

In Memoriam: Susumu Tonegawa, Nobel winner

Tonegawa was the sole recipient of the Nobel Prize in Physiology or Medicine in 1987

By Samuel Yuan
NEWS EDITOR

Susumu Tonegawa, an MIT Professor of Biology and Neuroscience and founding director of the Picower Institute, died on July 11 at his home in California. He was 86.

A molecular biologist who reshaped immunology and, later, neuroscience, Tonegawa won the Nobel Prize in Physiology or Medicine in 1987 for his work explaining how the immune system can generate an almost limitless diversity of antibodies from a relatively tiny set of genes. Professor Tonegawa had served on MIT's faculty for more than four decades.

Susumu Tonegawa was born in Nagoya, Japan on September 5, 1939, the second of four children. His father worked as an engineer at a textile company, and as a child, Tonegawa moved from village to village in rural Japan following his father.

When Tonegawa reached adolescence, his parents sent him to a prestigious high school in Tokyo, where he developed an interest in chemistry. After failing the entrance exam once, he was admitted to Kyoto University to study chemistry. In senior year, after having read papers by François Jacob and Jacques Monod on the operon theory, he became fascinated by molecular biology, and soon decided to pursue graduate studies in the field.

Initially, he intended to pursue a Ph.D. in Japan, and was admitted to Professor Itaru Watanabe's laboratory at Kyoto. But Watanabe advised Tonegawa that studying in America instead was advantageous, so Tonegawa eventually began his doctorate in molecular biology at the University of California, San Diego in Professor Masaki Hayashi's lab, which he completed in 1968.

He then moved across the street for his postdoc at the Salk Institute in the laboratory of Dr. Renato Dulbecco, later a winner of the 1975 Nobel Prize in Physiology or Medicine.

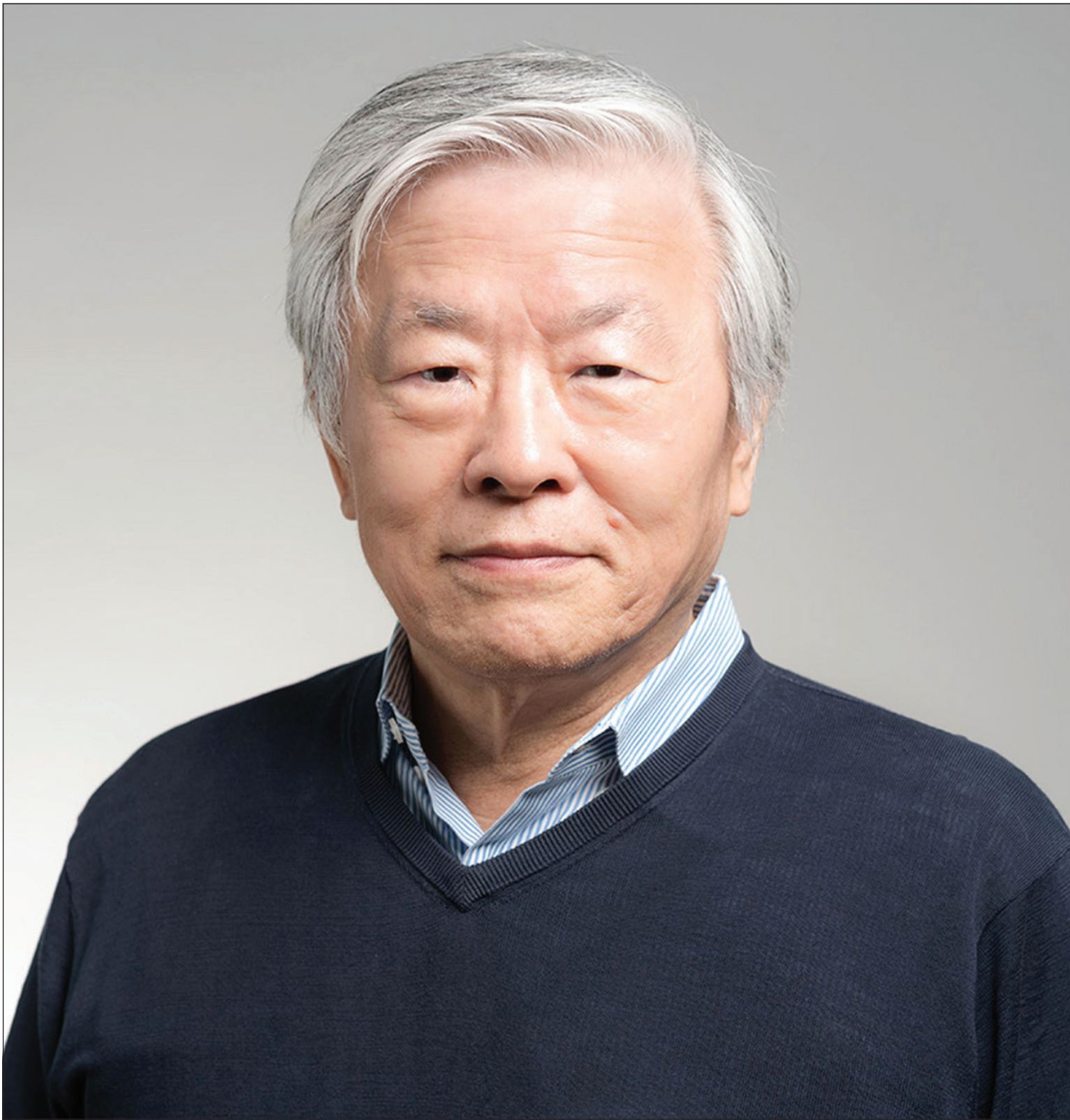


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Susumu Tonegawa, MIT Professor of Biology and Neuroscience and founding director of the Picower Institute, died on Saturday, July 11, 2026.

8/6 IN SHORT

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In 1970, when Tonegawa's U.S. visa was set to expire, he had to leave the country for two years. On Dulbecco's advice, he headed to Switzerland to join the newly formed Basel Institute for Immunology in 1971. The only problem was that as a molecular biologist, he knew very little about immunology.

Despite that, he immersed himself in the field and soon began applying new techniques from molecular biology, like recombinant DNA, into his work on immunology. He became fascinated with the longstanding mystery of antibody diversity, and his research at Basel finally cracked it.

He discovered that each antibody is not encoded by its own gene; instead, gene segments encoding

different parts of the antibody can be recombined in seemingly limitless ways. It was the work that won him the Nobel Prize and numerous other accolades before and after.

Since then, thanks in part to his work, immunological therapy has become one of the most powerful tools in modern medicine. And Tonegawa, having felt that the problem of antibody diversity was solved, pivoted from immunology to cancer research and, then, neuroscience.

Reflecting on his time in Switzerland in his Nobel Biographical, Tonegawa recalled that from 1974 to 1981, his research team "progressed with great speed" and had "a great deal of fun."

Seeking a new research environment and to return to the

United States, Tonegawa joined MIT's faculty in 1981 as a professor in what is now the Koch Institute for Integrative Cancer Research.

At MIT, Tonegawa first studied T-cells, a type of white blood cell. Later, he pivoted to neuroscience, and he was chosen as the founding director of MIT's Center for Learning and Memory in 1994, which became the Picower Institute in 2002.

He served as the director of the Picower Institute for Learning and Memory until the end of 2006, and his lab made significant contributions to memory research. In 2013, they published a Science article in which they report identifying "engrams," physical and biochemical traces in the brain that represent specific memories, in the hippo-

campus. As a result, they were able to implant mice with "fake memories" that the mice perceived to be real.

When asked about his research philosophy in a Picower Institute interview in 2022, Tonegawa said that he has always been driven solely by "curiosity and instinct."

"When I decided to become a scientist, my criteria of what to do was whether the scientific problem I got to solve was interesting or not. I didn't think about other things like: Could it be too risky? Can I really develop my career by venturing into a field I am not familiar with? That never occurred to me," Tonegawa said.

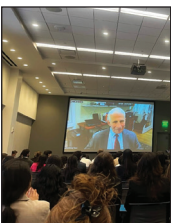
His ashes will be buried in Kyoto, Japan following a private funeral.

ABOUT SUSUMU TONEGAWA

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Success doesn't guarantee loyalty: How the Boston Celtics lost superstar Jaylen Brown

Despite winning a championship in 2024, the Celtics' repeated attempts to trade Finals MVP Jaylen Brown may have finally come at a cost

By Tei Kim

After blowing a 3-1 series lead to the Philadelphia 76ers in the 2026 NBA Playoffs, the Boston Celtics were expected to make minor adjustments to their roster centered around superstars Jaylen Brown and Jayson Tatum. The two had been arguably the most successful duo since 2017, appearing in five Eastern Conference finals and two NBA Finals, with one appearance being Boston's dominant 2024 championship run that resulted in Brown earning Finals MVP. As Tatum had recently returned from an Achilles tear, many fans and analysts believed that the team should run it back next season with a fully healthy roster.

Instead, the Celtics front office had different plans. On July 1, ESPN insider Shams Charania announced that the Celtics were trading Jaylen Brown to the 76ers for Paul George, two first-round picks, and two second-round picks. Fans were left in disbelief — not only did the team give up their homegrown talent who had blossomed into an All-NBA-level guard, they also traded him to one of the Celtics' biggest rivals for George, a 36-year-old point guard who has sustained several injuries since 2019. Historically, when a player of Brown's caliber is moved, the star is the one requesting the trade, prompting the organization to explore their options to maximize their return with players and draft assets. However, this situation is a lot more complex due to personal agendas and newly established salary cap rules clashing with each other.

It's no secret that the Celtics have shopped Brown in the past few years. Even after reaching the Finals in 2022, the Celtics heard that two-time Finals MVP Kevin Durant requested a trade and offered Brown in a package deal. After the trade fell through due to Brooklyn's extremely high asking price, Brown mended his relationship with the organization to make the Finals in 2024 and win Finals MVP, cementing himself amongst Celtics legends. But in the NBA, success does not guarantee loyalty.

In the summer of 2026, it was known across the league that former two-time MVP and Defensive Player of the Year Gi-

annis Antetokounmpo wanted out of the Milwaukee Bucks. The Celtics, yet again, pounced on the opportunity to trade for an elite-level talent by offering Jaylen Brown and two unprotected first-round picks. Compared to 2022, this deal felt like an all-or-nothing move from the front office. Brown had just spent the last year carrying a depleted roster to second in the East, earning All-NBA honors and MVP chants en route to his best individual season ever. This offer was a direct slap in the face: it established that the Celtics still viewed Jayson Tatum as the unquestioned number one option to build around.

The Bucks asked the Celtics to also include Hugo Gonzalez and Baylor Scheierman in the deal, but they were unwilling to part with their young prospects. The deal fell through again, and the Bucks eventually agreed to send Antetokounmpo to the Miami Heat, another fierce rival who stopped the Celtics' title runs in 2020 and 2023. Brown had every right to demand a trade.

He did not. But from the outside, it was clear that the Celtics had pushed things too far and fractured their relationship with one of their franchise cornerstones beyond repair.

The media reports began to spiral out of control. ESPN insider Bobby Marks reported that an anonymous source called Brown "the seventh-best player" on his own team based on analytics. Brown fired back on X, stating that no one has won more regular season and playoff games combined since he came into the league. With the relationship souring each day, the Celtics gave into the pressure and listened to trade offers from eight to team teams.

But the Celtics had shot themselves in the foot. Everyone knew that they were actively shopping Brown, which meant they had zero leverage in any negotiations. The Golden State Warriors' front office could not agree on whether Brown could lead the franchise post-Stephen Curry, showing that the "seventh-best player" comments had significantly damaged his reputation. The Celtics' initial asking price for the 76ers was Paul George, rookie phenom V.J.



PHOTO FROM KEITH ALLISON/WIKIMEDIA COMMONS (CC BY-SA 2.0 GENERIC)

Jaylen Brown goes for a layup against the Washington Wizards in Game 3 of the Eastern Conference Semifinals on May 5, 2017. Brown was recently traded to the Philadelphia 76ers in exchange for Paul George, two first-round picks, and two second-round picks.

Edgecombe, and four first-round picks, yet they ended up settling for significantly less.

Following the trade, President of Basketball Operations Brad Stevens and owner Bill Chisholm held a joint press conference. Stevens explained the trade from a financial flexibility standpoint: while the organization deeply appreciated Brown for his contributions, he would be eligible for a supermax contract worth 35% of the salary cap. With Jayson Tatum having secured a supermax contract through 2030, two players consuming 70% of the cap was no longer viable with the new second apron rules.

Before the current Collective Bargaining Agreement (CBA), teams that would spend more than the salary cap would simply have to pay the luxury tax. From 2015 to 2022, the Warriors paid the most luxury tax compared to any other team, keeping their core intact and winning four championships during that span. In their 2023-2024 campaign, the Celtics paid roughly \$41 million in luxury tax, allowing them to bring in key players Jrue Holiday

and Kristaps Porzingis en route to their championship.

By the 2024 offseason, the toughest restrictions of the new CBA kicked in, with teams exceeding the salary cap experiencing significant limitations in roster construction flexibility. The punishments for exceeding the second apron were especially harsh, as teams could no longer aggregate contracts in trades, trade first-round picks from seven years out, and faced even stricter rules the longer they were above the threshold. The Celtics had won a championship while flirting with this line — remaining there long term would be an entirely different problem.

The trade ultimately boiled down to two irreconcilable truths:

1) While the Celtics experienced tremendous success with their superstar duo, they also had to consider how they would survive with the new CBA. They had no choice but to protect the future of a franchise trapped in its own success, a team that became impossible to keep intact due to new financial regulations.

2) Jaylen Brown is one of the top-end talents in the current NBA both offensively and defensively, and is one of 34 legends that has earned Finals MVP. Despite finishing the best individual season of his career, he was treated more like a problem instead of a solution.

But numbers never tell the whole story. Brown's decade-long tenure in Boston will be remembered not only for the Celtics' historic 18th championship, but also for what he built off the court. Brown was not shy to use his platform to advocate for education, social justice, and economic opportunities instead of simply building a personal brand. As an MIT Media Lab Director's Fellow, he organized the Bridge Program as a collaboration between his Juice Foundation and the MIT Media Lab, exposing students from underrepresented communities to STEM, robotics, AI, and entrepreneurship. Whether or not the trade proves to be the right basketball decision, Brown leaves Boston with a lasting impact on the city beyond the final buzzer.

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Dr. Fauci headlines third annual American Lung Cancer Screening Initiative Summit

The summit brought together a community of health care professionals and aspiring students to fight lung cancer in the U.S.

By **Malakhi Beyah, Chloe Lee, Veronika Moroz, and Eric Wang**
EDITORS

On July 10, 2026, hundreds of young aspiring physicians gathered in the Joseph B. Martin Conference Center at Harvard Medical School, filling the hallways with excited chatter. Within a few hours, conference organizers had divided the students into small groups for a mentoring session where each stood captivated around an established medical professional. They spent the next hour firing off questions from “MD or MD PhD?” to “Do I have a chance at a medical career if I don’t know what I want to specialize in yet?” and trying to grasp how they could chart their own medical journeys.

The physicians were at the third annual American Lung Cancer Screening Initiative (ALSCI) Summit, a three-day long conference focused on celebrating the ALSCI’s efforts to spread lung cancer awareness and bringing together a community of aspiring doctors, from middle schoolers to medical school students. The attendees were mostly members of the ALSCI’s over 100 chapters: ambitious young pre-med students, who — outside of classes, shadowing, and a myriad of other extracurricular activities — are also manning tables at community events, working with community leaders to put up signs on public transportation, offering screening to un-housed people, and passing legislation that requires lung cancer screening guidelines to be displayed where all nicotine products are sold in the state of California.

The ALSCI was founded in 2017 by Harvard Medical School Associate Professor of Surgery and Mass General Hospital Thoracic Surgeon Dr. Chi-Fu Jeffrey Yang to raise awareness for lung cancer screening. Since then, it’s grown into an organization with chapters at universities, high schools, and nonprofit organizations, about 110 of which were represented at the conference.

However, such goals cannot be achieved simply through the efforts of motivated pre-med students; they also require the efforts of any innovative student hoping to make a difference. From detecting radon in individuals’ lungs to utilizing performing arts to showcase stories of lung cancer survivors, the summit demonstrated the creative ways advocates can call more attention to this deadly disease.

Why spotlight lung cancer specifically?

Lung cancer, which is caused by genetic mutations that make lung cells start dividing suddenly and uncontrollably, is the leading cause of cancer-related deaths in the United States. Every year, more Americans die of lung cancer than from breast cancer, prostate cancer, and colorectal cancer combined. Though people with a history of smoking or smoking exposure are particularly at risk, other factors, like genetics and exposure to environmental pollutants like radon, can also play a role.

When it’s caught in late stages, lung cancer has an 8% survival rate, according to the American Lung Association. But when it’s caught before the cancer has the chance to spread to other parts of the body, the rate can be as high as 63%.

Take the number of cigarettes you’ve smoked per day and multiply it by the number of years you’ve smoked. What you get is a pack-year, the metric experts use to estimate how likely it is that lung cancer screening could save your life. The U.S. Preventative Services Task Force recommends that people between the ages of 50 and 80 who are currently smoking, have a 20 pack-year history, or have quit smoking within the past 15 years get screened every year with a low-dose computed tomography (CT) scan.

But there’s a problem: the stigma. While getting lung cancer is never anyone’s fault, the fear of being associated with smoking can deter people from scheduling that screening appointment, even if they have never touched a cigarette. That’s where the ALSCI comes in. Its members spent hours talking to community members, passing out flyers, and designing comprehensive awareness campaigns encouraging people to plan a screening.

Over 300 of these members came together for the ALSCI Summit, where they had a chance to talk to experienced physicians, meet former director of the National Institute of Allergy and Infectious Diseases Dr.

Anthony Fauci, strategically plan their organization’s next steps, and watch the final round of the ALSCI Lung Cancer Innovation Challenge.

Promoting lung cancer awareness, from art competitions to in-flight campaigns

For many aspiring medical professionals in attendance, the Lung Cancer Innovation Challenge Finalist presentation session was the highlight of the weekend.

The international challenge, launched back in February, tasked teams of middle- and high-school students with taking lung cancer prevention into their own hands. Working alongside an ALSCI mentor, the teams spent four months ideating and implementing novel approaches to spreading awareness about the benefits and availability of lung cancer screening.

The top ten teams (determined by their projects’ creativity, impact, cost, scalability, and demonstrated subject knowledge) were invited to present their work at the ALSCI Summit as finalists. Following the presentations and deliberation by a panel of judges, the first, second, and third place teams were respectively awarded \$10,000, \$5,000, and \$2,000 to continue their projects.

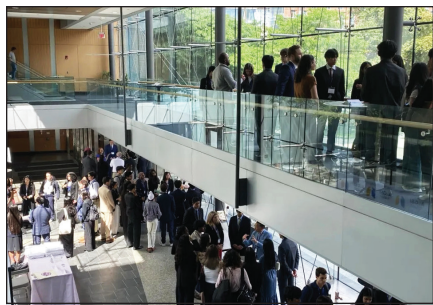
“It’s all to save lives,” said Soneesh Kothagundla, an incoming freshman at Harvard University. Kothagundla helped coordinate media outreach for this year’s ALSCI Summit, having invited *The Tech* to report on the event in June.

The young researcher had the rare opportunity to exhibit two finalist projects at the ALSCI Summit that weekend: “Lung Cancer Awareness at 40,000 Feet in the Air: An In-Flight Campaign to Change Lives” and “The National Billboard Project.” Kothagundla developed and presented the latter project alongside Sai Thotham, a rising senior at Lee County High School in Lee County, Georgia.

The two projects, like the other eight presented at the summit, demonstrated the considerable potential of concerted efforts to promote lung cancer screening. Videos of Kothagundla’s pre-flight PSA announcements about lung cancer screening garnered over half a million views on social media and inspired dozens of radon kit purchases; The National Billboard Project achieved 5.1 million views across their 162 billboards across eight states.

While the task of negotiating with billboard retailers and investors was draining at times, Thotham remarked that it was all worth seeing the real impact their work had on people’s lives.

“That just puts a smile on our face,” Thotham said, recalling phone calls he and Kothagundla would get from people who got screened after seeing their billboards. “Because, hey, someone’s being helped around here.”



VERONIKA MOROZ—THE TECH
ALSCI Summit attendees break out into groups for their first of multiple mentoring sessions. Friday, July 10, 2026.

Rising high school senior Ava Villacorta won the third-place prize for her project “Breath of Remembrance.” The southern California-based project encouraged lung cancer screening advocacy and education via artistic expression, including through a student art competition recognizing celebrities affected by the disease.

Rising high school senior Rohan Kundra and rising high school junior Neil Thakkar were awarded the second-place prize for their project “LungFACTS (Follow-up Analytics and Community Targeting System).” The Pennsylvania-based team developed an AI patient navigator paired with a national lung cancer screening tracking system, considering a user’s basic information (such as their age and smoking habits) before providing advice on whether and how to proceed with getting screened.

Rising high school sophomore Arsheen Sethi and rising eighth grader Jeevat Sethi won the first-place prize of the innovation challenge with their “Breathe Easy Initiative” project. The duo created a comprehensive outreach program in their home state of New York, utilizing lung cancer education, smoking history surveys, hospital and nonprofit partnerships, and local interactions with potential patients to spread the word about the benefits of lung cancer screening.

Dr. Fauci speaks to the need for advocacy and medical integrity

Dr. Anthony Fauci attended the second day of the conference via Zoom for a fire-side chat, sharing his perspective on the importance of moving prevention efforts past skepticism to sustained advocacy.



MALAKHI BEYAH—THE TECH
Dr. Anthony Fauci answers audience questions on the second day of the ALSCI Summit at the Joseph B. Martin Conference Center. Saturday, July 11, 2026.

“All prevention modalities historically started off with skepticism about it until the advocacy for it overcame the skepticism,” Fauci explained, pointing to the increasingly regular practice of colonoscopies and skin exams as proof that public habits can shift when advocates persist.

Showing up and doing the work even when it remains unrecognized or uncertain was a core theme in Fauci’s remarks as he answered student questions about his own career. In the earliest years of the HIV/AIDS epidemic, for example, the disease didn’t yet have a name and effective therapies were nonexistent.

“I wasn’t healing anybody. But one of the things that I could do and learn was how to be someone who exercises that other aspect of medicine, which is empathy and caring and comforting,” Fauci said.

He also spoke candidly about what it takes to advise those in power without compromising one’s principles, recalling advice he received before his first meeting with a sitting president: to tell himself that it might be the last time he ever walked into the White House, so that a fear of not being invited back would never tempt him to tell a leader what they wanted to hear instead of the truth. “At least you’ll walk out of the building with your integrity intact,” he reflected.

Perhaps most impactful for the students in attendance, though, was how Fauci described arriving at medicine in the first place. His path was not a straight line from a childhood fascination with science; he obtained a Bachelor of Arts in Classics while being pre-med. “It sounds a little bit like an oxymoron,” he recalled.

“I was trying to figure out how I could satisfy my proclivity to understanding human beings as people, as opposed to objects of a scientific experiment,” Fauci said, later adding, “I found out that you could wed both your aptitude and love of science with your love of the human species.”

He did admit, nonetheless, that he would have ended up teaching classics or philosophy had medicine not worked out.

But Fauci was not the only medical professional at the conference whose path to medicine can seem surprising. Each day, conference participants were introduced to doctors who excel in medicine in spite of, or possibly because of, the ups and downs of their medical journeys.

Professionals discuss their unique paths in the field of medicine

Other accomplished medical professionals were also invited to share their own career journeys, motivating students with the message that the path to becoming a medical doctor can take many forms.

Dr. Narjust Florez was one of those professionals. Florez helped launch the #HearHer campaign in 2024, bringing awareness to thousands of women who are misdiagnosed or ignored in lung cancer diagno-

sis. Her entry into the medical field was far from as simple as pursuing an interest in lung cancer, however, with her early years in medicine being mired by the prejudice she faced as a Latina.

“I was just being me: bringing food, caring for people, nailing the [nursing] thing, and playing some music here and there,” she said. “But this is what struck me. There was the stereotype: [...] ‘You’re so smart for a Latina.’”

The frequent racial microaggressions pushed Florez into a years-long identity crisis; she wore more muted clothing, hid her Venezuelan accent, and avoided sharing her personal experience as a refugee with her residents in an attempt to fit in.

One patient interaction changed her entire outlook on her place as a Latina in the medical field. When someone else went to examine Florez’s patient in the emergency room, the patient stopped them. “I need to talk to Dr. Florez,” the patient stated. “You guys can say whatever you want; she just gets me.” She realized that day that her identity as a Latina was a strength, rather than a burden, in her medical career. The next morning, she ditched her standard white lab coat for her more colorful traditional clothes; since then, she said, “I haven’t worn anything else.”

Florez went on to co-found the Latinas in Medicine Community, which has funded seven Latinas in medical research through its Young Investigators Award.

Dr. Jonah Poster, another medical professional at the summit, had a notably different experience entering the medical field. In fact, he initially worked at Wall Street’s Morgan Stanley firm, never having even considered a career in medicine during his undergraduate years of college. Despite having secured a coveted position on Wall Street (and the sizable salary that came with it), Poster had a lingering concern that a career in managing global finances was not for him.

“I really wasn’t fulfilled,” he said. “I wasn’t driven by what I was doing.”

Hours of reading followed, with Poster researching fields as varied as economics, physics, and sociology to find what he was truly passionate about. He ultimately realized that medicine was the common factor tying all of those fields together, and he found himself eager to learn as much as he could about it.

Poster went back to college, balancing a post-baccalaureate program at Harvard Extension School and his own medical research. As stressful as the transition was at times, he “never regretted doing that” and “it was really rewarding.”

Poster was later hired by Shriners Hospital Boston, where he shadowed burn surgeon Dr. Robert L. Sheridan. Sheridan played a pivotal role as Poster’s advisor figure during that time, which Poster made sure to emphasize to the students at the summit questioning the need for a mentor early in their careers.

“Seeing [Sheridan] and what he did every day was truly inspiring,” Poster said. “[It] made me want to work harder and really affirmed my love for surgery.”

“It’s really inspiring to hear from these people that went through the same path but in different ways,” reflected conference attendee Elif Yigit, a neuroscience student on the pre-med track at Boston College. “It’s interesting how flexible of a field that is, and it motivates me and excites me because there’s so much I can do.”

Florez and Poster’s stories were only two of many shared at the ALSCI Summit that weekend. Whether it involved overcoming racism, making life-altering career changes, or anything in between, each professional’s background demonstrated to students how every one of them could find success in the medical field.

“Lung cancer specifically is such a unique opportunity because it’s a connection between the medicine, public health, and community outreach,” said ALSCI National Director and Summit co-organizer Sam Schwartz, a rising senior at George Washington University who joined the organization as a freshman.

For the students who spent the weekend meeting mentors and imagining their own future in medicine, that connection across diverse disciplines and communities is precisely what they came to find.