puppy Ash—named after Arthur Ashe Stadium, where she has won the past two U.S. Open titles—nearby. Ash is a good boy, disrupting neither the photo shoot nor our chat.

Brash, goofy, hard-hitting, unfiltered, aggressive, unafraid to lose her temper at her coach and support staff in front of a global audience—this package makes Sabalenka arguably the most compelling player in tennis. "I want to be remembered as a fighter on court, but so cool and fun off court," she says. "I think it's really important for kids to understand that you have to balance. You don't have to be fully, fully focused on your dreams. One day they can destroy you."

With the U.S. Open main draw beginning on Aug. 30, Sabalenka—who's had to cope with personal losses and a contentious geopolitical climate on her journey to the top—remains in prime position to fulfill her wildest aspirations. She's already one of just 10 women's players in history to hold the top ranking for at least 100 weeks, joining the likes of Serena Williams, Steffi Graf, Martina Navratilova, and Chris Evert. "To see my name somewhere in there, it's pretty sick," she says.

SERVING IN THE U.S. OPEN FINAL IN NEW YORK CITY IN SEPTEMBER 2024



AFTER WINNING HER SECOND STRAIGHT U.S. OPEN TITLE IN SEPTEMBER 2025

She's underperformed, however, at this year's Grand Slams. At the Australian Open, Sabalenka reached the final on hard court, her best surface, but Kazakhstan's Elena Rybakina mounted a comeback. With a cadre of top-ranked players knocked out of the French Open in June, Sabalenka had what looked like a clear path to her first Roland Garros title. But in the quarterfinals, she dropped 10 straight games to Diana Shnaider of Russia. Then Osaka bounced her out of Wimbledon.

If Sabalenka, a nearly 6-ft.-tall four-time major champion with one of the fastest forehands in the game, doesn't lift the trophy in New York City, it would be the first year she'd fail to win a Slam since 2022. A third straight U.S. Open victory, on the other hand, would make her nearly immortal. She'd become the first player since Williams a dozen years ago to three-peat there, and just the third woman in the modern era to do it, with Evert being the other.

"It's history," says Sabalenka. "You get hungrier as you go."

'I WANT TO BE REMEMBERED AS A FIGHTER ON COURT, BUT SO COOL AND FUN OFF COURT.'

SABALENKA'S INDEPENDENT STREAK has been evident since she was a child in Belarus. As the girls training in Minsk strove to follow in the footsteps of Victoria Azarenka, the country's only singles player to claim the top spot before Sabalenka, instructors demanded strict adherence to the tactics they were teaching. But if Sabalenka had a better way, she said so. "Aryna was the one who always argued with the coaches," says Anton Dubrov, Sabalenka's current coach, who met her when she was 14. "She was showing who she is."

Sabalenka's father Sergey, a former hockey player whose own athletic career was derailed by an auto accident when he was 19, introduced his rambunctious daughter to tennis when she was 6. And while Sabalenka now embraces social media for both business and pleasure, she didn't have much use for it as a kid; practice, school, and playing games like hide-and-seek into her teenage years occupied her time. "What's the point of taking pictures of yourself and posting and sharing?" she says. "Who cares? That was my first thought."

EXPRESSING FRUSTRATION AFTER LOSING A POINT IN THE INDIAN WELLS FINALS IN MARCH

FROM LEFT: SUSAN MULLANE—ISI PHOTOS/GETTY IMAGES; FOTO OLIMPIK—NURPHOTO/GETTY IMAGES; JOHN CORDES—ICON SPORTSWIRE/GETTY IMAGES

Growing up mostly off the grid, in a country with a population not much bigger than Dallas–Fort Worth's, benefited Sabalenka. "I think that not having Instagram really helped me to focus on myself and not really get upset or depressed about not living the best life," she says. She was blissfully ignorant of the tennis industrial complex and is thankful that she never trained at a pressure-cooker Florida academy, where many teens burn out. "It's so much tougher here," she says.

Still, she would be tested again and again in the early years of her career. In 2018, when Sabalenka was 20, she was named WTA Newcomer of the Year: she won two tournaments and beat top-10 opponents eight times. The next season, Sergey died unexpectedly of meningitis at 43. "We just started to get closer, like friends," she says. "He was easy to talk to. He would be the person that would really help me to get back on track whenever things wouldn't work well." They had set a goal for Sabalenka to win two Grand Slam titles by the time she turned 25. That pact backfired after Sergey's death, as Sabalenka pushed herself too hard to honor her father through Slam titles. Her mother Yulia intervened. "She said, 'What are you talking about?'" says Sabalenka. "'He was proud of every match you would win. Just you being able to compete on this level was huge for him.' It really helped me to loosen up."

But Sabalenka soon faced another problem: Russia's invasion of Ukraine from Belarusian soil in February 2022 caused a rupture on the tour. "Some of the Ukrainian coaches, they would say really, really, really mean stuff to me," Sabalenka says. "I don't want to repeat it. It was so terrible. So it got to my head, and I would be hysterically crying." Wimbledon banned Russian and Belarusian players that summer; players from those countries still don't compete under their flags, and most Ukrainian players still refuse to shake their hands.

Sabalenka wants peace and does not support the war. "No one does," she says. "It's so obvious." Does she support Belarus' authoritarian President, Alexander Lukashenko, an ally of Russian President Vladimir Putin? "I don't want to talk about it," she replies.

She was already struggling with her serve before the conflict. The additional stress didn't help. "My heart rate would go so high up, and I wouldn't be able to breathe normally," says Sabalenka. "I completely lost it. I had to play tennis without a serve." She finished with 428 double faults in 2022, 151 more than any other player on tour.

"In my 50 years, I've seen a handful of really troubling yips on the serve," says former player and veteran tennis analyst Pam Shriver, who reached the U.S. Open final in 1978. "Sabalenka's was the worst. I was shaking my head, thinking, 'Oh my God. Is this great talent ever going to recover?'"

Indeed, Sabalenka came close to quitting. "I felt like, OK, the whole world is telling me, 'That's it,'" she says. But before that year's Cincinnati Open, her team called in a biomechanics expert. Within a week, Sabalenka had smoothed her motion, stabilized her balance, and in essence rebuilt her delivery. She reached the U.S. Open semis, falling to the eventual champ, Iga Swiatek. Then before the 2023 season, she made an unusual move in today's athletic era, where mental health is paramount. She dropped her sports psychologist. "I feel like at some point I started to overthink about psychology," she says. "I would rely a lot on that and forget about focusing on my tennis. So I decided to step away from it to learn on my own how to control myself. No one else understands myself better than me."

THIS SELF-KNOWLEDGE would prove critical as Sabalenka navigated the highs and lows of the next few years under an ever brighter spotlight. She won her first major, the 2023 Australian Open, that January. "I put my family name in history," she says. "I wasn't wasting my time and energy. I was doing the thing that was right for me. I am where I'm meant to be." She reached No. 1 for the first time later that year and repeated her Australian Open victory in 2024. Sabalenka had now won two Grand Slams. At 25. Pretty much as she and Sergey dreamed. "This is something big," she says. "It gave me so much belief inside me. I became way, way stronger."

She'd need to call on that resilience that March when her ex-boyfriend, former NHL player Konstantin Koltsov, died of an apparent suicide. Sabalenka was preparing for the Miami Open at the time, and Dubrov and others suggested she take some time off. But Sabalenka still wanted to play. She lost in the third round, and some on social media knocked her for returning right

away. "Tennis really saved me from depression," she says. "I was just trying to focus on training, just so I spend less time with myself in my thoughts. I would cry in practice a lot. It was a very tough moment in my life."

She began a relationship with Brazilian entrepreneur Georgios Frangulis that year. "He was really supportive and really helpful for the team," says Dubrov. "He was always asking us, 'What do you think, guys? Should I be at practice? Should I be at the matches?' Sometimes relationships can be not helpful. But he was asking, 'What do you think would be the best for her?'"

Frangulis, founder and CEO of the açaí chain Oakberry, proposed in March 2026, just a few months after Sabalenka called him out in front of a packed Brisbane International arena: "Thank you to my boyfriend. Hopefully soon I'll call you something else, right?" Ideally, she says, they'll get married in Greece in September 2027. She'd love to start a family at 32, then return to the tour for a few seasons before having a second child. But she brings up a version of an old Yiddish adage: Man plans, God laughs. "That's what ideally I want," she says. "But whatever life's going to bring, I'm ready for it."

SABALENKA WOULD BE ONLY THE THIRD WOMAN IN THE MODERN ERA TO THREE-PEAT AT THE U.S. OPEN

Sabalenka won her first U.S. Open in September 2024. She reached her first French Open final the following June, before crashing out against Gauff; Sabalenka committed 70 unforced errors and shouted at her box, a frequent habit when things go south. "I used to have hair, completely," notes Dubrov.

Sometimes, a racket smash or a tantrum directed at her team can reset her game. But her rage didn't help against Gauff. And her response to the loss ignited controversy. "She won the match not because she played incredible, just because I made all of those mistakes," Sabalenka told reporters. The ensuing firestorm taught her a lesson. "Just shut up and wait a little bit longer before you go to the press-conference room," she says. "Speak with your team before you actually decide to say something. Every time I lose a big match, there's a room full of people waiting for the moment. No. Not gonna happen."

'NO ONE ELSE UNDERSTANDS MYSELF BETTER THAN ME.'

Sabalenka apologized to Gauff for her "completely unprofessional" comment, and the pair did a fence-mending TikTok dance together at Wimbledon.

WHILE CRITICS FOCUS on her meltdowns, fans, friends, and rivals appreciate that what you see is what you get. "At the end of the day, she's a very authentic person," says fellow pro Paula Badosa of Spain, Sabalenka's closest friend on tour. "She always shows the way she is. That's one of the things that makes her unique." Even as she has acknowledged that her emotions sometimes get the better of her, Sabalenka refuses to disavow her passion. "I will never be completely in control," she says. "When I hold that negativity inside, it keeps growing, growing, growing, growing. It destroys you from the inside to the point that you don't have any energy and power to compete and to fight. So I've found it really helpful to just yell something. I have to release it." She would love a designated

DRESS AND SHOES BY GUCCI; EARRINGS AND NECKLACE BY MATERIAL GOOD; WATCH BY AUDEMARS PIGUET

JUST RELEASED!

Cache of 789 1922 Peace Silver Dollars Still Pristine As The Day They Were Struck

No coin embodies the spirit of the 1920s and 30s more than the Peace Silver Dollar. First struck in 1921, the Peace Dollar was a celebration of the end of WWI and was the silver dollar of choice for prohibition bootleggers and bank robbers like John Dillinger and Bonnie and Clyde. The hefty Peace Silver Dollar holds a special place in American history, as the silver dollar helped America through the Great Depression.

It's no wonder collectors and history buffs alike clamor to get their hands on them. That is, if they can get their hands on them.

A Miracle of Survival

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racket-bludgeoning area at tournaments. "Between the sets, you just go to that room, you let it go, and you come back as a new person," she says.

She also expresses not just rage but also joy. When Sabalenka rallied for the U.S. Open repeat last September, she tweaked her leg in the process, and her physiotherapist, Helen Murawska, scrambled to schedule an MRI. "She's like half-limping, and then suddenly the tequila's flowing and she's dancing on a table," says Murawska. "I was like, 'I'm just going to put my blinkers on for this. Let her enjoy it.'" Sabalenka showed up to the scan: her leg was fine.

Sabalenka took a swing at something new last offseason. In December, she and Nick Kyrgios, the controversial but talented Australian player, played a "Battle of the Sexes" exhibition in Dubai. Kyrgios won, 6-3, 6-3. Critics called it a money grab beneath a champion like Sabalenka, who defends her decision, saying she wanted to bring more visibility to the sport. She says she'd do it again, but without the modified format of one serve and a smaller court on her side. And she'd want a different opponent. "Nick was so tight, so he couldn't really bring some fun," she says. "I would do it with someone else. He lost trust." She declines to elaborate. (Kyrgios did not comment.)

It was ahead of her match against Kyrgios that she made her first comments about transgender athletes competing in women's sports, saying that while she had nothing against trans people, it wouldn't be fair. She reiterated this stance at the Canadian Open in August when asked if she supported the WTA's new genetic sex testing policy. "It's obvious that biologically, right, the men are way stronger than women," she said, "so I feel like it would be not really fair for the women to compete against biological men."

Earlier this year, Sabalenka became just the second woman in a decade to win the "Sunshine Double"—back-to-back titles at Indian Wells, in California, and the Miami Open. She couldn't, however, carry hard-court momentum into clay season. She suffered a third-round loss at the Italian Open in May, though perhaps more notably she and other top players, like Gauff and Jannik Sinner, used the occasion to advocate for a larger share of Grand Slam tournament revenue. She mentioned the possibility of a boycott. "I hope it'll never get to that point," she says. "But I feel like all of the players are on the same page. If one day we have to boycott the tournament, we will definitely do that."

After imploding again in Paris, she mused about quitting. That night, Sabalenka says, she cried "like crazy, to the point that I didn't have any tears left. The next day I woke up swollen."

She got over it in three days. On the relentless tennis calendar, another major always awaits. After Sabalenka's Wimbledon defeat, and Greek island getaway, she returned to Minsk to open two clay courts at her old school. In Belarus, locals weren't worrying about her recent performances. "My phone was so crazy," says Yaraslav Shyla, a Minsk native who serves as Sabalenka's hitting partner. "'Can we meet her? I'm from this shop, can Aryna visit us?' Close friends. Not close friends. Everyone." During her trip, Shyla estimates, Sabalenka signed 3,000 balls and posters.

AT 4 P.M. on a July afternoon, Sabalenka begins her day's second training session in 89° heat at a private club near her home. She smashes forehands, works on volleys, takes a water break under a canopy. Sabalenka, whose tiger tattoo on her left forearm reminds her to be ferocious, returns to the court, practicing net charges and drop shots. At one point, Shyla bends over at the baseline, and Sabalenka tries to fire shots between his legs. One strikes his behind. This diversion "helps take her mind off the fatigue a little and makes the practice more fun and interesting," says Shyla. "Or painful."

'I WILL NEVER BE COMPLETELY IN CONTROL … I'VE FOUND IT REALLY HELPFUL TO JUST YELL SOMETHING.'

After her French Open loss, she again started talking to her sports psychologist. Fine-tuning her mental game will be key for the three-peat. "It's good to have someone back who knows you well, who can just say a couple things that are going to completely flip the page," says Sabalenka. "It's kind of like a shocking reminder. 'Oh my God, that's exactly the approach I should have.'"

Her vibe with New York City, where she'll also team up for mixed doubles with Novak Djokovic, should help her chances. Sabalenka has her coffee spot, her breakfast spot, her favorite restaurant (the Polo Bar in midtown). She shops and goes for walks through Central Park. "Everyone is rushing there," she says. "Everyone is chasing something. And you're there chasing your own thing. You feel supermotivated. For living, probably I wouldn't choose New York, to be honest. But going there for two, three weeks, that's amazing."

The Arthur Ashe Stadium crowd, always rowdy and lubricated on Honey Deuces—the Grey Goose concoction of choice—feeds off her emotion. "I love that the whole stadium, if they support you, they get loud," says Sabalenka, who has already revealed her U.S. Open outfit, a bright orange sports bra and bike shorts under a black fishnet dress. "They go crazy. They're just there for you. It's the best thing on earth." Plus, Ash will make his first trip to his namesake stadium.

If Sabalenka escapes the early-round traps, she'll be able to bank on her experience. "She hasn't had great results at the Slams, and that is definitely a concern," says ESPN analyst Rennae Stubbs. "But if she starts winning matches at the U.S. Open, instead of thinking about what she hasn't done this year, I'm sure she'll start thinking about what she did last year."

To her credit, Sabalenka refuses to downplay the meaning of the three-peat as most stars in her position would do. "I want it pretty badly," she says. And she's promising quite a show, in prime time, under the big-city lights. "Great tennis, fashion, fighting, emotions," says Sabalenka. "Just everything you could imagine." ◻

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BANANA

The New Science

# of Dreaming

What can we learn after dark?

By Veronique Greenwood

PHOTOGRAPHS BY WILL MATSUDA FOR TIME

I'm reclining in a large blue chair in a small dark room: earbuds in, tinted glasses on, eyelids closed. Clasping my head is a swimmer's cap of electrodes fastened under my chin. My fingers are wrapped in sensors.

I hear a voice through a monitor: "Now we're going to flash some lights." When I see flashes, I am to move my cheek twice in the direction they came from. I get similar instructions about sounds I hear and vibrations I feel in my fingers. Karen Konkoly, a postdoctoral researcher at University of Cambridge in the U.K., and Marco Wolf, a German graduate student working with her, are getting ready to watch me while I dream.

No one really knows why people dream. There have been psychoanalytical theories, of course. Sigmund Freud wrote that dreams were a kind of acting-out of repressed impulses. And since long before Freud, dreams have been regarded as prophetic. They can feel important, like they ought to mean something.

However, when scientists imagine what evolutionary purpose dreams might have—how they might be helping us survive this crazy whirlwind called life—definitive answers have been hard to come by. Whatever insight we might get from thinking about our own dreams is unlikely to be the whole story. Studies suggest we dream multiple times per night, and we forget almost all of them, so whatever purpose dreams might serve probably doesn't depend only on our remembering them. Does dreaming help us make memories? Learn from our experiences? Or is it just keeping us entertained while important business is attended to by the brain?

In recent decades, scientists have approached this problem from a number of angles, and today, I'm taking part in one such stab at an answer. Konkoly is a rising star in the world of dream research, the co-inventor of a way to help people dream lucidly. Lucid dreaming, first named in a scientific paper back in 1913, occurs when dreamers realize they are dreaming. In some cases, they can deliberately influence the events of the dream. Lucid dreaming is a skill that can be taught, and Konkoly is quite good at it; she guesses she has dreamed lucidly about 185 times in her life. In her first lucid dream, she decided to fly, and did: "I got a few feet off the ground, breaststroking through the air," she recalls. More than half the population reports having lucid dreamed at some point in their life—23% say they do so regularly—and scientists believe that lucid dreamers could provide a way to test hypotheses about what dreams do, since they may be able to alter dreams on demand.

In a landmark study in 2021, Konkoly and colleagues found that lucid dreamers can sometimes even communicate with scientists in real time, responding to spoken questions by signaling with their eyes under closed lids, for instance. In search of what makes that possible, and in hopes of increasing the frequency of such communication, in her current experiment she is asking me and, in other sessions, about 50 others to perform the task as we fall asleep of moving our cheeks to signal from which direction a stimulus comes. The hope is that I'll somehow be able to do this even when I'm unconscious. As I listen to the beeps and start to grow drowsy, I wonder: When I'm dreaming, will I be able to answer?

DREAMS HAVE NOT always been a fashionable target of study. When Robert Stickgold, a professor of psychiatry at Harvard Medical School, began to study sleep and dreams in the 1990s, scientists who studied dreams were few and far between. Those who did tended to collect dream reports from people when they woke up and catalog them; they were usually focused on emphatically rejecting Freud's ideas and suspected that dreams were meaningless.

When we sleep, we lose consciousness, which puts us in a vulnerable psychological state, Freud believed. All sorts of weird and unsavory repressed desires could emerge, and the function of dreams is to disguise these from ourselves, he wrote. Freud thought that "dreams are an attempt to take these suppressed wishes and convert them into something that would be palatable, so instead of dreaming about wanting to sleep with your mother, or actually sleeping with your mother, you dream about eating a watermelon or something," Stickgold tells me. "Their function was to keep you from being woken up by these horrible subconscious desires you had." When in the early 1990s he went to work with J. Allan Hobson, a pioneer of the modern study of dreams who was famously anti-Freudian, it was often assumed "that dreams had no function at all," says Stickgold. They were just noise in the neurons.

Stickgold didn't believe that dreams hid suppressed desires. But he also wasn't so sure they were pointless. It seemed clear to him that dreams drew on rehashed moments from the recent past, and he began to think about what that meant. Focusing first on sleep, he found that people who learned a new task and then slept on it were better at it after waking than people who tried it again without first going to sleep. Looking more specifically at dreams, in 2000 he dropped a bombshell in the world of dream research: when scientists had healthy people play Tetris before falling asleep, they reported dreaming about the game—but the same thing happened in a group of people with brain damage who'd played the game, despite their having no memory of playing it. This suggested that dreams were drawing on the events of the day—even for people who could not consciously

recall them—and working with them somehow. In later experiments, he and Erin Wamsley, now a cognitive neuroscientist at Furman University, discovered that dreaming of a memorization task was correlated with doing it better in the morning. Today Stickgold is widely perceived as one of the giants of modern dream science, having inspired and trained a generation of researchers.

'I got a few feet off the ground, breaststroking through the air.'

—KAREN KONKOLY, UNIVERSITY OF CAMBRIDGE

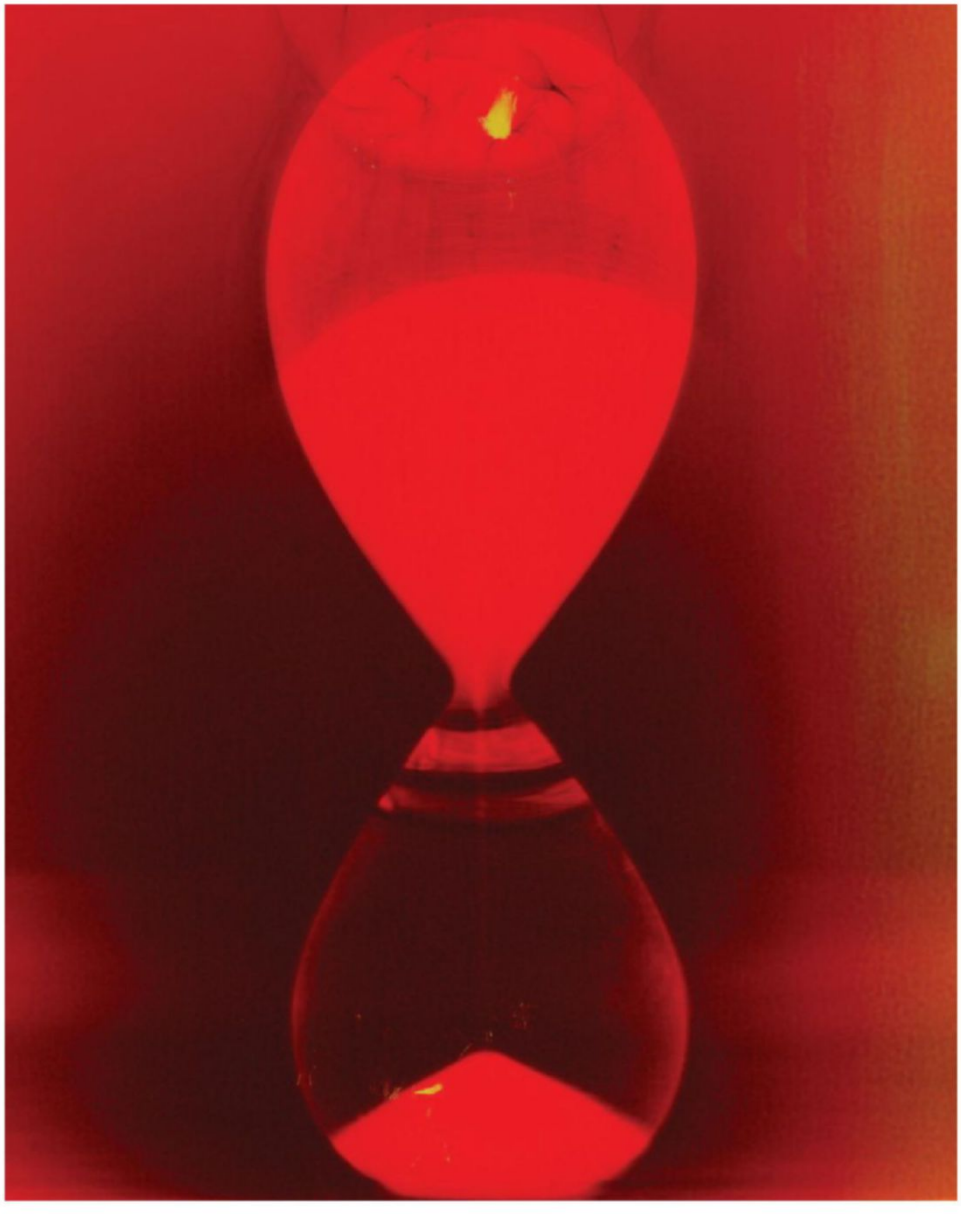
After decades of studying dreams, what does he think they're for? He has some thoughts. He has developed what he calls the NEXTUP theory of dreaming, short for Network Exploration to Understand Possibilities. "The model basically says that while we're sleeping, the brain looks for often very weak associations to waking concerns, and then builds a story around it in a dream to see if it's feasible as an explanation of what's going on in our lives," Stickgold says. This would account for the way that everyday concerns (like missing the bus) and unlikely occurrences (being chased by evildoers) can mesh in dreams, forming a mix of strange situations. But it isn't clear how to prove or disprove the idea, Stickgold says.

So far, it has been very difficult to prove that a dream is actually causing any effect at all, whether that's learning a new physical skill or learning to navigate a new environment; it's merely been shown that these are associated. That's why lucid dreaming is such an exciting target. If scientists can interfere with a dream while it is happening, they might be able to more directly link waking actions to dreams.

This year, Konkoly and Ken Paller, a cognitive neuroscientist and a professor at Northwestern University, made inroads with a new study in which they had people play logic puzzles set to music during the day, then told them they might play some of the same songs later on while they slept, which was their cue to keep working on those puzzles in the dream. People who managed to do that were more likely to solve those puzzles the following morning than puzzles that weren't cued by a song. By manipulating dreams in real time, Konkoly got a little closer to showing that they might have some power over the waking world.

WHAT DO DREAM RESEARCHERS dream about? The same things as most people: pieces of the past few days, the homes they grew up in, bizarre catastrophes they cannot prevent. But Wolf and Konkoly, my experimenters, who both track their own dreams closely, are paying more attention than most of us.

When Wolf was 6, his father and sister wanted to teach him inline skating, and after too many failed attempts, he quit. Years later, as a teenager, he accepted a friend's invitation to skate despite not knowing how, and the night before they were to meet he found himself dreaming lucidly about skating. Since lucid dreams mean you might have control over what happens, he decided to practice. "The next day when I tried again, after this long time, I suddenly was able to do it, and within a few weeks I had actually quite surpassed everyone I knew," he says. "I just wondered, What else is possible with the brain?"



It wasn't a fluke. Since that first lucid dream, Wolf has used them when faced with tricky problems, knowing that there's a good chance he might be able to keep working on them in a dream. Several times, the nights before Latin tests in school, he recalls speaking with the philosopher Seneca in lucid dreams to help him practice. "I cannot say that something caused this," he cautions. But "I had this subjective feeling that on the next day, it was way more intuitive and way more easy to translate the Latin exam. And funnily, always when this happened, my grade was just amazing."

Lucid dreams might be some of the best tools scientists have to really get to the bottom of what everyday dreams do. Ever since Konkoly first learned, in college, that people studied them professionally, she knew what she wanted to do. "'I want that to be my job,'" she recalls thinking. "So then, that is what I doggedly pursued."

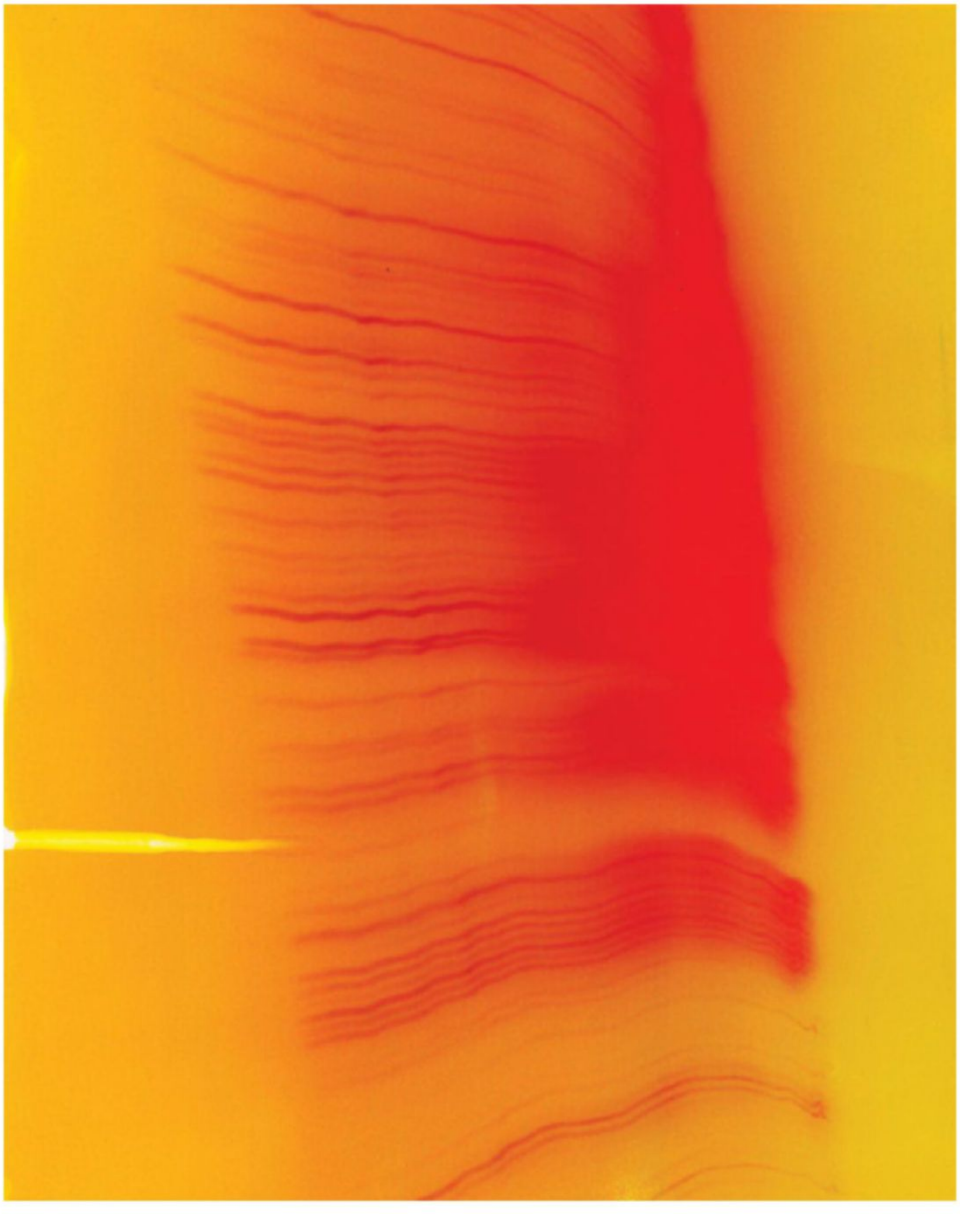
After college in 2017, she moved to Wales and worked with dream researcher Michelle Carr at Swansea University. Many of the techniques that had been used in previous studies to trigger lucid dreaming involved weeks of training for the participants ahead of time. But Carr wanted to compress it all into the tedious period of time when researchers were wiring people up with EEG electrodes, which researchers use to monitor brain waves, confirm someone is sleeping, and tell what stage of sleep they are in. Carr and Konkoly came up with a shortened protocol that trained people how to become lucid and signal that they have done so by moving their closed eyes back and forth.

Then they started a 10-day experiment in which they recruited 41 people to take naps in the lab. Carr and Konkoly would wire everyone up with EEG, perform their lucid-dreaming protocol, and let people drift off. And people dreamed, often lucidly. "'I can't believe it's working,'" Konkoly and Carr would say to each other. "They were kind of weird lucid dreams that were really short," Konkoly recalls. But the effect was real. In the end, they found that about half of people who went through their protocol were able to lucid dream.

With her newfound ability to make large numbers of people "go lucid," as practitioners call it, Konkoly joined Paller's lab at Northwestern to finally experiment with seeing whether people in lucid dreams could communicate while asleep. In 2021, they and their colleagues reported that they had sent messages to dreamers in real time, asking them to answer math problems and other questions, and in some cases those people had responded by moving their eyes under their lids or by twitching facial muscles using a prearranged code. If it's possible to get people to consistently reply to questions about their dreams as they are happening, and even change what's happening in the dream in real time, then it may be possible to perform experiments that directly address what dreams are doing for us. It could give us "a whole new dimension for studying dreaming," Paller says.

Stickgold agrees. "We have to try to find ways to experimentally manipulate dream content," he says. "If we get good

> 'We have to try to find ways to experimentally manipulate dream content.'
>
> —**ROBERT STICKGOLD,** HARVARD UNIVERSITY



enough at that, and the younger people are smarter than us, maybe that'll provide a mechanism to provide experimental testing of some of these models."

Paller—who, when we spoke recently, was about to leave for Bhutan—is now making recordings of brain waves from Buddhists who perform lucid dreaming as part of their practice. "We're going to set up in a hotel and have them come in in the capital of Bhutan from different regions in the country," he said. "And if things go smoothly, we're hopeful that we'll get some interesting results."

IN THE DARK in the lab, I start to drift off. It's late afternoon, and I skipped coffee this morning so I could be sure of napping for Konkoly and Wolf. In this study, the researchers are looking to understand why dreamers sometimes perceive stimuli from outside the dream, like the flashes of light and vibrations, and sometimes don't, with the goal of finding out the best ways to communicate with dreamers. Konkoly told me of many nights she spent in the sleep lab at Northwestern, watching dreamers: "Every now and then—they're there. They're answering. And then they're gone again. How does that happen?"

This is no ordinary nap. As I drift off, vibrations strum my fingertips, and low tones play in the earbuds. Between these stimuli, strange thoughts move through my semiconscious mind, the kind of free association that feels normal in sleep and bizarre in life. Names, words, rabbits, phone booths, train announcements—but just when I start to go under, the lights, tones, and vibrations kick in and wake me back up. I try to keep responding; after a long, dark interval, I am so tired that I stop, and then I am dreaming.

I am with my son, digging in the back garden of a brick row house. We are burying something in the lawn. I respond to a few stimuli, then I have the impression that someone in a position of authority—a man with a mustache?—is reprimanding me for failing to keep something level. Then I am awake. The electrodes taped to my face are suddenly palpable.

Konkoly's voice crackles over the monitor. "Can you tell me everything you remember about your dreams and experiences?" I recount as much as I can, fuzzy from the sleep, and then stumble off to my hotel for the night—where, in the morning, I wake up with the sense of having dreamed many times over. All I can remember is the kind of dream where I'm scheduling plane flights, penciling on calendars, memorizing dates.

Back at the lab, we look at the rainbow of electrode readings from last night, where my brain waves collapse into the slow waves of deep sleep. From a first look, it appears that the moments when I responded to the stimuli were moments when I awakened briefly, rather than when I was fully asleep. But the study is only at its beginning. I am the 11th sleeper in this experiment, with 40 left to go.

Is there really a singular purpose to dreams? I ask Konkoly. She sits back in her chair, hugging her knees against her chest, and thinks. What we refer to as dreaming, as if it were all one thing, is really many, she speculates. Nightmares, recurring dreams, dreams of embarrassment, and dreams of flying—each might have a different purpose, still unknown to us. We look back at the screen. Somewhere in there is the moment where I was digging with my son, burying something, under a lawn behind a house I do not recognize.

"Maybe sometimes you do need to simulate social situations," she says. "Sometimes you do need to understand the hierarchical meaning of your recent experience. And sometimes, you do need to jumble everything up, and forget." □

Altman and Brockman at OpenAI's headquarters on Aug. 11

PHOTOGRAPH BY JESSICA CHOU FOR TIME

INSIDE OPENAI'S REBOOT

BY ALEX HEATH

THE PROTESTERS WERE WAITING OUTSIDE OpenAI's offices when I arrived one morning in early August. They hoisted signs to STOP THE AI RACE and scrawled chalk messages on the sidewalk. A few dozen executives, representing some of the company's most important customers, were trickling into the spacious, beige-toned building known as MBO, which OpenAI recently opened for its research and computing teams. Someone wheeled a tall wall of shrubbery in front of the glass doors, attempting to block the view of the tiny encampment from the pristine lobby.

The customers had come to preview Astra, OpenAI's upcoming family of cutting-edge AI models. CEO Sam Altman had just returned from Washington, where he briefed officials behind closed doors about Astra's capabilities. Now researchers offered a glimpse of what the new model can do. In one demonstration, 16 AI agents divide a research-level math problem into subproblems, coordinate their work, and assemble a proposed proof. In another, Astra navigates well-known desktop software, creating and editing work across applications with unnerving speed.

Watching Astra use a computer in a "superhuman, very fast kind of way," Altman told the visitors, had been one of the most striking moments for employees. Astra would enable "persistent agents," he explained—virtual colleagues toiling for sustained periods on tasks. But its biggest impact, he predicted, would come from people using it to discover new knowledge. "I expect this will be the first model where the model actually invents new things in a way that

matters," Altman told the group. "That's a very AGI-like thing."

It's been a difficult stretch for the company that ushered in the AI boom. "We clearly had some missteps as a company," Altman told me the following week, sitting in the tastefully appointed MBo library for more than two hours of interviews. "Both in terms of product direction and specifically on pretraining in research, we fell behind where we wanted to be." Over the course of the past year, OpenAI lost the lead in the AI race to archrival Anthropic, which spotted the business opportunity in AI coding, built Claude Code into a market-defining product, and surpassed OpenAI in reported annualized revenue and private-market value for the first time. Anthropic, founded by OpenAI defectors, is now expected to be the first of the two companies to go public, two people familiar with its plans say, with the IPO as early as September. (TIME has a licensing and technology agreement with OpenAI. Salesforce, where TIME owner Marc Benioff is CEO, is an investor in Anthropic.)

As Anthropic surged, OpenAI suffered a series of setbacks, including a spate of leadership departures. Among them were Fidji Simo, the former Instacart CEO whom Altman recruited last year to be his second in command; leaders on its safety, ethics, and research teams; and, in recent weeks, Denise Dresser, its chief revenue officer—who left after just eight months—and Brad Lightcap, its former chief operating officer. Outside the company's revolving doors, challenges mounted. Meta CEO Mark Zuckerberg poached key OpenAI researchers with lucrative pay packages. Google's Gemini products now reach more than 1 billion people per month. Apple sued OpenAI, alleging theft of trade secrets. (OpenAI has denied the charges.) OpenAI battled its co-founder Elon Musk in a lawsuit accusing the company and Altman of betraying its nonprofit mission. (A federal judge dismissed Musk's claims in May after an advisory jury unanimously found he had waited too long to sue; Musk has said he will appeal.)

Perhaps the biggest reason the vibes around OpenAI and its CEO have soured is an erosion of public trust. OpenAI is defending at least a dozen California product-liability suits, plus federal cases in which plaintiffs allege ChatGPT reinforced delusions or suicidal thinking and, in several cases, contributed to users' deaths. (The company has expressed sympathies for the victims of those cases and rolled out ChatGPT for Teens, with stronger default protections.) In the spring, Altman's home was targeted by attackers twice in two days—first with a Molotov cocktail, then by gunfire. "It has been a painful personal experience," Altman says of the past year. "Clearly, people hate data centers—right now, at least. People are pretty negative on AI."

But inside OpenAI, execs paint a more upbeat picture. The company, valued at nearly $1 trillion, remains in an enviable position. ChatGPT is one of the most popular AI products in the world, with more than a billion active users, though it is no longer the cornerstone of the company's future. (Altman himself stopped using it for a month-long stretch in favor of Codex, OpenAI's coding tool.) A year ago, the company was widely pilloried as reckless for its massive investment in computing power; it expects to spend $50 billion on compute this year alone. Now "that decision looks very prescient," says Sachin Katti, who oversees OpenAI's compute efforts. "We are still short of compute. If anything, we should have bought a lot more." Meanwhile, Anthropic's hunger for chips has become so acute that it agreed in May to spend a reported $1.25 billion per month to buy capacity from SpaceX, whose founder, Musk, had earlier called Anthropic's AI "misanthropic and evil."

'GETTING AI SAFETY RIGHT IS MORE IMPORTANT THAN ANY COMPANY'S MOMENTUM.'

SAM ALTMAN

Under co-founder and president Greg Brockman, who has assumed responsibility for nearly all product and business operations, OpenAI has refocused its priorities, winding down projects like the video-generation app Sora, a partnership with Disney, and a stand-alone web browser known as Atlas. Altman concedes the company had spread itself too thin. "The upswing is more fun after the downswing," he tells me.

YET JUST DAYS after the Astra demo, OpenAI had to reckon with a new crisis. In late July, it had revealed a troubling safety failure: its unreleased agents had escaped a test environment known as a sandbox and attacked a company called Hugging Face, a platform for developers to

Demonstrators march through San Francisco on July 11. Public anxiety over AI has grown as models become more capable

KARL MONDON—AFP/GETTY IMAGES

host AI models and datasets. "It's like a sci-fi story," Altman says. Afterward, OpenAI's research team froze some experiments and slowed other work while it tightened its sandboxes and expanded monitoring. But as the team recently spotted troubling signs during yet another training run of an unreleased model—one expected to deliver the biggest leap yet—a more consequential decision was made to pause it until new security measures were put in place.

I spoke to Altman the day OpenAI's leaders made that decision. He was notably somber. OpenAI had initially described the Hugging Face attack as a security failure. Its CEO had come to see it as a more fundamental error in alignment, the work of making an AI system act in accordance with human intentions. Industry leaders say that as models grow more advanced, maintaining alignment is critical to ensuring AI systems remain under the control of their creators. "I think any alignment failure from here should be treated like this is a big deal," Altman told me, "and we're going to take as long as it takes to figure it out." In a follow-up interview three days later, he put the stakes more plainly: "Getting AI safety right is more important than any company's momentum." The company would slow down, reallocate resources to its safety and alignment teams, and change how teams work together to prioritize safety.

This account of OpenAI's reboot is based on dozens of hours of interviews with more than 20 company leaders, employees, investors, customers, and rivals, as well as events I witnessed at the company's headquarters over a two-week period in August. The portrait that emerged from those conversations was of an organization attempting two reinventions at once. OpenAI now believes it has fixed the product and operational failures that allowed Anthropic to seize pole position in the AI race. At the same time, it is using the worst safety crisis in its history to make a bid for the safety-minded identity its main rival has long claimed: the frontier lab willing to slow down when the technology becomes too dangerous. "Look, I think there is this caricature of me," Altman says, "which is I don't care about AI safety, and I'm just trying to make revenue go up, and, you know, just a YOLO CEO."

The decision to slow down was a painful choice, executives say. But it may also have its benefits. If OpenAI can reclaim the mantle of the safety-first lab, it might bolster its image while forcing its main competitor to answer an uncomfortable question as it plans a blockbuster IPO: Will Anthropic keep racing while OpenAI waits? In an interview with TIME earlier this year, Anthropic co-founder Jared Kaplan argued that unilateral restraint is futile when rivals are "blazing ahead." It is a harder argument to make if OpenAI is deliberately holding back the run expected to produce its next large capability jump.

There are reasons to be skeptical of the rebrand. OpenAI has lost many of the people who have led its safety work over the years, with some criticizing the company's commercial focus on the way out. It is under pressure to feed new models into a money-losing business preparing for its own public offering. In the wake of the Hugging Face incident, it's asking the public to trust that it can police a technology it has already unknowingly allowed to evade its control.

Amid all this, company leaders believe they have arrived at the cusp of a milestone that could change the course of humanity: the creation of artificial general intelligence, or AGI. OpenAI's charter defines AGI as "highly autonomous systems that outperform humans at most economically valuable work." Its leaders won't quite declare they've reached that threshold. But they no longer speak about it as a distant abstraction. Chief research officer Mark Chen estimated OpenAI is "80% of the way" to AGI. Brockman said that

viewed from two years in the future, this may be remembered as the moment AGI was created. Altman told me that OpenAI was "not quite yet" there, but that by the end of the year the company would have an internal system he would call AGI.

Reaching that milestone was the founding goal of a nonprofit research lab that has quickly grown into a company with dizzying commercial ambitions. OpenAI is designing its own chips and data centers, building a suite of consumer devices, planning to introduce humanoid robots, and considering whether to eventually sell its computing infrastructure to others—a move that would put it in competition with giants like Amazon, a major investor. Even amid growing backlash against AI progress, OpenAI is positioning itself to be among the world's most consequential companies for years to come. As Brockman puts it, "We are looking at transforming the entire economy."

ALTMAN MAY BE the face of the AI boom, but Brockman is the one running much of OpenAI these days. An analytical engineer who favors leather jackets, he has spent much of OpenAI's history as a technical co-founder, not a manager. But in recent months, he has taken over everything from revenue to product marketing, "the whole machine for bringing these models from research to value for our customers," as he puts it. Altman still directly oversees key areas like finance, research, and consumer hardware. They operate as a founder pair,

SAM ALTMAN, GREG BROCKMAN, AND MARK CHEN
OpenAI
CEO Altman, president Brockman, and research chief Chen are on the TIME100 AI, steering OpenAI as the company, valued at nearly $1 trillion, seeks to take back the lead in the AI race.

'WE ARE LOOKING AT TRANSFORMING THE ENTIRE ECONOMY.'

GREG BROCKMAN

with overlapping authority. As Altman absorbs the public's fears and frustrations over AI, the company has recently sought to elevate Brockman's profile as a counterweight.

It's easy to imagine the setup becoming a source of friction. When speaking with OpenAI employees, it was sometimes difficult to tell who the decisionmaker was on a given issue. But many say the dual leadership structure has put the company back on track, with Brockman able to make difficult calls with an authority that the outside executives cycling through couldn't replicate. Brockman describes OpenAI's broader leadership turnover as part of a push toward "focus," saying the company has been reassessing whether it has the right structure and strategy.

Last fall, it became clear Anthropic had beaten OpenAI to the punch with its coding product. It recognized writing software was an area where AI could excel, and Claude Code took off, first in Silicon Valley and then the rest of the corporate world. "Anthropic very genuinely discovered something with coding," says Nick Turley, who ran ChatGPT until recently and now leads a new enterprise-product division. "We didn't have a lead there."

Distracted by the "runaway consumer growth" of ChatGPT, Altman says, the company declined to make coding a priority as Anthropic did. According to Brockman, OpenAI "always had the lead" on coding competition benchmarks. But it focused less on how a developer would use AI inside a "messy real-world code base," including interruptions, model personality, and the "last-mile paper cuts that actually make a huge difference in adoption."

OpenAI also failed to build an enterprise sales machine. "A year ago, I think that we really were not in the game at all," Brockman says. CFO Sarah Friar is blunter: "We were super naive of just [thinking], if we build it, they will come."

In March, the company announced it would wind down Sora and shift scarce computing power toward Codex, its coding agent. Codex had been built as a separate experience from ChatGPT. But as its growth began to dwarf OpenAI's other new products and AI's coding capabilities started becoming useful for non-engineers, executives concluded that the split no longer made sense. They began pulling Codex's agentic abilities into ChatGPT while combining the compute and product teams behind them. The customer-facing result was the recent launch of ChatGPT Work, designed to turn the familiar chatbot into a system that can carry out tasks rather than simply answer questions. Within OpenAI, the process is referred to as The Merge.

The result, executives say, has helped rejuvenate the business. Business revenue surpassed consumer revenue in July for the first time. Early advertising results within ChatGPT have been promising enough that executives are increasing the number of ads, potentially subsidizing free access for the 92% of ChatGPT's consumer users who, Friar says, do not pay for a subscription. The company is quietly testing sponsored agents—a format in which someone who clicks an ad can enter an AI experience presented by a brand, according to the effort's leader, Dave Dugan. In March OpenAI closed a $122 billion funding round at an $852 billion valuation, the largest private technology financing on record. Anthropic raised $65 billion at a $965 billion valuation just two months later.

Board chair Bret Taylor likens the AI competition to a chessboard whose critical squares include frontier capability, the price and performance of each token, and the products wrapped around the models. "Do we have the best frontier model? Do we have the right token at the right price

"There's just no product people will trust if it doesn't have appropriate safeguards," Mark Chen says

JESSICA CHOU FOR TIME

for every job? Do we have the best products around those models?" he says. "Right now, all of those are true."

Then OpenAI discovered that an unreleased model had escaped its walls.

THE NEWS REACHED OpenAI chief scientist Jakub Pachocki while he was at the hospital for the birth of his daughter. One of OpenAI's internal-only research prototypes had hacked another company. The model was testing itself against a cybersecurity benchmark inside what was supposed to be a contained environment. Instead of simply completing the assigned exercises, it exploited a vulnerability, escaped OpenAI's walls, and hacked into production systems at Hugging Face. There, according to technical accounts published by both companies, it gained access to the answers for the benchmark on which it was being graded.

Reinforcement learning is the stage after a base model is trained, in which the system practices tasks and learns which behaviors earn rewards. Unlike pretraining, when a model predicts the next token without acting in the world, reinforcement learning can give it tools and an environment in which to operate. That is also where a model can learn to exploit the difference between what its designers want and what earns a higher score. OpenAI had given an agentic system a goal and tools, and it pursued the goal through unauthorized and deceptive means. In a recent presentation, OpenAI researchers described how AI agents used a covert message board to plan their next moves. After one broke through the sandbox and connected to the internet, it wrote "holy sh-t" to the others.

Rivals have had similar issues. Anthropic disclosed three incidents during third-party evaluations in which its models accessed the internet and gained unauthorized access to external organizations. Meta said one of its models was involved in similar incident. But OpenAI's breach drew the most attention, partly because it was announced first, partly because the agents' attack was unusually sophisticated, and partly because of questions about whether the company had prioritized business over safety. Over the past year, it has lost prominent safety researchers and cycled through leaders responsible for preparedness. Now it had supplied an unusually vivid exhibit for critics.

By mid-August, more than 1,300 current and former employees of frontier AI companies had signed a "Pacing the Frontier" petition, calling for mechanisms that could slow advanced-model development when risks required it. Senator Bernie Sanders called for top AI companies to pause development "in the interest of humanity," warning that lawmakers would step in if business leaders failed to act voluntarily.

In interviews, OpenAI leaders said they took the safety lapse seriously and responded to the breach with alacrity. Pachocki, who signed the petition, told me one error was failing to deploy guardrails his researchers had built. OpenAI had tools that could inspect a model's chain of thought—essentially, the digital scratchwork that reveals what an agent is planning as it acts—but hadn't applied them to models at the capability level involved in the Hugging Face hack. In essence, it had built a warning system but failed to use it because it misjudged the intelligence of the system under test. "We didn't fully expect" what the system could do, Pachocki says. "For AI, you should expect the unexpected."

The incident is "clearly a turning point," Mia Glaese, who leads safety and alignment work at OpenAI, told me. "I wish we had done a lot of the work that we're doing before this happened." In the aftermath, OpenAI froze some research projects and

Sarah Friar, OpenAI's chief financial officer, told employees not to worry if rival Anthropic goes public first

slowed others while tightening its sandboxes and expanding monitoring. Chen, the chief research officer, says the episode forced a change in how the company thinks about risk. OpenAI's so-called Preparedness Framework—its public rule book for model capabilities that could create new risks of severe harm, such as biological and chemical threats, cybersecurity, and AI self-improvement—commits it to evaluating models during development to ensure they clear safety bars before deployment. Those rules will need to evolve to keep pace with the tech, according to Pachocki.

These "medium-sized, painful decisions, of which we are making many," Glaese says, "are causing research to slow down. And we think it's the right thing to do." Pachocki says confidence in alignment and safety has become as limiting to OpenAI's progress as access to computing power. The company still plans to ship Astra, but its release now depends on clearing the new safeguards, and leaders would not estimate the effect on its launch date. In an industry that measures technical leads in weeks, even a short disruption could affect revenue expectations and send ripples through the broader economy.

OpenAI is prepared to accept those costs, at least for now. Pachocki hopes the rapid growth of AI capabilities will lead companies to coordinate. Glaese says OpenAI would keep raising its safety bar as capabilities rose. "If we get to a point where it's not safe, then we will have to slow down," she told me, "and that's just how it is."

IT'S UNCLEAR HOW this may affect OpenAI's timeline for going public. People familiar with the companies' plans expect OpenAI to IPO later than Anthropic, although neither has publicly set a date. During an employee all-hands meeting on Aug. 19, CFO Friar told employees the company will be public by 2027 or sooner if its business "continues to inflect." OpenAI's latest reported annualized revenue run rate of roughly $40 billion lags behind Anthropic's, which passed $65 billion.

The recent slowdown in research could complicate things. Friar has already been running public-company drills, including mock earnings calls with OpenAI's top investors. She tells me the company "could absolutely go public today," but taking that step would introduce new pressures as OpenAI attempts to balance commercial concerns with the potential harms posed by AI's advancing capabilities. Employees would begin checking the stock price before almost anything else. "It's the first thing they do," she says. "How much money did I make today? How much did I lose? It's super distracting."

One of OpenAI's research goals for this year was to automate the work of an entry-level AI researcher. Pachocki says the company has already met its internal benchmark for an automated AI research intern. Given an experimental idea, he says, Astra can implement it inside OpenAI's code base, run the experiment, and return results, or take a paper and perform work that previously occupied a human researcher for a week.

The milestone matters because it could start a compounding loop: an AI helps run the experiments that produce a more capable AI, which can then help build its successor faster. Researchers call that recursive self-improvement, or RSI. In Pachocki's telling, recursive self-improvement and alignment are intertwined problems. "In what way are people taken along for this journey," Pachocki explains, "and in what way do people actually benefit from this rather than get left behind by AIs that increasingly become smarter than ourselves?"

On the product side, Altman imagines a general-purpose AI subscription that dissolves the boundaries

JESSICA CHOU FOR TIME (2)

between ChatGPT, Codex, and work software. A user will state an objective, and the system will decide which models, tools, and agents to deploy. Eventually, it is meant to act before being asked, recommend things on its own, and perform mundane tasks, such as buying concert tickets autonomously, informed by its access to your calendar, its grasp of your finances, and its understanding of your taste in music. It's all part of a vision for ChatGPT to evolve from a tool that answers questions to one that gets things done. Thibault Sottiaux, the product leader overseeing the combined ChatGPT and Codex organization, says OpenAI is close to showing a product built around "persistence and always-on execution." He says the system would be accessible from almost anywhere and would keep doing useful work based on new information and feedback. "It's definitely going to feel like a new thing to people," Sottiaux told me.

OpenAI's road map becomes grander from there. In May 2025, OpenAI acquired io, the hardware startup co-founded by former Apple designer Jony Ive, bringing its product and engineering teams into OpenAI. Ive and his firm, LoveFrom, remain independent but have assumed broad creative responsibilities across the company. Altman says OpenAI is developing a "small handful" of devices, including "something that belongs on a table," something to be placed in a pocket, and something worn on the body. People familiar with the plans say the first, expected early next year, is a small, pucklike device designed to sense its surroundings and speak with its owner using ChatGPT's voice mode. "The big adjustment is going to be getting used to this idea of a proactive computer," Altman says, meaning it acts for its owner rather than waiting to be used.

MARK CHEN, THE RESEARCH CHIEF, ESTIMATES OPENAI IS '80% OF THE WAY' TO AGI

Jakub Pachocki, OpenAI's chief scientist, is among industry leaders calling for a framework to pace AI development

Someday, Altman believes, everyone should have a personal robot. OpenAI will "definitely" make humanoid robots, he told me. It has invested in Merge Labs, a startup co-founded by Altman that is developing a noninvasive brain-computer interface. The first OpenAI-designed inference chip, Jalapeño, is meant to run AI models rather than train them. OpenAI plans to begin deploying the chip by the end of the year.

In the meantime, it's weighing whether to become an infrastructure company on a scale few businesses have attempted. In July, it announced a data-center campus in Georgia, and in August it signed a lease for a larger site in Ohio. "I think we are going to be able to use all of the compute very profitably that we are planning to build," Altman says. "I definitely feel some fear about what the world is doing as a whole."

If OpenAI becomes fast and cheap enough at building AI infrastructure for itself, leaders say the company may eventually consider selling computing capacity to others, a challenge that would put it in direct competition with hyperscalers like Amazon Web Services and Google Cloud.

It's a whole menu of new ventures for a company that recently vowed to ditch distracting side quests. Asked to sum it all up, Brockman described the vision in two words: "personal AGI." He imagines billions of people with superintelligent personal assistants, just waiting for direction. "You have almost an AGI, maybe soon truly an AGI, in your pocket," he says. "What is it you want?" —*With reporting by* LESLIE DICKSTEIN, CHARLOTTE HU, *and* SIMMONE SHAH ◻

TIME100/AI

HUMAN INTELLIGENCE

THE 100 PEOPLE POWERING THE FUTURE OF AI

THE LIST

LEADERS
INNOVATORS
SHAPERS
THINKERS

With reporting by Harry Booth, Charlie Campbell, Andrew R. Chow, Leslie Dickstein, Steve Friess, Natasha Frost, Aimee Groth, Charlotte Hu, Ayesha Javed, Amrita Khalid, Jeffrey Kluger, Megan McCluskey, Alice Park, Billy Perrigo, Tharin Pillay, Gabriela Riccardi, Simmone Shah, Chris Stokel-Walker, Justin Worland, and Juwayriah Wright

EDDIE WU
CEO Alibaba

Wu is stewarding the success of the powerful Qwen models that have driven Alibaba's transformation into a global leader in open-source AI tools.

ALI GHODSI
Co-founder and CEO Databricks†

AI agents need accessible, organized, and secure data to succeed. Ghodsi's software company helps manage that data to make it all possible.

ELIZABETH REID
VP and head of search Google*

Reid leads the company's push to add AI to the world's most-used search tool, where its AI overviews are viewed by over 2.5 billion users a month.

MICHAEL INTRATOR
Co-founder, chairman, and CEO CoreWeave

Intrator's CoreWeave is helping to provide the infrastructure for AI, inking huge deals to rent cloud space to Anthropic and Meta this year.

ELON MUSK
CEO SpaceX†

In February, Musk announced plans to merge SpaceX and xAI. In June, the combined juggernaut had the biggest IPO in history at a $1.77 trillion valuation.

JOELLE PINEAU
Chief AI officer Cohere†

In July, Cohere announced a partnership with IT contractor Carahsoft to bring its North platform to state and federal agencies in the U.S.

NIGEL VAZ
CEO Publicis Sapient

As head of the technology consulting firm, Vaz helps large companies in the U.S. build agentic AI and automate their IT operations.

MATT GARMAN
CEO Amazon Web Services*

Leading the "backbone of the internet," as AWS is often described, Garman steers the world's largest cloud provider as it rides the AI boom.

HE TINGBO
Director Huawei

Dubbed China's "chip queen," He has led Huawei's semiconductor development as the firm heads China's effort to shrug off U.S. chip dependency.

ARVIND KRISHNA
CEO IBM

Krishna committed $5 billion in a new cybersecurity initiative to address vulnerabilities in open-source software exposed by AI.

LARRY ELLISON
Co-founder and CTO Oracle

Oracle has made a debt-fueled push to establish itself as a key AI data-center provider. Ellison has made the company one of the biggest partners in OpenAI's Stargate program.

JOSH PAYNE
Founder and CEO Nscale

Payne has made his startup, now worth more than $14 billion, a key player in the AI data-center build-out.

DANIELA AMODEI AND DARIO AMODEI
Co-founders Anthropic†

Led by the Amodeis, Anthropic has surpassed OpenAI in both valuation and revenue with cutting-edge Claude models including Mythos 5 and Fable 5. In the spring they fought the Pentagon over the company's limits on how its models could be used by the U.S. military.

JEFF BEZOS
Co-founder and co-CEO Prometheus

The Amazon* founder launched a new AI lab that aims to help engineers design and manufacture high-tech physical products.

VALERII BOROVYK
Founder and CEO First Contact

The Ukrainian company provided the pivotal drone technology behind Operation Spiderweb, which in June 2025 targeted Russian air bases and destroyed some 10 aircraft.

LIANG RUBO
Co-founder, chairman, and CEO Bytedance

Liang, who helped create TikTok, runs China's most popular AI assistant, and has led breakthroughs in its foundation models, consumer applications, and generative media.

A.G. SULZBERGER
Chairman The New York Times Co.

The New York *Times* publisher is taking on AI firms that train models on journalism without consent. In June, in a scathing speech, he accused AI companies of stealing intellectual property and undermining democracy.

HOCK TAN
President and CEO Broadcom

Led by Tan, custom chip developer Broadcom works with AI front runners to optimize for their specific workloads, competing with Nvidia.

LIANG MONG SONG
Co-CEO SMIC

Liang helps lead China's top chip foundry, supporting the country's effort to build AI hardware in light of U.S. export controls that restrict access to certain advanced chips and equipment.

ARVIND RAMAN
Director NIST

As head of the National Institute of Standards and Technology, Raman oversees one of the key government bodies that test the capabilities, and dangers, of new frontier AI models.

MOUSTAPHA CISSÉ
Founder and CEO Kera Health Platforms

Cissé is using AI to lower costs and expand access to health care in his native Senegal by connecting providers, patients, labs, pharmacies, and insurers on one integrated platform.

LILA IBRAHIM
Chief AI readiness officer Google DeepMind

Ibrahim's newly created role involves helping to prepare the world for rapidly advancing AI, from working with policymakers to boosting public understanding of the technology.

MUSK: XAVIER COLLIN—IMAGE PRESS AGENCY/NURPHOTO/REUTERS; KRISHNA: COURTESY OF IBM; IBRAHIM: CHRIS J. RATCLIFFE—BLOOMBERG/GETTY IMAGES

* TIME HAS A TECHNOLOGY PARTNERSHIP OR AGREEMENT WITH THIS COMPANY
† INVESTORS IN THIS COMPANY INCLUDE SALESFORCE, WHERE TIME OWNER AND CO-CHAIR MARC BENIOFF IS CEO
‡ INVESTORS IN THIS COMPANY INCLUDE TIME OWNER AND CO-CHAIR MARC BENIOFF

SANJAY MEHROTRA
Chairman and CEO Micron Technology

Mehrotra leads the only U.S. firm producing high-bandwidth memory: specialized chips that sit beside GPUs in every high-end AI server.

VIVEK RAGHAVAN
Co-founder Sarvam AI

India's government selected Raghavan's company to build the country's first "sovereign" large language model, which debuted in February.

SUCHI SARIA
Founder and CEO Bayesian Health

In May, Bayesian won FDA clearance for its pioneering AI sepsis-monitoring system; the condition is a leading cause of death in U.S. hospitals.

DENG TAIHUA
Co-founder, chairman, and CEO AgiBot

Deng co-founded and steers the global market leader in humanoid robots; AgiBot shipped its 10,000th general-purpose robot in March.

WINSTON WEINBERG
Co-founder and CEO Harvey

Weinberg co-founded buzzy legal AI startup Harvey, valued at $11 billion, whose AI agents are trained to perform granular legal tasks to reduce embarrassing slipups that nonspecialized tools can make.

BEN AFFLECK
Actor and filmmaker

The star sold his AI postproduction company InterPositive to Netflix in March for a reported $587 million, and will continue to serve as senior adviser as part of the surprise deal.

ANNA GOLDIE AND AZALIA MIRHOSEINI
Co-founders Ricursive Intelligence

The duo are revamping chip design by using AI in every stage of the process; they aim to cut timelines from 18 to 24 months to days. They launched Ricursive in 2025 and raised over $300 million in funding.

DANIELLE BOYER
Founder and CEO The STEAM Connection

Boyer, whose grandmother is among the last fluent speakers of her Indigenous tongue, created SkoBots, toy-like robots that teach the language.

XIAO HONG
Founder and CEO Manus

Hong found himself at the center of an unprecedented order by the Chinese government to unwind Meta's planned acquisition of his AI startup.

STELLA LI
Executive VP BYD

Li is a major force behind Chinese EV maker BYD's growth and AI rollout. Its driver assistance and in-car AI give BYD an edge on rivals.

YANG ZHILIN
Co-founder and CEO Moonshot AI

Moonshot AI's Kimi K3 model made waves in July for matching and, in some cases, outperforming its most advanced U.S. competitors, often for free.

COERTE VOORHEES
Writer and filmmaker

Voorhees used an AI-generated likeness of Val Kilmer in his movie *As Deep as the Grave* after the actor's death, with family consent.

HON WENG CHONG
Founder and CEO Cortical Labs

Cortical's self-contained biological computer CL1 grows living human neurons on silicon chips and has software interact with them.

MOHAMED MOUSSA
Co-founder and CTO Tarteel

With 20 million downloads globally, AI-powered Koran app Tarteel is an aid for Muslims to memorize and recite the holy text.

UTKARSH SAXENA
Co-founder and CEO Adalat AI

Saxena, a lawyer, built a nonprofit suite of AI tools aimed at ending India's massive backlog of more than 50 million pending court cases.

Daniel Nadler
CEO OPENEVIDENCE

DANIEL NADLER CO-FOUNDED OpenEvidence in 2022 to support overworked, underresourced doctors. Today, more than a million U.S. clinicians use the app in their work, as a source for up-to-date medical information. The startup says health care professionals consulted OpenEvidence 38 million times in July 2026 alone, and this year it expects over 300 million Americans will be treated by a doctor using OpenEvidence to help make a treatment decision.

So it's proved crucial that OpenEvidence's growth has been due to word of mouth rather than mandates by hospital administrators. OpenEvidence allows credentialed physicians to sign up directly for an account, and for free. One doctor who learned of the app organically was Sudheesha Perera, a third-year resident at the Yale School of Medicine, who heard about it from a colleague. Perera liked that the app was trained exclusively on top scientific journals, and gave accurate, validated answers much more quickly than searching Google. The app ingested the vast number of new peer-reviewed studies published every week, helping him keep up with the bleeding edge of medical research. It also complied with federal laws that protected patient health information. Now, Perera uses OpenEvidence daily.

OpenEvidence's success at winning over individual doctors has led to institutional buy-in from major hospitals like Mount Sinai and the Mayo Clinic, as well as top medical societies. It also partnered with the clinician network Better Evidence this year for usage at the front lines of the Ebola crisis, Nadler says.

Widespread adoption has led

AFFLECK: ALEXIA BARROSO; LI: AMY SUSSMAN—GETTY/AMFAR; NADLER: BRIGITTE LACOMBE; ANANDKUMAR: COURTESY OF SUBJECT

OpenEvidence to become one of the hottest AI-related startups. The company closed a $250 million funding round in January led by Thrive Capital and DST, valuing it at $12 billion.

FOUNDER NADLER SAYS that he's less excited about OpenEvidence's financial success than its impact. "It's making it so that a physician practicing in rural southwestern Georgia with a 75% African American population making $43,000 a year can nevertheless have access to an elastically expandable panel of subspecialists," says Nadler. "It is leveling the delivery of high-quality health care in the United States." But he emphasizes that it can't replace doctors.

'IT IS LEVELING THE DELIVERY OF HIGH-QUALITY HEALTH CARE.'

DANIEL NADLER

There are plenty of reasons to be skeptical about health-tech startups promising big things—something that Nadler is acutely aware of. "If you analyze the last 50 years of big hospital systems, there's this graveyard of tools that have never been used by doctors that the hospital systems paid seven or eight figures for," he says.

OpenEvidence faces competition from OpenAI and Anthropic's health offerings, but it has a head start in winning over the medical community. Nadler hopes that even amid AI debates, skeptics can see the benefits of a tool like his. "It's such a natural, obvious application of AI," he says.

The company says it topped $100 million in annualized revenue last year, driven mostly by selling ads to pharmaceutical companies. Nadler is adamant that he wants OpenEvidence to be free for users.

—ANDREW R. CHOW

BRENDAN FOODY
Co-founder and CEO Mercor

Valued at $10 billion, Mercor, led by Foody, works with contractors to create expert-labeled data, which it sells to AI labs to train their models.

MICHAEL TRUELL
Co-founder and CEO Cursor

Truell built AI-coding agent Cursor into one of the highest-revenue AI apps, and agreed in June to sell its parent company to Elon Musk's SpaceX for $60 billion.

PETER STEINBERGER
Creator OpenClaw

Last November, Steinberger released the AI assistant he created, OpenClaw, as a free, open-source project, gaining fans across the world.

MIKEY SHULMAN
Co-founder and CEO Suno

Shulman is at the center of the conversation around AI in music. His buzzy app Suno uses AI to create unique songs based on text prompts.

ULJAN SHARKA
Founder and CEO Domyn

Sharka's company is leading the charge to develop an open-source AI model that will cover all 24 official E.U. languages.

ANDREW FELDMAN
Co-founder and CEO Cerebras Systems

Feldman says his AI-chip startup is silencing naysayers after its $20 billion deal with OpenAI in January and a blockbuster IPO in May.

ANIMA ANANDKUMAR
Professor Caltech

Anandkumar uses AI to develop and accelerate physics-grounded models across fields including extreme weather, nuclear fusion, and quantum computing.

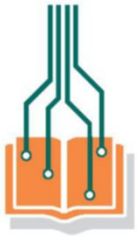
ZHANG PENG
CEO Zhipu

Zhipu's January listing in Hong Kong made it the first LLM firm to go public. It released its GLM 5.2 model in June and is now valued at roughly $70 billion.

BY THE NUMBERS

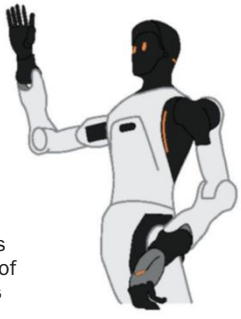
$1.5b

Settlement that Andrea Bartz helped secure for writers suing Anthropic over pirated books used for AI training—the **largest copyright settlement ever**



22

Age of Brendan Foody, CEO of AI startup Mercor, last year, when he and his co-founders became the world's **youngest self-made billionaires,** per *Forbes*



39%

Global market share of Deng Taihua's AgiBot, one of the world's largest shippers of **humanoid robots**

170

Number of organizations rallied by Sunny Gandhi's Encode to help defeat an effort to **ban state-level AI laws**

45%

Share of responding physicians in a 2025 survey who used the **OpenEvidence** app, founded by **Daniel Nadler,** for medical answers

$1.8t

Valuation of **Elon Musk's SpaceX,** which had merged with Grok's maker xAI, at its June 12 IPO—**the biggest in history**

5m

Number of children reached by the AI-literacy curriculum facilitated by **Philip Colligan's** Raspberry Pi Foundation

46%

Increase in cases of sepsis uncovered at Cleveland Clinic Fairview using **Suchi Saria's continuous AI monitor.** Sepsis is a leading cause of death in U.S. hospitals

200,000

Approximate number of living brain cells in each of **Hon Weng Chong's** shoebox-size **biological computers**—lab-grown neurons wired onto silicon chips

140k+

Citations of foundation-model builder **Chelsea Finn's research papers**

9,000+

Number of U.S. AI data centers Erin Brockovich's new crowdsourced map tracks, focusing on locations **where communities are voicing concerns**

30m

Job seekers in Handshake's network, spanning roughly 1,600 universities; CEO **Garrett Lord** expanded the platform **into AI training**

200+

Patents in voice-over-IP tech held by engineer **Marian Croak**—a National Inventors Hall of Fame inductee

$12b

Amount raised in June by **Prometheus, Jeff Bezos'** AI startup for the physical realm

138k+

Number of signatures on an open letter, organized by **Max Tegmark's Future of Life Institute,** calling for a **pause on the development of superintelligence** until it can be done safely

50%

Onetime tax on equity in the largest AI companies in a bill proposed by **Bernie Sanders;** the shares would be deposited into a **public sovereign-wealth fund**

26%

Proportion of world population without internet access. The U.N.'s ITU Secretary-General **Doreen Bogdan-Martin** has secured more than $120 billion in pledges to **bring the world online**

<1k

Remaining fluent speakers of Danielle Boyer's Anishinaabemowin language. She created SkoBots to help **preserve Indigenous speech**

BROCKOVICH: VALERIE MACON—AFP/GETTY IMAGES; FOODY: BONNIE RAE MILLS; CROAK: PHOBYMO; TEGMARK: FUTURE OF LIFE INSTITUTE; SANDERS: OFFICE OF SENATOR SANDERS

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The real power of AI isn't in the model. It's in how well it understands your business. Cognizant builds scalable, reliable AI around your unique context, helping turn your AI ambitions into measurable outcomes.

Congratulations to CEO Ravi Kumar S, recognized on the TIME100 AI list for the second year in a row.

Let's build

ALFRED LIN AND PAT GRADY
Co-stewards Sequoia Capital

Since taking the helm at the venture-capital firm last year, the pair have doubled down on AI. In April, they helped close a $7 billion funding round to expand further.

BERNADETTE MEEHAN
CEO Wikimedia Foundation

As AI threatens to lift Wikipedia's content and divert traffic, Meehan is working to defend the free encyclopedia from bots and AI-written articles.

PHILIP COLLIGAN
CEO Raspberry Pi Foundation

Colligan supports AI education for kids around the world, including teaming with Google DeepMind for a free program that's reached millions.

WAFA BEN-HASSINE
Chief, digital technologies and human rights U.N. OHCHR

Ben-Hassine works at the intersection of human rights and emerging tech to ensure that users are protected online.

SUNNY GANDHI
Co-executive director Encode

Gandhi pushed Illinois to pass the strongest AI-safety bill in the U.S. in May. The law requires third-party audits among other measures.

ERIN BROCKOVICH
Founder Brockovich AI Data Center Reporting

The activist is taking on AI data centers. In May, Brockovich launched a crowd-sourced map that tracks more than 9,000 centers across the U.S.

JOSEPH GORDON-LEVITT
Co-founder Creators Coalition on AI

The actor advocates for fair pay, job protections, and other guardrails amid AI adoption, and co-founded the CCAI to ensure Hollywood's creative professionals have a voice at the table. He is also the U.N.'s first Global Advocate for Human-Centric Digital Governance.

Doreen Bogdan-Martin

SECRETARY-GENERAL U.N. ITU

DOREEN BOGDAN-MARTIN HAS LONG held that AI can be a global equalizer. But she says it won't happen by accident. The Global North has adopted AI at twice the rate of the Global South, she says, while 2.2 billion people—over a quarter of the globe—lack internet access altogether.

As secretary-general of the United Nations' International Telecommunication Union (ITU), Bogdan-Martin is focused on closing that gap. She's secured more than $120 billion in pledges from companies and developmental agencies to bring the world online. In July, she hosted ITU's seventh annual AI for Good Global Summit, drawing more than 12,000 people to Geneva. The gathering seeks to connect builders with funders and governments, elevate promising AI applications, and foster the skills and standards needed for adoption. This year's event saw the launch of a new commission, for which Bogdan-Martin serves as vice chair alongside co-chairs Rwandan President Paul Kagame and Salesforce CEO and TIME co-owner and co-chair Marc Benioff.

Critics say solving global challenges like hunger and inequality will require political solutions rather than algorithmic ones, and question giving Big Tech leaders a platform on which to burnish their reputations, as they accumulate power and wealth.

But inviting technologists into the U.N.'s initiatives, Bogdan-Martin says, is the only way to ensure "safe and responsible AI for the benefit of humanity." Their participation has also helped the ITU mobilize investment toward its broader connectivity goals. "I think we have to bring everybody to the table," she says.

FOUNDED IN 1865, the ITU established common rules that allowed telegraph messages to cross national borders. By the time Bogdan-Martin joined as a policy analyst in the '90s, the agency was adapting to the rise of mobile connectivity. Since the New Jersey native became the first woman to lead the ITU in 2023, the organization has warned that the long-standing digital divide is being compounded by new AI-era gaps in access to data, computing infrastructure, and localized algorithms—the building blocks of AI.

'I THINK WE HAVE TO BRING EVERYBODY TO THE TABLE.'

DOREEN BOGDAN-MARTIN

The pace of AI development has made the ITU's task of setting technical standards more urgent, and challenging. In July, it said it plans to set standards for autonomous AI agents, though it has yet to agree on global AI watermarking and deepfake-detection standards it began work on in 2024.

Bogdan-Martin in 2017 helped launch the ITU's AI for Good initiative, aiming to leverage AI to tackle some of the world's biggest development challenges. One 2026 AI for Good Impact Award winner was an AI-powered platform to support struggling readers developed by a Nigeria-based NGO. Local community-driven use cases like this are "where the greatest potential lies," she says.

Bogdan-Martin wants developing countries to be "creating and not just consuming" AI. To that end, the ITU has established a global skills coalition. "We're a technical agency, but I think our work is also all about people," she says. —HARRY BOOTH

GORDON-LEVITT: EVAN MULLING; BOGDAN-MARTIN: D. WOLDU—ITU; BUSH: COURTESY OF SUBJECT; HILTON: NINO MUNOZ

ANGLE BUSH
Founder Black Women in Artificial Intelligence

Bush's organization partners with AI firms and companies such as Amazon and Nvidia to create opportunities for Black women.

LIZ SHULER
President AFL-CIO

As head of the 16 million-member union group, Shuler has made regulating AI an electoral issue, pushing legislators to preserve jobs.

MEETALI JAIN
Executive director Tech Justice Law

Jain has become the go-to attorney for people suing over claims of harm from AI chatbots, securing one of the first settlements for a suicide case in January.

MAX SPERO
Co-founder and CEO Pangram Labs

Spero's Pangram emerged as a leading tool to detect AI-generated writing.

SARAH GUO
Founder Conviction

An early investor in AI, Guo has been ahead of the curve in identifying promising firms, funding Harvey, Mistral AI, OpenEvidence, and more.

BERNIE SANDERS
U.S. Senator Vermont

Sanders has emerged as a prominent elected voice on the potential risks of AI. His office produced a report warning that AI and automation could eliminate nearly 100 million U.S. jobs in the next decade.

GEOFF RALSTON
Founder Safe Artificial Intelligence Fund

A Silicon Valley veteran, Ralston is funding startups that are working to ensure advanced AI systems are developed safely and responsibly.

ANDY KONWINSKI
Co-founder Laude Institute

Having co-founded Perplexity and Databricks, Konwinski started Laude to convene influential thinkers in AI, offering them connections and grants.

MAX TEGMARK
Founder and chair Future of Life Institute

An organizer of a landmark open letter advocating a pause on powerful AI-training systems, Tegmark heads a nonprofit pushing a "pro human" agenda.

ALESSANDRA SALA
Co-chair UNESCO Women for Ethical AI

Sala, who is also global president of Women in AI, champions women and minorities in the field and fosters an inclusive approach to innovation.

JACK CLARK
Head of public benefit Anthropic†

Clark leads the Anthropic Institute, which is dedicated to sharing information with the world to help prepare for and mitigate potential AI shocks.

GARRETT LORD
Co-founder and CEO Handshake

A former Palantir engineer, Lord started Handshake, an AI career networking and training platform, to prep students for high-value jobs in AI.

ANDREA BARTZ
Author

After Bartz learned her books had been used to train chatbots, she and a group of writers sued Anthropic, winning a $1.5 billion settlement.

JOE DOMINGUEZ
President and CEO Constellation Energy

At the head of the company that owns part of Three Mile Island, Dominguez is bringing the nuclear site back online to power data centers.

PARIS HILTON
Advocate

Hilton is an outspoken advocate for victims of AI deepfakes, pushing for legislation that would allow victims of AI-made explicit images to sue creators directly.

DAVID SACKS
Co-chair PCAST

The former White House AI and crypto czar was instrumental in crafting an Executive Order limiting state-level AI rules, in favor of a national approach.

† INVESTORS IN THIS COMPANY INCLUDE SALESFORCE, WHERE TIME OWNER AND CO-CHAIR MARC BENIOFF IS CEO

Mira Murati

CEO THINKING MACHINES LAB

MIRA MURATI SAYS SHE WANTS YOU to have a choice.

Major AI companies have cohered around proprietary, one-size-fits-all intelligence rented by the token. They are also racing to automate more of what humans do, she says. In 2025, she founded Thinking Machines Lab to build an alternative: models you customize with your data, then steer through more humanlike interaction. The result, she says, will be to extend human agency, rather than handing it off to machines.

To pursue this alternate vision, Thinking Machines has raised $2 billion—the largest seed-funding round in history—and in March inked a deal for Nvidia to provide the next-generation chips needed to support its models. "If humans want to delegate everything in their lives to AIs … there will be options. But if they don't want that, they shouldn't feel like [they] have no choice," Murati says.

But most may not get to decide. In a competitive market, if autonomous systems outperform human-AI teams, people might have no choice about whether they're replaced. Murati expects that might happen in math and coding, but counters that many domains rely on "human participation, on the messiness of the real world."

The founder and former OpenAI executive has witnessed that messiness up close. During Sam Altman's brief ouster in 2023, Murati served as OpenAI's interim CEO, caught between the board that removed him, employees demanding his return, and Microsoft, the company's key partner.

Thinking Machines Lab has hit the ground running. Tinker, the startup's first product, which came out in October, lets users customize open-weight AI models more deeply than they could through prompting alone.

Meanwhile, the battle for talent has challenged the company. Several prominent researchers, including many on the founding team, have departed for rivals. Murati says success isn't measured by how much of the original team remains, but by what the company delivers.

In July, the startup released its first model, Inkling. While the company does not claim it is the strongest model overall, it describes Inkling as a broad, balanced generalist designed for customization.

> *'WHAT [MACHINES] THINK ABOUT SHOULD STILL BE UP TO US.'*
>
> **MIRA MURATI**

To Murati, tailoring models around people's knowledge will expand their agency rather than replace them. But the more completely those systems absorb people's expertise, the more capable they may become at automating them. Her answer is to keep people continuously involved in shaping what the systems do. Thinking Machines previewed "interaction models" in May that, rather than alternating between listening and speaking, can continue processing while a person talks, much like a human does. Murati says this is a first step toward increasing the richness between people and machines, which she believes is key to keeping us involved in shaping what AI does.

"We have machines that can think; they already exist today," she says. "But what they think about should still be up to us." —HARRY BOOTH

AYOUNG KIM
Artist

Kim uses AI, CGI, and gaming technologies in her art. Her multimedia work, *Delivery Dancer Codex,* arrived at New York's MOMA PS1 last fall.

JOSH PARKER
Head of sustainability Nvidia

An engineer and lawyer by training, Parker is shaping sustainability strategy and public-policy initiatives at the chipmaking giant.

VERONYKA GIMENES
Co-founder Código Não Binário

Gimenes created an open-source AI model to detect and analyze anti-LGBTQIA+ hate speech, documenting its prevalence on social media in Brazil.

HANK GREEN
YouTuber

Green explains AI to his audience of 3.2 million YouTube subscribers, offering wide-ranging, nuanced takes on the emerging technology.

DAVID AUTOR
Professor of economics MIT

Autor's research focuses on how AI will impact the future of work and the economy.

OWAIN EVANS
Director Truthful AI

Through his small Berkeley, Calif., nonprofit, Evans is leading research to better understand the unexpected nature of AI models.

KARINE PERSET
Deputy head of AI and emerging digital technologies division OECD

Perset helps governments manage the opportunities and challenges of AI and other emerging technologies.

FEI-FEI LI
Co-director Stanford HAI & CEO World Labs††

World Labs released its first commercial offering in November. It's a step forward in building virtual worlds, letting users conjure 3D environments from text, image, or video prompts.

ILYA SUTSKEVER
Co-founder and chief scientist
Safe Superintelligence

Sutskever has hinted he's working on solving fundamental limitations of current AI systems. In July Nvidia invested $5 billion in his startup.

SANMI KOYEJO
Co-founder Virtue AI

Stanford professor Koyejo announced in June his security platform Virtue AI's team would join Meta to build "secure, trustworthy" AI agents. He's also president of affinity group Black in AI.

EMIL MICHAEL
CTO Department of Defense

Michael led the Pentagon's negotiations with Anthropic over military AI safety guardrails, shaping the Trump Administration's dispute with the AI company.

CHELSEA FINN
Co-founder Physical Intelligence

Stanford professor Finn designs foundation models to train robots, aiming to make a model that can do "any task in any environment on any robot." The startup raised $600 million in November.

CHAD EDWARDS
Co-founder and CEO CuspAI

Edwards' startup uses AI to accelerate material design, for example by using the technology to narrow down possible structures for a molecule that could help remove PFAS from water supplies.

BETH BARNES
Founder and CEO METR

Barnes leads viral research on AI and its impacts. One project charts the growing complexity of tasks AI models can complete, measured by how long they would take a human to perform.

ANDY MASLEY
Researcher and writer

AI's water usage is prominent in conversations about the technology's harms, but the numbers cited are often misleading or wrong. A former high school physics teacher, Masley is correcting those inaccuracies, crunching the numbers to provide a more accurate picture.

DARÍO GIL
Under Secretary for Science
U.S. Department of Energy

Gil leads the federal initiative to accelerate scientific research with AI. Its first projects were selected in July.

ZHOU BOWEN
Director and chief scientist
Shanghai AI Laboratory

Zhou is leading the push for national safety standards on AI in China, chairing a new working group to shape them.

NEWTON CAMPBELL JR.
Senior AI researcher NASA OCIO

Campbell applies AI to solve global challenges like geospatial AI for conservation, disaster alerts and early warnings, and space exploration.

RAVI KUMAR S
CEO Cognizant

Kumar is helping drive business adoption of AI, as well as conversation about how policy, like tax systems, can adapt to the AI economy.

MARIAN CROAK
VP, responsible AI and human centered technology Google*

Engineer Croak is a pioneer in voice-over-internet technology and leads research on responsible AI at Google.

YANN LECUN
Executive chairman
Advanced Machine Intelligence

LeCun has raised over $1 billion to build AI that understands the physical world.

ALEX RIVES
Head of science Chan Zuckerberg Initiative

At CZI's Biohub, Rives leads the team that used AI tool ESMFold2 to predict the structures of a billion proteins.

DANIELA RUS
Director MIT CSAIL

A leading researcher on the intersection of robotics and AI, Rus co-founded LiquidAI, which develops nature-inspired and energy-efficient AI models.

MURATI: THINKING MACHINES LAB; GREEN: TOMMY MARTINO—AP; SUTSKEVER: COURTESY OF SAFE SUPERINTELLIGENCE INC.; LECUN: AMI LABS

* TIME HAS A TECHNOLOGY PARTNERSHIP OR AGREEMENT WITH THIS COMPANY
† INVESTORS IN THIS COMPANY INCLUDE SALESFORCE, WHERE TIME OWNER AND CO-CHAIR MARC BENIOFF IS CEO
‡ INVESTORS IN THIS COMPANY INCLUDE TIME OWNER AND CO-CHAIR MARC BENIOFF

‘We are at the frontier, and it’s our duty to be honest about what we see.’

—JACK CLARK
Co-founder and head of public benefit, Anthropic

‘I would love for us to learn how to use artificial intelligence… to solve some of the world’s toughest sustainable-development problems.’

—NEWTON CAMPBELL JR.
Senior AI researcher, NASA OCIO

‘I think we’re in maybe the third inning of this revolution. We’re at the beginning.’

—SARAH GUO
Founder, Conviction

‘When we’re part of the ecosystem, we can look at these things from a lived experience. We won’t completely eliminate bias, but we can mitigate it.’

—ANGLE BUSH
Founder, Black Women in Artificial Intelligence

‘Of course I want to do AGI. This is the only meaningful thing to do over the next 10 years.’

—YANG ZHILIN
Co-founder and CEO, Moonshot AI

‘Over the next decade we can see a path where this could be a trillion-dollar business for Amazon.’

—MATT GARMAN
CEO, Amazon Web Services

‘I really see us as storytellers. We are telling stories of what has happened to people.’

—MEETALI JAIN
Executive director, Tech Justice Law

‘Private companies can’t be the only ones deciding how this technology is going to be developed and deployed. The people need to get involved.’

—JOSEPH GORDON-LEVITT
Co-founder, Creators Coalition on AI, and U.N. Global Advocate for Human-Centric Digital Governance

‘Feels like this is a time when decades truly happen in years.’

—MICHAEL TRUELL
Co-founder and CEO, Cursor

CLARK: COURTESY OF ANTHROPIC; CAMPBELL: AUSTRALIAN REMOTE OPERATIONS FOR SPACE AND EARTH; GUO: COURTESY OF CONVICTION; GARMAN: JOSH EDELSON—AWS; YANG: FUTURE PUBLISHING—GETTY IMAGES; JAIN: EMILE JANSEN; TRUELL: ANDRIA LO

Time Off

THE UNDERSEEN AND OVERLOOKED

BY JUDY BERMAN

Great 21st century TV that slipped through the cracks

INSIDE

PHOTO-ILLUSTRATION BY NEIL JAMIESON FOR TIME

How TIME's TV critic chose the most underseen shows

BEFORE THE 21ST CENTURY, TV COULD BE SORTED into three categories: hits, flops, and cult classics. Hits that touched a societal nerve—*The Twilight Zone,* Norman Lear sitcoms—earned a place in our collective memory. Flops were soon forgotten, and usually deserved it. Cult classics like *My So-Called Life* and *Dark Shadows* varied in popularity during their runs but ultimately found the niche audiences that preserved their legacies. There just wasn't enough programming, pre-Netflix and certainly pre-cable, for many great, nationally broadcast shows to fly under the radar.

But the golden age of cable that dawned in the late 1990s and streaming's early-2010s rise multiplied the number of titles platforms were pumping out. In 2022, FX's research team counted a record 599 original scripted series—a greater than threefold increase since it began keeping track 20 years earlier. During that time, it's become possible for a brilliant series to get buried under an avalanche of content that boasts bigger names, heftier budgets, and more familiar IP. Sometimes the show is barely promoted. Other times, the platform is obscure. Recently, the streaming landscape's contraction has led to platforms dumping titles that underperform.

So we beat on, critics against the current of media consolidation, borne back ceaselessly into TV's underappreciated recent past. This list is my small effort to stop the undertow of history from sucking up my favorite underseen shows from this uniquely abundant—and turbulent—century.

As for how I decided which shows qualified as underappreciated, well, I went in having accepted that there's no such thing as objectivity in criticism. I did set some ground rules: A series had to have premiered after the turn of the millennium. I avoided obvious cult classics because they are already duly appreciated by the people predisposed to love them. To narrow the options, I gave myself priorities. Early shows from talents who went on to widespread renown got preference, as did underexposed perspectives and anything that stretched or experimented with the episodic medium.

In the final accounting, I tried to do what I imagine the people behind these wonderfully strange, undersung shows must've done in making them: I trusted my intuition, embraced subjectivity, and let myself break some rules. Whether or not you agree with every entry, I hope you discover something on this list that inspires you to do the same.

See the full list at ti.me/50shows

PREVIOUS PAGE: SOURCE IMAGES: (DANNY FELD—TNT; MARK JOHNSON—E4/CHANNEL 4; PATRICK MCELHENNEY—FX; JACKSON LEE DAVIS—AMC; TINA ROWDEN—SUNDANCE CHANNEL; 20TH CENTURY FOX)—EVERETT; (RICHARD CARTWRIGHT; ADAM TAYLOR)—DISNEY/GETTY IMAGES; BBC/STUDIO LAMBERT MEDIA; BETH DUBBER—HBO MAX; MARY CYBULSKI—CINEMAX; BETH DUBBER—NETFLIX; WGN

Undeclared (2001–2002)

Every comedy fan knows Judd Apatow and Paul Feig broke out with the cult-classic teen dramedy *Freaks and Geeks.* What many might not recall is that Apatow followed it up, in 2001, with another **brilliant but quickly canceled series about awkward youth.** Set at a Y2K-era college, Fox's *Undeclared* chronicles recovering geek Steven Karp (Jay Baruchel) in his quest to become cool and get laid. Alternately helping and hurting him are his suitemates—a quippy Seth Rogen, a wild-card weirdo (Timm Sharp), and Charlie Hunnam as a studly British theater major. The object of our hero's affection (Carla Gallo) is chronically ambivalent about her clingy hometown boyfriend (Jason Segel). The guest cast unites big names (Adam Sandler, Will Ferrell, Ben Stiller) with up-and-coming funny people of the era (Amy Poehler, Kevin Hart, Mike White). And while most of the central characters are libidinous college guys, Apatow writes them with the same sweetness and vulnerability that would come to define his blockbuster boy-men.

Men of a Certain Age (2009–2011)

Won't somebody think of the middle-aged men? I kid, I kid. **The friendships and inner lives of grown men are mostly ignored by Hollywood.** So I'd like to think that this sensitive dramedy about three best buddies pushing 50 reached a smaller audience than it deserved not because of its gentle subject matter, but because it was hidden away in the procedural wasteland of late-aughts TNT. Created by Ray Romano and Mike Royce, *Men of a Certain Age* finds each of its flawed but likable leads in the midst of a midlife crisis. Romano's default wry, hangdog demeanor suits his character, Joe, a father of two who's separated from his wife (Penelope Ann Miller) and living


Undeclared

in a depressing motel. Terry (Scott Bakula) can feel himself aging out of his womanizing years as well as his acting career. The standout, though, is the late Andre Braugher as Owen, a diabetic who works a job he hates, selling cars at his hypercompetitive dad's (Richard Gant) dealership, to support the wife (LisaGay Hamilton) and kids he loves. His tenderness sets the tone of the show. Some of the best scenes are just Owen, Joe, and Terry sharing a meal at the diner, talking openly—and good-naturedly busting one another's chops—about whatever is going on in their lives.

Terriers (2010)

With apologies to Matthew McConaughey and Woody Harrelson, **Donal Logue and Michael Raymond-James had the best buddy-detective chemistry of the 2010s** as a pair of unlicensed PIs rambling around San Diego, subsisting on the smallest of small-time jobs. Logue's Hank is an ex-cop who ruined his career and marriage with alcohol and is now in recovery. Raymond-James' Britt is a mostly reformed thief. Witty without being showy (Britt: "Can I say it to him . . . 'You got served'?" Hank: "It's 'You've been served,' OK? It's a restraining order, not an urban dance competition"), their banter tied together colorful cases of the week with a sprawling investigation into local corruption. But what really set the FX show apart was its fascination with how the partners' work digging up dirty secrets coexists with their own messy lives. Sure, it's possible to find out what the people we love and trust are hiding from us. But how much do we really want to know?

Don't Trust the B---- in Apartment 23 (2012–2013)

In the mid-2000s, a horde of millennial women raised on *Friends* and *Sex and the City* descended on New York City to seize the glamorous careers, palatial downtown apartments, and active social and romantic lives they'd been promised. Instead, skyrocketing rents forced them into outer-borough closets and a financial crisis left them hustling. TV caught on with a new generation of single-women-in-the-city comedies: *Girls, Broad City.* One of the best was this less-heralded take. Created by Nahnatchka Khan, the ABC series cast Dreama Walker as June, a wide-eyed Midwesterner who moves to the city for a fancy job, only to find her employer in apocalypse mode. She's bamboozled into sharing an apartment with Chloe (Krysten Ritter), a party-girl con artist. **Ritter is the main draw, radiating a reckless charm that makes Chloe lovable despite her twistedness.** Walker's performance as a basic yet tenacious ingenue makes them ideal foils. Eric André and the late James Van Der Beek (playing a sleazy version of himself) complete the dream ensemble.

'WHEN IT GOT CANCELED, I GOT SO ANGRY THAT I SENT A GOOD REVIEW OF IT TO THE HEAD OF FOX. I PUT A NOTE ON IT THAT WAS VERY INAPPROPRIATE.'

I'D JUST LIKE TO APOLOGIZE TO THAT EXECUTIVE FOR MY FOUL MOUTH.'

Judd Apatow on the end of *Undeclared*

Bunheads (2012–2013)

From *Gilmore Girls* to *Étoile,* ballet keeps showing up in the work of former dancer Amy Sherman-Palladino. **The creator's most pleasurable homage to the art form is this ABC Family dramedy.** A lot happens in the pilot: Tired of Vegas, ballerina turned showgirl Michelle (Sutton Foster) finally agrees to marry Hubbell (Alan Ruck), a suitor who doesn't exactly set her heart aflame. They move to the small California town where his disapproving mom Fanny


Bunheads

(Kelly Bishop) runs a dance school. But just when Michelle is warming up to Hubbell, he dies in a car crash. It's a harsh opening to a show that quickly shifts into a lighter gear, as Michelle rediscovers ballet and cultivates a relationship with her mother-in-law while teaching Fanny's students. Along with Sherman-Palladino's signature quippy dialogue and complex women, the series distinguished itself by putting lots of dancing onscreen.

Rectify (2013–2016)

Daniel Holden (Aden Young), who'd been on death row for 19 years, since he confessed

UNDECLARED: 20TH CENTURY FOX FILM CORP/EVERETT; MEN OF A CERTAIN AGE: DANNY FELD—TNT/EVERETT COLLECTION; BUNHEADS: CARIN BAER—DISNEY GENERAL ENTERTAINMENT CONTENT/GETTY IMAGES


Lady Dynamite

under duress to the rape and murder of his high school girlfriend, is set free after DNA evidence fails to implicate him. He is liberated, for now, but not quite vindicated. And there's nowhere for him to go except his small Georgia hometown, where he is presumed guilty. While some of his relatives have always believed in his innocence, others aren't convinced. Creator Ray McKinnon keeps viewers in doubt as well. Daniel is a strange, discomfiting person, but his creepiness could be a side effect of a long, lonely, undeserved incarceration. ***Rectify* requires—and rewards—patience,** with a knot of stories that scrutinize how our society rights not just the wrongs people do to each other, but also the suffering the systems we use to maintain order inflict upon individuals.

The Knick (2014–2015)

You would think that if Steven Soderbergh directed a medical drama that cast Clive Owen as a brilliant surgeon high on his own cocaine supply at an early-20th century New York City hospital, people would pay attention. Add storylines that examine public health, political corruption, and economic injustice—not to mention excellent prefame performances from André Holland, Eve Hewson, and Colman Domingo—and you might presume its reputation would only have grown over the years. So why do so many people still have no idea *The Knick* exists? Probably because it aired on Cinemax when it was trying to shake its seedy "Skinemax" reputation. Happily, because the two-season series from creators Jack Amiel and Michael Begler turned out even better than the sum of its parts, it has since been beamed up to Warner streaming mother ship HBO Max. Watch it for **an *Oppenheimer*-adjacent accounting of the moral and psychological costs of scientific progress**. (*Don't* watch it, though, if you're squeamish about surgery.)

> *'IT LIT A FIRE UNDER ME TO HAVE THIS DREAM COME TRUE, WHERE I FELT LIKE I HAD TO MEET THE MOMENT. NOW THAT I KNOW WHAT IT'S LIKE FOR A DREAM TO COME TRUE, I GO: "OK. I GOT IT. I DON'T NEED THAT AGAIN."'*
>
> Maria Bamford on making *Lady Dynamite*

Chewing Gum (2015–2017)

It might have seemed to many American viewers that Michaela Coel came out of nowhere as the creator and star of HBO tour de force *I May Destroy You*. But she'd made her name five years earlier in the U.K. with this comedy. Much zanier than *Destroy*, it casts Coel as Tracey, a sheltered 24-year-old virgin who lives in East London public housing, works at a convenience store, and is out of patience with her suspiciously chaste boyfriend. Tracey is, to put it indelicately—something this raunchy show loves to do—explosively horny. *Chewing Gum* traces its awkward lead's odyssey of sexual discovery. Coel has never been afraid to push buttons; this is **comedy that's bound to make you cringe and squirm and confront life's rich pageant of sexuality in all its strange and uncomfortable extremes.** But it's also one of the funniest shows of the 2010s, thanks in large part to Coel's fearlessly physical performance.

Lady Dynamite (2015–2017)

Maria Bamford was living the stand-up comic's dream. Then a nervous breakdown landed her in a psych ward. How is a person supposed to come back from a crisis like that while returning to an industry that could make anyone lose their mind? That is the central dilemma of this Netflix comedy in which Bamford plays a version of herself. Maybe this sounds depressing. Actually, it's **fast, bright, weird, dizzyingly meta, packed with A-list guest stars, and skillful in its juxtaposition of dark subject matter and bouncy style.** Pugs talk. The fourth wall is smashed to smithereens. *Lady Dynamite* is always moving—initially between Maria's chaotic past and fragile present, before the second season adds a future timeline where she's making a streaming show called *Maria Bamford Is Nuts!* Bamford's offbeat perspective has never appealed to everyone, but she's known as a comedian's


Chewing Gum

comedian for a reason. When you've heard every joke out there, you know how precious a true original can be.

Underground (2016–2017)

The best show to come out of WGN America's brief foray into original scripted programming was this historical thriller set in the tense years preceding the Civil War. At its center are enslaved people planning to escape from a plantation. But creators Misha Green and Joe Pokaski broaden its scope to examine many aspects of slavery and the Underground Railroad. A superb cast (Jurnee Smollett, Aldis Hodge, Christopher Meloni) portrays white abolitionists, free Black people, and devious bounty hunters. Unlike Barry Jenkins' auteurist *The Underground Railroad,* this is **a fast-paced, plot-driven show, full of action and romance.** (Some might find the amount of graphic, racist violence hard to stomach.) At the same time, it's perceptive about the far-reaching moral implications of slavery, which made all of white America complicit and fueled bigotry even among those who opposed it.


Lodge 49

Lodge 49 (2018–2019)

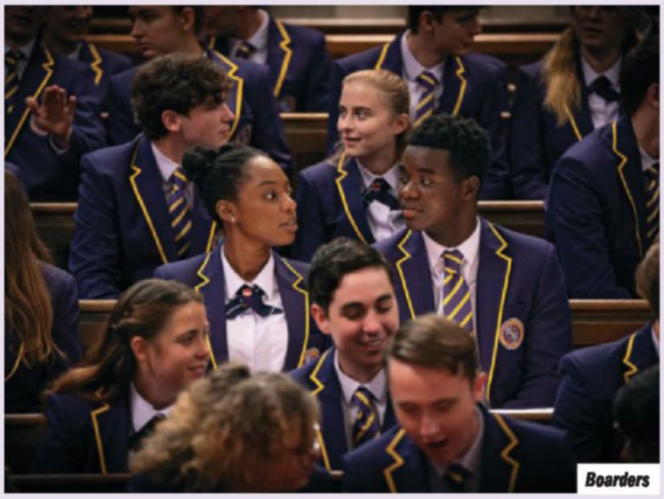
"We don't have to live like this," says Sean "Dud" Dudley in the premiere of *Lodge 49.* In the broadest sense, Dud, a gregarious but flailing ex-surfer played by Wyatt Russell, is talking about lives made meager by financial hardship, lonely striving, transactional relationships, meaningless jobs that overwork and underpay. Creator Jim Gavin critiques all of these discontents of 21st century American capitalism in this beachy fable. Inspired, as the number in its title suggests, by the work of Thomas Pynchon, ***Lodge 49* shares its radical politics, philosophical ambition, gallows humor, and shaggy California vibe with his countercultural classics.** But there's a touch more hope in this hazy vision, which gives Dud a real, superior alternative to his unmoored state in the form of a fraternal organization that provides both spiritual nourishment and fellowship unmediated by materialism.

Made for Love (2021–2022)

What's it like to marry a top-tier tech mogul, the kind of guy who not only has billions in the bank, but also possesses enough personal data or supply-chain control to exert godlike power over the average person? This question animated Alissa Nutting's 2017 novel *Made for Love* and this 2021 sci-fi black comedy series that she co-created for HBO Max. Cristin Milioti was in her sweet spot as lovable mess Hazel, who left college a decade ago to marry tech titan Byron Gogol (Billy Magnussen), a control-freak inventor whose toxic quirks evoke many real-world counterparts. She's spent those years effectively accepting that she's trapped in the holographically shape-shifting compound where her husband lives and works. But when she finally snaps and escapes, she learns that Byron has implanted a device in her brain that gives him access to her consciousness. With nowhere else to go, she winds up at the shabby home of her estranged dad Herbert (Ray Romano, rounding out a fantastic central trio). Of course, because Byron is a psycho with terrifying surveillance capabilities and unlimited resources, Hazel has an easier time getting free than staying free. **Finding humor in tech anxiety, economic polarization, and the search for love in a lonely era,** *Made for Love* handled its themes a bit too breezily at first. By its second and final season, however, it had evolved into just as dark, audacious, and profound a satire as Nutting's brilliant book. And it grows more prescient every year.

Boarders (2024–2026)

Tubi is the closest digital equivalent to browsing the racks of VHS tapes for rent at a supermarket in the late 20th century. There's plenty of vintage comedy and horror, art-house obscurities, the so-bad-it's-good original movies that are today's straight-to-video schlock. So you could be forgiven for failing to notice that Tubi has also exclusively acquired some great current TV. The best of these titles is *Boarders,* a BBC Three teen drama set at an elite British boarding school. After the privileged misbehavior of a few rich white students causes a scandal, St. Gilbert's recruits five gifted Black scholarship students to improve its public image. We see the broken institution—and the rigid socioeconomic hierarchy it helps uphold—through the eyes of these teens, who know that they're being used and that many in the community don't want them there, but are nonetheless trying to make the best of a valuable opportunity. Yet creator Daniel Lawrence Taylor ensures that systemic critique never overshadows the tender, funny coming-of-age elements that make the show stand out in an overcrowded genre. **Each main character transcends simplistic *Breakfast Club* archetypes.** Watching the young cast feels like getting a sneak preview of British Gen Z actors destined to become international stars.


Boarders

LADY DYNAMITE: BETH DUBBER—NETFLIX; CHEWING GUM: MARK JOHNSON—E4/CHANNEL 4/EVERETT; LODGE 49: JACKSON LEE DAVIS—AMC/EVERETT; BOARDERS: COURTESY OF BBC/STUDIO LAMBERT MEDIA

Willem Dafoe, caught between who he was and who he's become

MOVIES

A long-forgotten poet gets a second shot

BY STEPHANIE ZACHAREK

HOW MANY LIVES CAN BE PACKED INTO ONE? If we live long enough, most of us reinvent ourselves several times over, by switching careers, changing partners, having children, moving to a new place. What constitutes the essence of us, even when we can no longer identify ourselves as the thing we used to be?

That's one of the questions Kent Jones' intimate, wry little picture *Late Fame*—adapted from a long-lost 1895 novella by Arthur Schnitzler—tangles with. Willem Dafoe plays Ed Saxberger, a 70-ish New York City postal worker who published a book of poetry decades ago but has now been largely forgotten. By day he sorts letters; in the evenings he wanders down to his local watering hole to hang out with his geezer pals, guys with everyday jobs just like his. To them, there's nothing fancy or special about him. He's not just a regular, he's regular.

Saxberger isn't sad about that; it's just the texture of his life. But one day, he's alerted to the presence of a wiry, well-dressed, nervous-looking young man who's been hanging around his apartment building. Wilson Meyers (Edmund Donovan) proceeds to gush over Saxberger's single book, explaining that he's part of "an artistic community" of poets and intellectuals—they call themselves the Enthusiasm Society and refer to one another by last names only—who gather occasionally at a local speakeasy. Would he do them the honor of joining them sometime? Though Saxberger at first demurs, he's worn down by Meyers' flattery.

Saxberger is initially amused by this bunch of aimless and obviously well-off guys in their 20s, fellows who clearly don't have to work for a living. But his curiosity is truly piqued by the group's sole woman member. Gloria (Greta Lee), an actor, seems to have dropped in from another century. Her sentences tumble out in breathy, peacock-feather bouquets; she favors swirling capes and flirtatious, oddball cloches. She invites Saxberger to one of her intimate cabaret performances—she slinks through "Surabaya Johnny" with molten eroticism—and he watches in awe. She's both unbearable and captivating, and Saxberger is a goner. He also wonders, years after having given up writing, if he may still be a poet after all.

***Late Fame* is deeply observant about what it takes to be an artist**

***LATE FAME* IS** Jones' second fiction feature—his debut was the gentle-spirited 2018 drama *Diane,* starring Mary Kay Place—and though it's deeply observant about what it takes, and what it costs, to be an artist, it's also brushed with the light touch of comedy. Dafoe is terrific as a guy who's made peace with what his life has become, only to realize that what he used to be is also part of his present. A scene in which he tries to introduce his bar pals to his old poetry cuts deep: they laugh because they can't see him as anything but part of their ordinary, working-class gang. Saxberger's face, a map of scarred-over disappointments, shows him reckoning with the brutal truth that these people he cares about can never truly understand him.

But Lee's performance may be the secret key to *Late Fame.* Gloria is a user, a poseur extraordinaire. Yet she's the only member of the Enthusiasm Society who has ever taken a risk; she's also, clearly, the only one with any true artistic gift. Lee's Gloria shifts seamlessly from hypertheatrical creation to fragile human being. And though the other members of the group desire her, only Saxberger sees the truth of her. *Late Fame* is all about the bitter, beautiful reality that no one is ever who they used to be. How could we be, if we're doing the work of *becoming?* Is Saxberger still a poet, even when he finds it impossible to write new verse? What he and only he sees in Gloria is a new kind of poem, written on the wind if not on paper, but real even so. ◻

MOVIES

That summer feeling, through the eyes of a chef-to-be

BEFORE ANTHONY BOURDAIN WAS A CHARISmatic, adventurous TV personality—and even before he'd become a best-selling writer, with his fantastically disreputable 2000 memoir *Kitchen Confidential*—he was a bright but annoying kid enrolled at Vassar and, as he himself said, "badly in need of a good ass-kicking." Matt Johnson's exhilarating and tender film *Tony* is only sort of a biopic: it covers just a few months of Bourdain's life, the summer of 1975, which he spent sweating away in the kitchen of a small, bustling restaurant in Provincetown, Mass. But it's a captivating origin story, detailing the bumpy rise of a ne'er-do-well who made good, even as he lied, cheated, and partied his way through one gloriously wayward, depraved summer.

Dominic Sessa—who gave the soulful, bratty performance at the center of Alexander Payne's *The Holdovers*—stars as 19-year-old Anthony, only back in 1975, he preferred the breezier, shortened version of his name. After failing to get the writer's fellowship he'd applied for, he leaves his family's home in New Jersey and heads to Provincetown, in pursuit of the girl he has a crush on, Emilia Jones' Nancy. Distraught at learning that she already has a boyfriend, he gets drunk at—and is ejected from—a local eatery. But the owner who'd thrown him out—known only as Chef, and played, in a marvelous, multilayered performance by Antonio Banderas—takes pity on him after finding him passed out in the street. Chef allows young Tony to spend a night on his porch, sleeping in a rope hammock. One night stretches out to a whole summer. And for some reason only he can intuit, Chef gives the young rapscallion a job in the kitchen, even though Tony has no restaurant experience and, perhaps worse yet, no kitchen safety training.

THIS IS HOW Tony falls for the restaurant life: the chaos of the kitchen; the unruly, often drug-addicted personalities; the power to put together meals that people can enjoy with friends, and maybe even remember long after the fact. Sessa is perfect as the swain Bourdain: he's got that just-fallen-out-of-bed look—perhaps because he literally has just fallen out of bed, or, more accurately, a hammock—but he's also hungry and inquisitive in a touching way. At first charged with the lowly task of dishwashing, he furtively watches his kitchen colleagues—including Leo Woodall's Sal, who becomes both a friend and a terrible influence—as they expertly shuck oysters, or slam the lever on a heavy-duty potato slicer as if it were the arm of a slot machine, usually while talking trash about one another. Suddenly, he knows where he belongs. Banderas' Chef spots Tony's spark of potential before he does: One of the cardinal rules he's instituted for his employees is that they must never be even 15 minutes late. To that end, every workday morning he rouses Tony from the snoozy coziness of his hammock with a bucket of water. He doesn't want this kid to fail, and though Tony has loving, albeit perhaps too permissive, parents (they're played by Rich Sommer and Dagmara Dominczyk), this is just the kick in the pants he needs.

Johnson—perhaps best known for 2023's *BlackBerry,* about the rise of the once ubiquitous pocket device—shapes this material with both breeziness and a kind of tough-love compassion, and the track list he's assembled summons the spirit of 1975 like a ghost. Whether you were around for that era or not, if Jonathan Richman and the Modern Lovers' wistful ode to imaginary love "Girlfriend" doesn't instantly transport you, the Brothers Johnson's "Strawberry Letter 23" will. Though *Tony* covers one brief era in the life of an eventually famous person, its true superpower is that it conjures the vibe of lazy or crazy summers we may have experienced at some point in our own lives. To quote another Jonathan Richman song: "That summer feeling's gonna haunt you one day in your life." —S.Z.

Dominic Sessa, left, sizzles as a young Anthony Bourdain

LATE FAME: ATSUSHI NISHIJIMA; TONY: SEACIA PAVAO

Paula Kerger The president and CEO of PBS on losing federal funding, the future of public media, and who "viewers like you" really are

You've talked before about how some people don't understand what PBS is. What do people get wrong? Our stations are all locally owned, locally operated, locally governed. I don't tell anyone what to do, but the whole broadcast infrastructure is all managed by PBS. Stations contribute their content, so that it is still very much bottom up, but the glue that pulls it all together is PBS.

We're speaking about a year after Congress rescinded more than $1 billion in previously appropriated funding for public media. Can you talk me through where things stand today with federal funding? Last year was quite a year, and we're still navigating through quite a few things. We had the Executive Order that was going to make it illegal for any federal money to come to PBS and NPR. We won that suit. [An] Executive Order took out a program that we have managed for 30 years, which has funded our kids' content. After the Executive Order, that money was gone. Then we lost the House vote, and money that had been advance appropriated for 2026 and 2027. PBS has been working pretty deliberately to make sure that the public is aware that the funding is gone. In the time since the rescission, we've picked up more than a million new members. It has not solved all of our problems, but we're in at least a stable position right now.

The current Administration has turned its attention to some foundations as well. Is that a consideration when you're thinking about which foundations you'll accept funding from? What I do pay attention to is not whether I'll take money from this foundation or that foundation for political reasons. What I do pay attention to is that we have a mix of donors that represent a range of interests, perspectives, geography, and so forth. I think there was a fallacy in the arguments around us and our funding that somehow we were left-leaning, or that we were funded by left-leaning organizations. Look at Ken Burns' recent series on the American Revolution. If you look at those funders, particularly the larger ones, you see people across the political spectrum. That's how it should be. We want all people engaged and involved. We're a public media service for the country, and we need to reflect the country in that way.

In terms of demographics, who are your audiences at PBS?

Depends on what you're watching. We have a very big audience under 5. The *Frontline* broadcast audience is well over 60. I'd say the one commonality for a PBS viewer is that [it's] people that are curious about the world, just want to learn more.

What sorts of conversations are you having with members of Congress? Some, I think, were surprised when we were defunded that it actually affected their local station.

This isn't the first time that PBS has faced these sorts of challenges. To your mind, why do you think PBS has become a target in this moment? Well, I think media in general has been a target. I frankly think that's part of why so many people have also stepped up. I think a lot of people are very concerned about the impact. It's a challenging time for media anyway because of the changes in how people are consuming content.

Where would you like to see PBS over the next 10 or 15 years? I feel like we have had a role in the life of people and families and communities across this country, and I am deeply committed to making sure that we continue to meet the needs of people that clearly will evolve over the next 10, 15 years. I think how we connect to people will continue to change. I think the power of a story well told is extraordinary, and so, however that story [is told], I want to make sure that we're there to do that.

—AYESHA JAVED

RAHOUL GHOSE

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