MIT's Oldest and Largest Newspaper

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The Tech
Established 1881

WEATHER, p. 2
THU: 24°F | 4°F Partly Cloudy.
FRI: 17°F | 1°F Sunny.
SAT: 20°F | 12°F Mostly Sunny.

Volume 145, Number 23

Thursday, January 29, 2026

Bostonians brave frigid cold to protest ICE

Co-organizer Franchetti: "The time to get up and stand up for these things is now"

By Eric Wang
ASSOCIATE COPY EDITOR

On Jan. 20, 2026, over 100 people gathered in front of Boston's Ruggles Station to participate in the nationwide "Free America" walkout despite frigid temperatures. Organized to protest the Trump administration and its immigration crackdown, the movement was fueled in part by the killing of Renee Good by a federal immigration agent in Minneapolis on Jan. 7.

Shortly after 2 p.m., participants began gathering, holding signs that criticized U.S. Immigration and Customs Enforcement (ICE), President Trump, and other White House officials such as Health Secretary Robert F. Kennedy Jr. and Vice President JD Vance. Northeastern University Professor of Sociology and walkout organizer Suzanne Walters opened the event with a short speech on the importance of organized protest.

Walters stressed society's duty to speak out against the government when it mistreats its people. "We walk out to say we cannot go on with business as usual when the business is [the] government-sanctioned murder of young mothers in their cars," she said.

After concluding her remarks, Walters instructed the group to march to Forsyth Park to further demonstrate. On their way, participants chanted slogans such as "For justice and peace, get ICE off our streets," and "Not for war and occupation, fight for jobs and education." In addition, protestors made use of megaphones, whistles, and horns, often to the response of cars passing by. Event marshals and the Boston Police Department also guided the protesters down Forsythe Street to the park, and medics were stationed along the route to administer aid for injuries caused by the frigid temperatures.

At Forsyth Park, several speakers expressed their dissatisfaction with the White House's policies. Northeastern University fourth-year Josiehanna Colon, a criminal justice and human services major, criticized her university's lack of action in regards to diversity programs.

According to Colon, the Trump administration's attitude towards diversity, equity, and inclusion (DEI) policies has resulted in Northeastern University eliminating or drastically reducing positions involved in that area. Since their elimination, Colon claims that Northeastern has neither reinstated such positions nor explained how the funds previously allocated to those programs would benefit affected communities in other ways.

Other speakers denounced the administration's positions on a range of issues, from the U.S. military's capture of Venezuelan president Nicolás Maduro to the increasing prevalence of ICE and its effect on

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Akorfa Dagadu '26 named Schwarzman Scholar

Dagadu will attend a fully-funded master's program at Tsinghua University next year

By Jada Ogueh
NEWS STAFF WRITER

On Jan. 15, the Schwarzman Scholars Program welcomed 150 scholars to its 11th cohort, including MIT's Akorfa Dagadu '26. Scholars attend a one-year, fully-funded master's degree in global affairs at Schwarzman College, a residential college at Tsinghua University in Beijing.

Dagadu, an international student from Ghana, studies Chemical-Biological Engineering (Course 10-B). As part of the Alexander-Katz and Cordero Labs, she conducts research on designing enzyme-polymer systems to break down plastics. She has co-authored several publications, including one published in the American Chemical Society journal, and received awards including the CellPress Rising Black Scientists Award. Dagado also co-founded Ishara, a circular plastics start-up advancing recycling in Ghana. She plans to pursue a PhD in chemical engineering, specializing in polymer science and material sustainability. *The Tech* interviewed Dagadu about her thoughts on receiving the scholarship and her goals as a scholar.

PHOTO PROVIDED BY AKORFA DAGADU

MIT's Akorfa Dagadu announced as 2026 Schwarzman Scholar.

This interview has been edited for clarity and organization.

***The Tech*: How did you feel when you learned you were chosen for this award?**

Dagadu: Very happy and nervous at the same time. It was around exam season, so I was nervous about exams, but excited about my acceptance; the Schwarzman Scholars program was something that I was just trying for trying's sake. I wasn't optimistic that I was going to get in, so when I got the call that I was chosen, I was so happy.

***TT*: What do you hope to accomplish as a Schwarzman Scholar? How does this connect to your long-term professional goals?**

Dagadu: Most of my life has been focused on waste and waste management, wondering why we produce so much material without thinking about what happens when they are out of use. I mostly joke with my friends that I live in the "away" when you say, "throw it away."

In terms of my long-term goals, I want to establish a materials hub that rethinks the way we design materials from the beginning. Let's design plastics that we know are not going to be a problem after we've used them.

If we are thinking of redesigning materials from the beginning, it makes sense to start from the manufacturing hub of the world. When we think about the manufacturing hub of the world, it's China. The Schwarzman Scholar program offers a gateway to that hub, allowing scholars to go to China and discuss real-world issues with a cohort of like-minded people and think about how to solve them. It would allow me to apply policy and business and entrepreneurship to what I want to do, which is research.

***TT*: How has your time and interactions at MIT contributed to your goals?**

Dagadu: When you come to MIT, they say it's a very rigorous environment. Your first year, they break you down, and they re-mold you into a completely different person with different perspectives.

In terms of communities within MIT that have helped my progress, the first is the Alexander-Katz Lab. I specifically worked under Tianyi Jin PhD '25. I first met him as a freshman during IAP. I wanted to do a UROP; I didn't care what it was as long as it was in plastics. It was computational research, and even though I didn't know how to code at that time, he was very patient. He took me through the beginning of coding to building large-scale simulations and even writing a paper. I was in that lab for about three years. Jin, being from China, also informed me about Tsinghua University and the Chinese climate.

Outside academics, my biggest community has been the African Student Association (ASA). It is a group of people there for each other, sharing opportunities and wisdom. There's a transfer of knowledge from people who have done it before you. Jessica Quaye '20 was a Schwarzman Scholar,

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IN SHORT

Third quarter PE class registration opens Friday, Jan. 30 at 8 a.m.

Registration week ends Friday, Jan. 30.

The IAP 2026 pay period ends Feb. 1.

The first day of classes is Monday, Feb. 2.

The deadline for Spring UROP Direct Funding is Feb. 3.

The registration deadline is Friday, Feb. 6.

Interested in joining *The Tech*? Email *tt-join@mit.edu*

Send news and tips to *tt-tips@mit.edu*

Unconventional events at Bad Ideas Weekend

Events ranged from building a gingerbread Stata to making 2^N cookies

By Vivian Hir
NEWS EDITOR

From Friday, Jan. 23 to Sunday, Jan. 25, MIT students participated in eccentric events during Bad Ideas Weekend, an IAP tradition during which students run and organize events based on humorous ideas. This year, there were 28 events, spanning from Dizzy Glasses Obstacles to Blind Mario Kart.

Although East Campus students are the main organizers of Bad Ideas Weekend, the event is open to all MIT students and takes place all across campus. This year's Bad Ideas Chairs were Evan Lim '29, Vivian Ang '29, and Jack Carson '28.

According to Ang, the chairs tried to approve as many events as possible as long as they passed safety approvals. "Good 'Bad Ideas' are subjective, so unless it was extremely dangerous or an idea someone else already wanted to run, we tried to advocate for it," Ang wrote. One logistical issue they experienced was the snowstorm on Jan. 25, which caused them to cancel Mini Trebuchet and Outdoor Blacksmithing. However, the inclement weather did not stop them from running the Green Building Challenge — a Bad Ideas Weekend tradition. Ang stated that holding Bad Ideas Weekend events during the snowstorm "is just in spirit of the event either way."

One event that stood out to Ang was "WHERE ARE MY BALLS?", an event where people had to find balls containing written parts of an Amazon gift card code in the Simmons ball pit. She was also impressed by 2^N Cookies, as participants made around 2^11 (2,048) cookies using 8 different recipes, twice the amount of cookies baked last year. Ove-

PHOTO COURTESY OF GLORIA ZHU

Students built Stata Center using gingerbread sheets during Bad Ideas Weekend.

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A coming of age story for a boy with a special condition. **ARTS, p. 7**

FUTURE OF QUANTUM
MIT launches new Quantum Initiative (QMIT). **SCIENCE, p. 9**

A WINTER'S SERENADE
Subunit of K-pop group Seventeen release a new album. **ARTS, p. 6**

POLYMER DELIVERY SERVICE
Koch Institute research on using polymers to release vaccines. **SCIENCE, p. 8**

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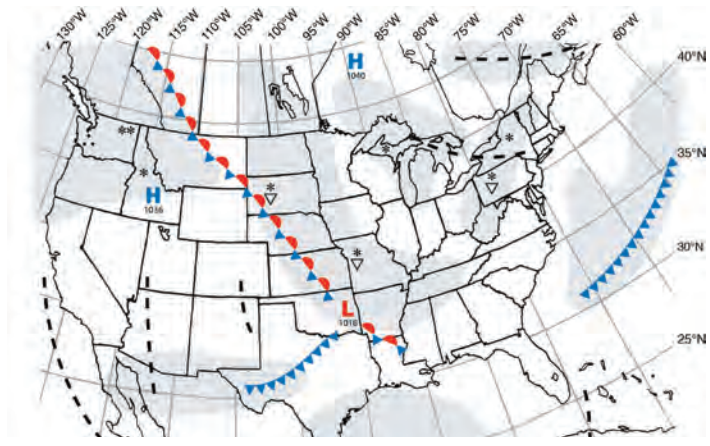
WEATHER FORECAST



Weather Systems	Weather Fronts
H High Pressure	Trough
L Low Pressure	Warm Front
§ Hurricane	Cold Front
	Stationary Front

Precipitation Symbols	Snow	Rain
Showers	*	•
Light	*	•
Moderate	**	••
Heavy	***	•••

Other Symbols
Fog
Thunderstorm
Haze

Compiled by MIT Meteorology Staff and The Tech

Intense cold continues and more snow on the way

By Conrad Straden
METEOROLOGIST

What a storm this past weekend! Logan Airport — the official measurement site for Boston — recorded 23.2 inches of snow, making this snowstorm the 8th biggest one on record for the city. There was an abundance of wintery scenes across campus this week, with massive mounds of snow and a student-created ski ramp on the stadium bleachers.

Looking ahead for the rest of the week, we will be dealing with very cold weather. Temperatures will be in the single digits and teens on Friday and Saturday. In the Southeast, a storm is brewing, bringing snow and wind to the Carolinas Saturday night. The Miller A nor'easter then comes up the coast, threatening Eastern New England on Sunday. A track close to the coast would bring a major blizzard, while a track further offshore would mean minimal impacts. While it is still too early to tell how close the track gets, current model guidance favors an in-between scenario that would bring light to moderate snowfall and wind.

In other news, mainly clear skies will mean good chances for seeing MIThenge — the iconic MIT event where the setting sun aligns with the Infinite Corridor — today and tomorrow.

JANUARY 29
SITUATION FOR NOON (ET)

Extended Forecast

Today: Partly cloudy. High around 24°F (-4°C). Northwest winds 5–10 mph.

Tonight: Clear. Low around 4°F (-16°C). West winds 10–15 mph.

Friday: Sunny. High around 17°F (-8°C) and overnight low around 1°F (-17°C). West winds 10–15 mph with gusts to 25 mph.

Saturday: Mostly sunny. High around 20°F (-7°C) and overnight low around 12°F (-11°C). Winds will be light.

Sunday: Chance for a blizzard. High around 26°F (-3°C) and overnight low around 18°F (-8°C). North winds 15–25 mph.

Thousands participate in 2026 Mystery Hunt

This year's theme centered on puzzle monsters, a.k.a. Puzzmon

By Vivian Hir
NEWS EDITOR

From Jan. 16 to 19, over 5,000 participants across approximately 280 teams competed in the 2026 MIT Mystery Hunt. Over 2,400 participants representing around 150 teams competed directly on campus, where they worked in classrooms to solve a variety of puzzles from crosswords to logic games. The team "The Providence Bureau of Invest-Egg-Ations" won the hunt and was awarded a special themed coin on Sunday, Jan. 18 at 3:05 p.m. Their win required around 50 hours of solving to complete approximately 230 puzzles. In total, 15 teams solved all the puzzles by noon on Monday, Jan. 19.

One of the largest puzzlehunts in the world, MIT's Mystery Hunt challenges teams to solve a series of puzzles and meta puzzles to find a coin hidden on campus during the Martin Luther King Day Weekend. Mystery Hunt runs on a hybrid format, meaning that participants and teams can also participate remotely by entering puzzle submissions on a custom website.

The hunt is designed such that a team can work on a selection of puzzles at the same time, allowing them to advance in the game even if they may be stuck on one puzzle. In addition, this year's hunt had non-puzzle tasks, which participants completed to gain "research points" such that they could unlock other puzzles. These tasks, such as submitting photos of touching grass, were designed to be friendly to all ages and experiences, including children and first-time participants.

The Mystery Hunt's theme and puzzles are designed by the previous year's winning team. Team Cardinality, winners of the 2025 Mystery Hunt, wrote the hunt and chose puzzle monsters (a.k.a. Puzzmons) as the theme, which was inspired by the Pokémon franchise, according to Puzzle Club Secretary and writing team member Riley Kong '25. As introduced in the kickoff event, the Puzzmon is a cryptid species that can accidentally open portals that could lead to the world's destruction. However, if participants solve puzzles, they can befriend the Puzzmons and help close the portals.

Many participants shared that they had a lot of fun solving a diverse array of puzzles with their team members. In addition, they were impressed by the design and execution of the puzzles at Mystery Hunt.

Eric Zhan '28, a member of the winning team, described the hunt as "incredibly fun" and found the puzzles "absolutely amazing." He also liked the concepts that Team Cardinality designed for the puzzlehunt. "This year's hunt was very hyper-focused on the puzzle elements and structure, and I really enjoyed the amount of work that went into it," Zhan wrote.

Zhan credits the team's large membership and strong organization for their win. A lot of time went into discussing and planning for the hunt. Sarah Porter '27, another member of the Providence Bureau, attributed the team's ability to work on the puzzles overnight as integral to helping them win. The team completed an entire round in a night in this manner.

Marvin Mao '28, Puzzle Club Event Chair, enjoyed Mystery Hunt because of his team's large in-person presence, allowing them to finish the hunt. "No puzzlehunts I've done before really compare to the scale of having over 30 people all in a room puzzling away for a weekend," Mao wrote. One puzzle that he particularly enjoyed solving was in a later round, which required placing many pieces on a hexagonal grid to "unlock more of the map." Mao also found the non-puzzle tasks to be fun, such as using certain objects like checker pieces to communicate to teammates.

Landon Carter '17 MEng '18, found the design of the puzzles to be "pretty clean," and liked that the hunt had "a lot of little mini games" that could be played within the puzzle. He also appreciated that this year's hunt had a lot of short events to facilitate interactions between participants, including games from advanced pictograms to an integration bee.

Troy Thomas enjoyed the puzzles' interconnected nature, since he personally likes "meta matching" as a puzzling style. Unlike other puzzlehunts he has attended, Thomas considers Mystery Hunt to be unique for its large-scale production. "Just having this much effort to go into such a curated event is really good to see," Thomas said.

LEVY LE—THE TECH

2026 MIT Mystery Hunt organizing team member Mason Zhu poses with a giant plush PuzzMon, or puzzle monster, at the event's headquarters in Stud 3 on Saturday, Jan. 17, 2026.

Dagadu thanks mentors, community for support

Schwarzman, from Page 1

also from Ghana, and the former ASA president. She advised me through my MIT journey.

My professors were very helpful when it came to writing recommendation letters and helping me think about future plans and a PhD. Professor Alfredo Alexander-Katz provided one of my recommendation letters.

The biggest community that has shaped my views and made me want to go into public policy outside of my engineering degree is the MIT Kuo Sharper Center for Prosperity and Entrepreneurship. I'm into entrepreneurship since I have a start-up in Ghana. I joined the Student Fellowship twice in my sophomore and junior year. The Center has been phenomenal in pushing me to think of solutions outside of the lab and giving me support for my start-up. The executive director, Dina Sherif, helped me apply for the Student Fellowship and gave me a recommendation for the Schwarzman program.

The Distinguished Fellowships Office was especially helpful when it came to preparing for the Schwarzman interviews.

The last person is not affiliated with MIT, but he has been instrumental in getting me where I am today. Ferdinand Quayson is the Director of the Young Achievers Foundation in Ghana. The Foundation paid for my SAT application and Quayson has mentored me all the way through MIT. He provided my third recommendation.

***TT*: Do you have any advice for students interested in this scholarship?**

Dagadu: Just go for it. I thought I wasn't qualified enough for the scholarship, even though it turns out that I was. MIT has a way of making you feel like you're less qualified than you are, but when you go outside of the MIT bubble, you realize that you do know quite a lot.

Throughout the process and interviews, I realized I know my research. I know what I'm doing. So just applying and even going through the process itself is a worthwhile experience.

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Nat Geo photojournalist gives talk at MIT

Vitale: "The more I see, the more I see how deeply connected we all are to life"

By Vivian Hir
NEWS EDITOR

On Thursday, Jan. 22, award-winning National Geographic photojournalist Ami Vitale gave a talk at MIT about using photography to cultivate empathy and hope worldwide. Around 50 people attended the talk in 2-190, and the event was sponsored by the Octet Collaborative, a Christian organization at MIT that promotes human flourishing.

Originally a conflict photographer, Vitale transitioned to wildlife photography after seeing how environmental problems — such as climate change — further contribute to human conflict. In her current work, Vitale focuses on the interconnected relationship between humans and wildlife. She is also the founder of Vital Impacts, a nonprofit that supports global humanitarian projects dedicated to environmental conservation.

Vitale began by discussing the title of the talk, which was "Wild Hope." For Vitale, hope is a resistance to "cruelty and despair" marked by a relentless pursuit of "good work" in spite of how useless it may feel. "I think that history only looks at things in retrospect, but in real time, [history is] shaped by people deciding to show up and never giving up," Vitale said.

Growing up, Vitale was very introverted and "painfully shy." However, she quickly fell in love with photography as a teenager because of how self-empowering the art was for her. "It took attention away from myself and allowed me to focus on others and dive into situations I never imagined I had the courage to do," Vitale said. She also highlighted the power of photography as a visual medium that transcends cultural and language barriers.

Vitale's deep interest in learning about the stories of the human condition influenced her to become a war photographer, initially documenting violence on the frontlines in places like Afghanistan and Gaza. However, seeing a newlywed couple dance in the midst of the Second Intifada made Vitale question why her photos focused so much on destruction and not hope. As a result, Vitale decided to pivot toward wartime photos that showed resilience.

In the early to mid 2000s, Vitale lived in Kashmir to document the militarization and conflict between India and Pakistan. Instead of simply depicting the war, Vitale wanted her photos to "humanize" the conflict by focusing on stories that showed the "quieter moments" of people's everyday lives, such as a woman getting henna for her wedding. But over time, Vitale began to feel that the "erosion of the natural world" in her work was related to human conflict and suffering. This spurred her to pursue wildlife photography instead.

Vitale's shift from photographing people to wildlife was also due to seeing the intertwined relationship between humans and the surrounding land. "We talk about trees being the backdrop to our story, when in fact it's the other way around," Vitale said. "We are the backdrop to their story."

One of Vitale's early wildlife photo stories was about Sudan, the last male northern white rhino. In 2009, Sudan was moved from a safari zoo in the Czech Republic to the Ol Pejeta Conservancy in Kenya for rehabilitation and breeding, as there were only eight surviving white rhinos in the world. Vitale described her first encounter with Sudan as "magical" because of how "gentle and hulking" he was. "Just something inside of me shifted," Vitale said. However, Sudan's story was rejected. Despite this, Vitale persisted, covering the story because she wanted to document "what extinction will look like."

Although the photos of Sudan in the conservancy are idyllic and peaceful, Sudan was always guarded by militarized men due to poaching concerns. Through this project, Vitale realized that local communities living near the animals were often left out of the narrative, even when these locals protected the wildlife.

"These people spend more time with these animals than they do with their own children and own families," Vitale said. "And if that is not commitment, I don't know what else it is." Vitale argued that effective wildlife conservation requires not only stricter laws and greater enforcement, but also community engagement.

Vitale also covered the Reteti Elephant Sanctuary in Kenya, founded in 2016 as Africa's first indigenously-owned elephant sanctuary. The sanctuary rescues and takes care of orphaned elephant calves, who then get released back into the wild once they are fully rehabilitated.

In Retiti, Vitale witnessed the symbiotic relationship between humans and elephants — elephants kept the ecosystem in balance by maintaining vegetation and finding water sources. "The more I [witness], the more I see how deeply connected we all are to life," Vitale said. "We happen to be living in this bizarre spasm of violence against wildlife and humans destroying each other and our habitats." She urged the audience to not be indifferent to the destruction of wildlife and climate change's effects.

VIVIAN HIR—THE TECH

National Geographic photojournalist Ami Vitale gives a talk on Thursday, Jan. 22, 2026 in 2-190.

Vitale then discussed her project regarding the rewilding of pandas in China. Vitale shared that she learned many lessons about conservation from her time in China, particularly about the country's efforts in reforestation and the movement to protect and restore panda populations. Such efforts were successful in moving pandas from the critically endangered to the vulnerable list of animal species.

At the end of the talk, Vitale returned to Sudan's story, talking about his passing in 2018 and the fate of the white rhino species. She showed a poignant photo of rhino keeper Joseph Wachira putting his head and hands on Sudan before he died. What Vitale remembers most about that day was how quiet the surroundings were. "It was almost like the whole world was mourning because it signaled the functional extinction of the species," she said.

Vitale then showed a heartbreaking photo of a dead white rhino fetus implanted by IVF in 2025. Although the IVF was successful, the surrogate mom died from a deadly bacteria infection during a flood. While the death was a huge loss for the conservation team, Vitale is hopeful that future IVFs will be successful.

Vitale concluded the talk by calling for everyone to take action and help protect the Earth. She encouraged people to start small. "We begin in our backyards, in our neighborhoods and the choices we make every day; how we consume, how we protect and how we notice the life around us," Vitale said.

Middle Eastern fast-casual chain NAYA opens

The Kendall Square store sells custom bowls, rolls, and salads

By Vivian Hir
NEWS EDITOR

On Jan. 14, Middle Eastern fast-casual restaurant chain NAYA opened its fourth Massachusetts location in Kendall Square, accompanying two in Boston and one in Watertown. The previous tenant of the Kendall Square storefront, vegetarian fast food chain Clover Food Labs, closed in 2024.

Inspired by Lebanese cuisine, NAYA has over 40 locations in the Northeast, mostly in New York City. Customers can create their own custom bowl, pita roll, or salad that includes a base, protein, and unlimited toppings. Depending on the protein, rolls cost between $10.59 to $13.50, while bowls cost between $11.99 to $14.99. The restaurant also sells appetizers, desserts, and pantry items such as za'atar. According to store manager Jefferson Assis, the most popular order is the chicken shawarma rice bowl while the most popular appetizer is rekakat, a Lebanese cheese roll.

On the morning of Jan. 14, NAYA founder Hady Kfoury and Cambridge Chamber of Commerce representatives held a ribbon cutting ceremony. In addition, the store gave out free or discounted meals to customers at Kendall Square. The first 50 bowls were free and remaining bowls were sold at $5. Sales from the first day went to charity. On the website, people could spin a wheel to get an opening prize, which included discounts such as buy-one, get-one deals.

"The first week of business was okay, and we expect more [business] when the college kids come back," Assis said.

Assis stated that NAYA differs from CAVA, another fast-casual restaurant serving custom bowls and rolls, in that NAYA is Middle Eastern while CAVA is Mediterranean. Assis also pointed out that NAYA has chicken and beef shawarma, which are protein options not offered at CAVA. In terms of price, CAVA's build your own bowls and rolls are $12.25, which are comparable to NAYA's prices, though CAVA's featured menu items and chef-curated pitas are between $12.25 to $17.05.

NAYA's location on 355 Main St. is open seven days a week from 10:30 a.m. to 9 p.m.

VIVIAN HIR—THE TECH

The storefront of NAYA Kendall Square on Main St on Monday, Jan. 19, 2026.

Protest sees broad participation across age ranges

Protest, from Page 1

neighborhoods. By 3:30 p.m., the walkout had concluded, as participants left to seek refuge from the cold.

Despite the challenges the weather posed, many protestors were glad to see such widespread participation, especially from the younger generation.

For third-year Northeastern University student and co-organizer Jeffrey Franchetti, seeing people of all age ranges participate in the walkout was invigorating. "The time to get up and stand up for these things is now — you can't be on the sideline anymore. It's time to band together and show the world what us young people can do," he emphasized.

High school student Damaris Sosa echoed the same sentiment. As a member of her school's student identity protection alliance, Sosa participated in the event to support her classmates. Like Franchetti, Sosa reiterated the need for the younger generation to step up and take on greater responsibility for their future. "It's very important that we start to work to better our future because it is our future and [this] is what we are being left with," Sosa said.

Swedish Migration Minister Forssell visits MIT

Minister is accompanied by delegation of leaders from Swedish universities

By Vivian Hir and Sabine Chu
NEWS EDITORS

From Jan. 12 to 13, Swedish Minister of Migration Johan Forssell visited Boston and Cambridge with a delegation of leaders from six major universities in Sweden, including the Karolinska Institutet and Uppsala University. During the trip, the delegation met with representatives from MIT and Harvard, state representatives, and business organizations such as the Kendall Square Association. They hoped to build new collaborations with American research leaders in industry and higher education, thus gaining insights into Sweden's domestic research.

A member of the center-right Moderate Party, Forssell has focused on increasing the share of highly skilled immigrants in Sweden while significantly reducing the number of asylum seekers and refugees. Forssell has also prioritized integration, emphasizing the importance of learning the Swedish language and becoming part of Swedish society. These new policies reflect a major shift in Sweden's international reputation, from a nation known for welcoming refugees to one seriously limiting asylum seekers.

In an interview with *The Tech*, Forssell discussed the Swedish government's wish to strengthen its research sector and increase the number of highly skilled immigrants. In addition, Forssell shared his thoughts on what integration means in Sweden.

The following has been edited for length and clarity.

***The Tech*: The Swedish government has stated that a main priority is to strengthen Sweden's workforce, particularly in research. How does visiting leading institutions like MIT contribute to this goal, and what research areas have you seen at MIT that you want to bring to Sweden?**

Forssell: I have to admit that I'm an economist, and I understand that all of you here are extremely smart, so I'm not here to point at any specific area. In Sweden, we value academic freedom very much, so it's really up to universities. But I can tell you that some of the areas that we've been discussing during this visit are quantum physics and everything that's happening in medical technology. We have the Karolinska Institutet with us, and this [medical technology] is an area that we've always invested very heavily in. As you know, Sweden is also home to the Nobel Prizes. In addition, the green transition is important for Sweden and has always been something that we believe in very much.

***TT*: What specific measures have you done to increase the share of highly skilled immigrants in Sweden in the last few years? How do you convince these immigrants to come to Sweden over other countries in the E.U.?**

Forssell: There's great potential for even more student exchange, including on the doctoral level. It's really a win-win. It's good for us and it's also good for you [MIT]. That can be students from here going to Sweden, but it can also be the other way around. Some of the universities that are with us on this trip are also leading the world in many, many different areas, like the Royal Institute of Technology.

I see a lot of potential there, but some of the things that we're addressing include how to get rid of bureaucracy, because we believe that needs to be very simple. If you would spend time in Sweden at university, it should be very easy for you — you should be able to choose wherever in the world you want to go. I'm pleased to say that today, if you apply for a job in Sweden from abroad, it takes only 19 days to get a decision. There's no fee.

I'm also planning to go to Parliament very soon in Sweden with a new bill that hopefully will enable people to come to Sweden; for example, a researcher could get a permanent residence permit after only three years. We've also been discussing more cooperation between different universities because they also have their own funding. If they want to fund someone from MIT, for example, they have the capabilities to do that. I'll also see if the government could look into any of these sponsored programs.

I know there's a lot of interest in going to Sweden. We're blessed with some of the best universities in the whole world. We have some of the finest private companies too — not only IKEA, Volvo, or Ericsson, but the start-up scene in Sweden is also amazing. And I know for sure that, in Sweden, there's enormous interest in what's happening here in Boston. Hopefully we will see more students and researchers traveling back and forth.

***TT*: What does successful "integration" into Sweden look like for the government? In your opinion, what does it mean to be a Swede?**

VIVIAN HIR—THE TECH

Swedish Migration Minister Johan Forssell (center) visits MIT Nano with a group of Swedish university delegates on Tuesday, Jan. 13, 2026.

Forssell: Sweden has had quite extensive immigration for many, many years, just like the U.S. From the government's perspective, what we're trying to do now is to change the kind of inflow. Over the last few years, we've received many immigrants seeking asylum. We have this devastating war in Ukraine, for example. But at the same time, we need to increase the inflow of highly skilled people. Even though the educational level in Sweden is very high, we're still seeing some skills shortages, especially in the tech sector.

We're trying to get rid of unnecessary bureaucracy, like shortening the time needed to get permanent residence permits, for example. And we want people coming to Sweden to feel very welcome, because they are very welcome. Sweden is a very open, tolerant nation with people from all over the world — a very modern country, very industrialized, very forward-leaning. Of course, we have challenges just like all other countries, but I think it's very easy in Sweden to feel at home. We're quite small, so for us, it's always been very obvious to have an open state of mind and to do business with everyone. That's also why we are always very skeptical of protectionism. In our DNA is free trade, openness, and international cooperation with our partners.

To answer your question, we're doing our best to attract more high-skilled people and talents, and they're very, very welcome in Sweden. If they want to stay there for a year, that's fine. If they want to stay there for the rest of their lives, that's even better.

CONCERT REVIEW

The BSO showcases American musical identity with Allison Loggins-Hull, the Tanglewood Festival Chorus, and Seong-Jin Cho

Seong-Jin Cho performs Tchaikovsky's Piano Concerto No. 1 in B-flat minor

Loggins-Hull's *Rhapsody on a Theme* by Joni, Bernstein's *Chichester Psalms*, Tchaikovsky's Piano Concerto No. 1 in B-flat minor

Boston Symphony Orchestra

Featuring Seong-Jin Cho on piano, Lorna McGhee on flute, Edward Njuguna as boy soprano, and the Tanglewood Festival Chorus

Conducted by Andris Nelsons

Symphony Hall

Jan. 15 – Jan. 17, 2026

By Chloe Lee
ARTS STAFF WRITER

On Saturday, Jan. 17, the Boston Symphony Orchestra (BSO) performed Loggins-Hull's *Rhapsody on a Theme* by Joni with flutist Lorna McGhee, Bernstein's *Chichester Psalms* with the Tanglewood Festival Chorus and Edward Njuguna as boy soprano, and Tchaikovsky's Piano Concerto No. 1 in B-flat minor with renowned pianist Seong-Jin Cho.

The night's concert was a part of the BSO's "E Pluribus Unum: From Many, One" series celebrating the 250th anniversary of American democracy. One aim of this month-long festival is to honor American music. Conductor Andris Nelsons, now in his 12th season as music director of the BSO, expressed his enthusiasm for the initiative, sharing in a projected video and a brief speech between pieces that the BSO seeks to explore ideas that continue to shape America through distinct voices and viewpoints. He stressed that no single musical style or philosophical view defines America; rather, artists and art provide unique and valuable perspectives on the nation's development and culture.

Before the concert began, composer Allison Loggins-Hull joined the stage to introduce *Rhapsody on a Theme* by Joni, describing the work as episodic, fantastical, and rich with emotional contrast. Commissioned by The Knights, the BSO, and the Seattle Symphony Orchestra, the piece drew its inspiration from Joni Mitchell's song "My Old Man" from the album *Blue*. Loggins-Hull explained that the rhapsody contained numerous musical references, which was immediately apparent in her virtuosic writing that nodded to traditional flute repertoire.

Throughout the performance, Loggins-Hull's composition is deeply engaged with Mitchell's original melodic idiosyncrasies. Even as the music moved through rapid arpeggios, tremolos, and sudden changes of color, Loggins-Hull maintained Mitchell's melody.

BSO principal flutist Lorna McGhee, making her solo debut with the orchestra, delivered a high level of brilliance and sensitivity. Her playing demonstrated technical accuracy and expressive warmth, revealing the flute's full range of color with apparent ease. Her solo cadenza was beautiful and flawlessly executed despite unconventional techniques, after which the BSO reentered with care. Bright violin harmonics and strong support from the basses complemented the solo line without overwhelming it, and the triangle's presence consistently followed the flute throughout.

The Tanglewood Festival Chorus joined the BSO under guest choral conductor Jean-Sébastien Vallée to perform Leonard Bernstein's *Chichester Psalms*, with sixth-grader Edward Njuguna featured as boy soprano. Commissioned by the Very Rev. Walter Hussey, Dean of Chichester Cathedral in 1965, the work emerged at a moment of personal and artistic crisis for Bernstein, who had been struggling to compose during a sabbatical from the New York Philharmonic. Written originally for an all-male chorus with boys singing the treble parts, *Chichester Psalms* proved to be a creative turning point, rescuing Bernstein from an experimental atonal path he had found artistically unconvincing.

PHOTO COURTESY OF HILARY SCOTT

Principal flutist Lorna McGhee plays a solo in 'Rhapsody on a Theme by Joni' on Thursday, Jan. 15, 2026.

PHOTO COURTESY OF HILARY SCOTT

Andris Nelsons conducts the Tanglewood Festival Chorus and the BSO on Thursday, Jan. 15, 2026.

The first movement immediately began with Psalms 108 and 100. The Tanglewood Festival Chorus proclaimed the opening in bold unison, highlighting Bernstein's angular rising seventh as Symphony Hall clearly displayed the Hebrew text "Urah, hanevel, v'chinor" ("Awake, psaltery and harp") on a screen above the orchestra. The absence of woodwinds drew attention to the bright percussion section. The Chorus accurately executed the jaunty 7/4 setting of Psalm 100, which alternates between exuberant shouts and more lyrical passages. The rhythmic irregularity of this section was inspired by the natural scansion of the Hebrew language and Bernstein's fascination with the number seven. Despite moments of forceful dissonance and driving percussion, the movement closed with tranquility as the final sustained harmony recalled the opening fanfare.

The BSO's performance of the second and third movements remained magnificent. The serene setting of Psalm 23 unfolded as a lullaby, introduced by Njuguna's pure, accurately tuned solo over harp accompaniment and later expanded with warmth by strings and chorus. The calmness, however, was violently disrupted by Psalm 2, sung fiercely by the men's resonant voices in music borrowed from the foreboding opening of *West Side Story*. The final movement began with a strained version of the opening fanfare, which shifted to a more peaceful melody, while the solo cello's tone remained rich and extremely memorable throughout. As the chorus took up the melody, the ensemble achieved an almost angelic blend, culminating in the quiet affirmation of Psalm 133 and a unified "Amen."

After intermission, the BSO performed Pyotr Ilyich Tchaikovsky's Piano Concerto No. 1 in B-flat minor, Op. 23, featuring pianist Seong-Jin Cho. The concerto's Boston roots lent the performance a special resonance, as its first performance in 1875 took place in the city's Music Hall, now the Orpheum Theatre. From the opening movement, Cho's playing demonstrated the qualities for which he was celebrated worldwide — clarity, control, and a natural sense of proportion. The iconic opening sounded expansive, with solid orchestral unisons that established the sweeping drama of Tchaikovsky's symphonic writing. When the piano entered, it cut cleanly through the orchestra without ever sounding muddy, even in dense passages of fast octaves. Cho shaped the music with a compelling sense of push and pull, combining forceful articulation with moments of relaxed staccato. The precision of his execution was striking, particularly in rapid passagework. In addition, the BSO, particularly woodwinds that maintained balance even in higher registers, provided sensitive support that framed Cho's lyricism.

The second movement contrasted well with the first, opening with an accurate and poised flute solo. Cho's hushed, delicate entrance followed. A rich cello solo added warmth, and the duet between piano and winds conveyed a playful, youthful energy. In the final movement, Cho's rhythmic stability drove the music forward with infectious excitement. The orchestra matched his energy with crisp fanfares and tight rhythms, bringing the concerto to a thrilling close. As an encore, Cho played the Chopin Waltz No. 7, providing a gentle contrast to Tchaikovsky's extroverted grandeur. His encore supported his truly genius performance that reaffirmed the concerto's triumphal tone.

ALBUM REVIEW

Falling into the blue of 'Serenade'

Seventeen's main vocalists DK and Seungkwan make their subunit debut as DxS

★★★★½

Serenade

DxS (DK and Seungkwan of Seventeen)

Pledis Entertainment

Jan. 12, 2026

By Grace Zhang
CO-COPY CHIEF

When the Epilogue version of "Blue" — the title track of DxS's *Serenade* — dropped at 4 a.m. on Jan. 19, a fitting blanket of snow was enveloping Boston in tranquil darkness. I was somehow still awake, and took the opportunity to watch the premiere of the winter-wonderland-coded music video that mirrored my surroundings. A week before that, I was up at the same time for the similar purpose of listening to the newly-released EP.

DxS is a subunit of 13-member South Korean boy band Seventeen. The duo is composed of main vocalists DK and Seungkwan, who also happen to be my biases (favorite members). Seungkwan's husky and emotional voice single-handedly converted me into a ballad fan, which is quite a feat considering that I used to regularly loop a playlist called "EDM no lyrics to get things done." So as the release date drew closer and closer, my anticipation for this mini-album only grew.

Indeed, DxS presents a cohesive, vocally rich EP that spans pop rock, R&B, and ballads. In Seventeen, DK and Seungkwan deliver the powerful high notes that are a signature aspect of the group's explosive final choruses. However, as DxS, their vocal colors and nuance take center stage, highlighting the full range of their artistry.

Rockstar (DK solo)

The EP opens with the upbeat "Rockstar," although the retro synths stand out more than the electric guitar that gives the track its name. As always, DK's voice is clear and bright, carrying a chorus that subconsciously makes me bop my head to its easygoing beat. That being said, I can't help but want something more; the instrumental fades away to let his voice shine during the bridge, but when they come back during his high note, it's the same electric guitar and groovy rhythm. As a result, the final chorus is very similar to the first and second, causing the song to feel more restrained than it should.

This fault is more of a product of the song's arrangement rather than DK's voice itself. I had similar issues with his solo "Happy Virus," which was released last year for Seventeen's 10th anniversary album *Happy Burstday*. Maybe he just prefers songs with lighter, feel-good vibes, which I can't fault him for. However, I dearly crave another iconic moment like his divine high note in "Kidult" or even his strong pre-chorus in "HOT." Goddamn, DK, you have such a strong voice; unleash it to its fullest extent!

Rating: 7.5/10

Blue

The title track gets a whopping seven-minute music video that could serve as an entire K-drama episode, with an epilogue released the following week. I was quite invested in its plot, so I made it a point to revisit the track on Spotify without any accompanying visuals to focus on the music itself.

> **I shouldn't be surprised: the song is literally called "Guilty Pleasure." It's sultry, it's sleek, it's confident. What more could you want?**

At first, it's a classic ballad composed solely of soft vocals and minimal piano. Strings then come in, creating layers upon layers that proceed toward the final chorus. The payoff is well worth the two-and-a-half minutes of slow buildup; we get an entire minute of DK and Seungkwan harmonizing beautifully, trading leading and supporting vocals as a full orchestra kicks in. For a brief moment, it feels like ascending to another dimension. Then, like the end of a long-held breath, the track concludes, finishing as delicately as it began.

There are a few missteps, though. One is a logistical issue: the sublime final chorus was released as a teaser prior to release. As a result, during my first few listens, it didn't hit as hard, and the earlier sections felt underwhelming by comparison. I've learned to appreciate the momentum more, but it's a point that still stands. Curse K-pop companies and their habit of pre-releasing the best part of the song.

The second is a very nitpicky detail, but it's something that still strikes me — there's not enough of a wait between Seungkwan's aching "You didn't come back to me" in the bridge and DK's ""All that's left are echoes" that introduces the final chorus. The listener gets so much development leading up to the climax: give them more than two counts to sit with it, let the stillness make the tension swell even more, and then let the sonical waves crash all at once.

Rating: 8.5/10

PHOTO COURTESY OF PLEDIS ENTERTAINMENT

DK and Seungkwan debut as the vocal subunit DxS on Monday, Jan. 12, 2026.

Guilty Pleasure

Oh my god. Boo Seungkwan, what a voice.

Putting that aside, this is the strongest track on the EP, demonstrating both of the vocalists' lower registers that we rarely hear otherwise, especially in an R&B atmosphere. I shouldn't be surprised: the song is literally called "Guilty Pleasure." It's sultry, it's sleek, it's confident. What more could you want?

During the countdown livestream before *Serenade's* premiere, DK and Seungkwan shared that their staff had to convince them to include this track on the EP. Shout out to them for standing their ground — especially in Seungkwan's case. His textured tone is a perfect match for this style, evident in his husky delivery of "Stop, ah, wait a minute," and the following lines in the second verse.

"Guilty Pleasure" strikes a perfect balance between a chiller but complex instrumental and this more mature side of DK and Seungkwan. Both of their "I'll never sto-o-o-o-o-p" vocal runs are charming, providing a smooth transition to the undeniably addictive choruses. There, the vocalists move seamlessly from chest voice to falsetto. In particular, the rich harmonization and effortless runs in the final chorus make this track such a highlight.

If I had any critiques, it would be that the bridge doesn't stand out very much to me. Aside from a subtle key change, the instrumental remains consistent with the verses and choruses, causing the section to blend together with the rest of the song. Honestly, given how good they sound, it hardly matters.

One final note: Seungkwan. More R&B. Please.

Rating: 10/10

Silence

"Silence" is similar to "Blue" in that it's a slow ballad that builds toward a vocal apex near the end. Here, ambient synths create a warm, twinkling atmosphere before we get a cascading instrumental of soft strings in the finale. A pulsing kick drum punctuates DK's sustained "Ahhhh, oooh" vocalization that is his finest moment on the mini-album, one that reminds me of his best work in Seventeen.

I'd also like to take a moment to highlight the lyrics, which tell the story of a bittersweet, inevitable end to a romantic relationship. Sometimes, it's the mundane details that ache the most — as Seungkwan sings in the second verse, translated from Korean, "A calendar square filled to the brim; the password that marked us." I won't pretend to know much about romance — between MIT and this publication, dating hasn't exactly been a priority — but January, at least from what I've heard from others, seems to be a month of incompatibilities and breakups. By capturing that quiet resignation, this song helps me understand those experiences a bit better.

My only gripe with the song is that its opening section is a little too long, as the ballad piano takes up a full minute. For a track that's only about two minutes and 40 seconds total, this leaves less room to flesh out the later part of the buildup and climax. As a result, it seems slower than it needs to, though I might not know as much ballad ball as I claim to.

Given that half of this EP is composed of ballads, the competition is stiff. On another project, I might've awarded it a higher rating, but here it's outshined by others.

Rating: 8/10

Dream Serenade (Seungkwan solo)

When I saw the tracklist for *Serenade*, the first thing that caught my eye was Seungkwan's nearly five-minute solo runtime — by far the longest track on the mini-album. Considering his role as the heart of Seventeen, it's fitting that this song seems to lend its name to the EP itself.

In an interview with Clash Magazine, Seungkwan describes the song as an expression of "love that continues even after [a relationship] has ended." His vocal talents stand out the most in ballads of yearning like these, where stripped-back production allows his entire range to shine. Even compared to "Blue" and "Silence," the instrumental steps back further, making room for his carefully soft, intimate delivery. He takes his time with the crescendo, filling the quiet space between verses with gentle humming over piano and violin.

As the song builds, Seungkwan's voice rises to meet it. This drawn-out anticipation, just slightly lacking on "Blue," is realized here, thanks to the track's extended length. Each time "Dream Serenade" seems to reach its peak, Seungkwan pushes it even further, his gorgeous, resonant vibrato overflowing with raw emotion as he belts in Korean, "I think I finally know now, the meaning of the word 'love' / Even if only in a dream, I want to tell you that you were love."

Sonically, the acoustic-band arrangement suits DK's and Seungkwan's cheerful tones, where they sound closest to their poppy and bright work in Seventeen. It's a song that would lift my spirits as I begrudgingly force myself to go to class, which only reinforces my conviction that it should open the EP. The subtler harmonies add a flourish to the final chorus, but other tracks accomplish this more effectively. All in all, "Prelude of Love" passes by a little too quickly, and doesn't provide the closure I crave from a final track.

Rating: 7/10

Final Verdict

For the most part, *Serenade* is a very cohesive project focused on the rise and fall of a relationship — one that will almost certainly be in the top rankings of my 2026 Spotify Wrapped.

Overall, my biggest critique is the song order; "Prelude of Love" would've worked far better as an opening that sets the tone for the romance-themed narrative that unfolds over the course of the EP. "Blue," with its resounding finale, feels more like a natural closer. With those changes, I'd be more inclined to overlook the minor criticisms across the individual tracks and give *Serenade* full marks. It's hard to *really* go wrong with a project this vocally driven, but that also sets a high bar for my listening experience. At its best, I was genuinely in awe. At other moments, it was simply pleasant.

Regardless, this EP succeeds in highlighting DK and Seungkwan's vocal strengths, establishing their positions as veteran main vocalists with over ten years of experience and showing that Seventeen is far more than just a performance powerhouse. For those who have been wondering where the live singing is in an industry dominated by heavy processing, *Serenade* offers a clear, melodious answer.

Rating: 9/10

Prelude of Love

For the life of me, I can't understand why Pledis Entertainment would include a song called "Prelude of Love" but then put it at the end of *Serenade*. It's a *prelude*. Emphasis on the "pre-". In addition, opening the EP with this track would make sense thematically, as it describes the giddy, infatuated start of a relationship while the project's latter tracks narrate the resolution and emotional fallout. So when I listened to a full runthrough of the mini-album, I was caught off guard by how abruptly this song interrupted the lingering quiet after "Dream Serenade."

This is a song that demands deliberate focus to fully appreciate its beauty. I mean this literally — after coming back from a walk, I sat down on a bench outside my dorm by the Charles River and gazed wistfully out at the Boston skyline as this song looped in my ears. It was quite a lovely experience, one that made me grateful to be where I am now.

THEATER REVIEW

The American Repertory Theater's 'Wonder' is an absolute must-see

Watching 'Wonder' will have your inner child crawling out from their hiding place and giving you a hug

Wonder

Story by Sarah Ruhl

Music composed by A Great Big World (Ian Axel & Chad King)

Directed by Taibi Magar

American Repertory Theater

Dec. 12, 2025 – Feb. 15, 2026

PHOTO PROVIDED BY HAWVER AND HALL

Members of the company watch Garrett McNally (Auggie) and Nathan Salstone (Moon Boy) in A. R. T. 's production of 'Wonder'.

By Veronika Moroz
SCIENCE EDITOR

This review contains spoilers for the musical.

"Choose Kind." That's the main message of *Wonder*, an original musical premiering at the American Repertory Theatre through Feb. 15. Based on R. J. Palacio's novel of the same name, *Wonder* tells the story of August "Auggie" Pullman (Max Voehl and Garrett McNally), a boy with a craniofacial difference that prevents him from going to school or making friends on the playground, until his parents enroll him in seventh grade at Beecher Prep. Bursting with vibrant colors, tear-jerking musical numbers, and what can only be described as middle school spunk, the musical offers a vision of hope for a more accepting world.

From the very beginning, *Wonder* tackles Auggie's experience of looking different head-on, emphasizing all the ways he is an ordinary kid ("Ordinary") and expanding his passion for outer space into a metaphor for his desire for escapism. The show opens with Auggie and his imaginary friend Moon Boy (Nathan Salstone) pretending to float in outer space. At first, Moon Boy, Auggie's version of himself without a craniofacial difference, takes the singing lead in Auggie's songs, but his playful presence fades away as Auggie gains real friends, gets used to middle school, and finds his own voice.

The role of Auggie Pullman is played by Max Voehl at some performances and Garrett McNally at others. Both actors are around Auggie's age, and, just like him, they were born with craniofacial differences. On the night I attended the show, McNally's performance was so believable that it was easy to forget he was acting. His restrained performance contrasted the stylized theatrical choices of some of the other characters, supporting the show's central themes of kindness, empathy, and seeing people for who they are, not how they look.

Except for the beginning in outer space, *Wonder* takes place in two main settings: Beecher Prep and the Pullman family home, where Auggie lives with his parents (Alison Luff and Javier Muñoz) and older sister Via (Kaylin Hedges). Luff's duets with Auggie were one of the most emotional parts of the show: it was easy to see how much she wanted the best for her son, and how much it hurt her to see anything go wrong. Though Via's plotline was condensed in the adaptation from book to musical, Hedges did a breathtaking job portraying an older sister struggling to manage her own friendships as she enters high school while feeling an obligation to support her younger brother.

PHOTO PROVIDED BY HAWVER AND HALL

Garrett McNally (Auggie) and Donovan Louis Bazemore (Jack) in A.R.T. 's world-premiere production of 'Wonder'.

Despite the bullying Auggie faces at Beecher Prep, the school is also a source of the show's funniest moments. Each classmate has a very distinct personality. The most memorable is Charlotte (Skylar Matthews), Beecher Prep's resident theater kid, whose *Mean Girls*-esque tour of the social scene and gossipy narration of class drama is hysterical in the most middle-school way possible. Auggie's new best friend, Jack Will (Donovan Louis Bazemore), is equally incredible as he shares his joy of being friends with Auggie and navigates attending a school where most students are of a higher socioeconomic status than he is.

In addition to encouraging empathy and envisioning a more caring world, the theater launched its own community service initiatives, such as a food and book drive, in the spirit of *Wonder*. The production team also consulted leaders of the craniofacial difference awareness organization myFace and directed audience members towards their myFace Wonder Project, which uses the *Wonder* book to teach students how to be upstanders to bullying.

The only place where the show might have gotten carried away with its message of empathy is its happy ending; both Auggie and his sister Via end up with more friends than they do in the original book, but maybe that's what the world needs right now.

"Theater may not change the world the way teachers or politicians do, but it can change us," director Taibi Magar wrote in the director's note. "It can remind us of who we want to be."

As the show came to a close, the actors bowed to a final reprise of "Choose Kind," and the audience — families, couples, school-aged students, and kids with their own craniofacial differences — immediately rose to their feet in applause.

"Everyone deserves a standing ovation at least once in their lives," Auggie says in the final scene. With earnest delivery and heartfelt encouragement to see the good in everyone, *Wonder* is certainly no exception.

MIT dives into the future of quantum technology at QMIT launch

Nobel laureates, industry leaders, and members of the MIT community celebrated the launch of the Institute's quantum initiative

By Malakhi Beyah
SCIENCE STAFF WRITER

On Dec. 8, 2025, the Institute launched its MIT Quantum Initiative (QMIT) with a daylong conference that spearheaded quantum-focused collaboration among experts all across campus.

The initiative was launched by MIT President Sally Kornbluth in August with the goal of harnessing quantum science — the study of the complexity of subatomic activity — to solve "the most consequential challenges in science, technology, industry, and national security," according to the QMIT website.

From students and faculty to industry leaders and Nobel laureates, dozens of attendees gathered in the Schwarzman College of Computing to witness how MIT would lead the world into the future of quantum technology.

The quantum future

Chief Quantum Innovation Officer at the Lighthouse Disruptive Innovation Group and MIT Media Lab Research Affiliate Dr. Parfait Atchadé expressed excitement about learning what the future had in store for quantum research at MIT.

"I wanted to be close to see what's next," he said, recounting a discussion he had with QMIT Faculty Director and Professor of Chemistry Danna Freedman PD '12. "The question that I [had for Freedman] was, 'What is the difference between yesterday and today or tomorrow? What will change?'"

While classical computation has already reached its physical limit of complexity, quantum computing has the potential to create elaborate simulations and discover solutions to problems we cannot yet solve.

For example, quantum computing can develop simulations for drugs that drastically increase the human lifespan. This would have various benefits for society. "If, somehow, we are very silly and we want to harm the Earth," Atchadé said, "we can go further [and] make some kind of interstellar travel because we can live long [enough]."

Atchadé described computers as "the key unit of geopolitics." In theory, a quantum computer may be sophisticated enough to bypass the encryption protecting another government's sensitive information. The opposite is also true: nations may be able to use quantum computers to improve the encryption protecting their own important data.

"A company or a country that can build [a] very efficient quantum computer can try to change the role of geopolitics," Atchadé concluded, pointing to the potential detriments quantum computing could have on developing regions. Since MIT launched their quantum initiative in 2025 (instead of 20 years prior), Atchadé has hope for places that still lack quantum research.

"Even if we start in Africa in five years, the race is not yet [over]," he said. Otherwise, "the gap between the country that has the quantum computer [and the one that does not] will be very, very, very high."

Where research and industry collide

According to Duke University Professor Christopher Monroe '87, the co-founder and chief scientist of quantum computing company IonQ, fostering collaboration between academia and industry is critical for accelerating quantum progress.

Because companies typically do not engage in broad, high-level research in the way that academic institutions do, "Private and industrial investments [in quantum computing research] outweigh government research investments by ten to one," according to Monroe.

This disparity would not be a problem if the two sectors operated independently. However, in Monroe's words, "They both need each other, even if they don't know it."

Ideally, a symbiotic relationship would exist between industry and academia. Industry would use academic research to improve the quality of their products, generating hype among the general public. This hype would, in turn, justify more funding for academic research, resulting in a positive feedback loop. There would need to be a delicate balance. "A little hype is okay, but if it's too overhyped, academics will worry about people losing interest in the field," Monroe said.

Monroe then discussed the other aspect of the industrial-academic dynamic in quantum research: heuristics.

Heuristics is a term used in computer science to describe shortcuts for improving problem solving, effectively functioning as "rules of thumb." Heuristic algorithms are preferred when a quick approximate solution matters more than a precise one. Search engines, for instance, often use heuristics to show the most popular search results first, as people typically look for those results. This method is not necessarily precise; just because some results are the most popular does not mean that they are the best results for every user.

Monroe explained how heuristics (which he described as "a problem that you don't know why it works, but it just does") are often favored by those in industry — particularly in quantum computing — because of the need for consistent results without proof. The quantum industry believes quantum computers will be especially valuable in generating unprovable heuristics; conversely, academics avoid heuristics because they lack proof.

"I've been lucky to walk that fine line between both of them, having founded (probably) the biggest quantum computing company ... and being involved in the very research-y side of things as well," Monroe said.

GLORIA ZHU—THE TECH

The MIT Quantum Initiative (QMIT) seeks to leverage quantum technology to generate breakthroughs in fields across MIT.

However, the interaction between industry and academia is almost never where development ends; as QMIT emphasized, quantum research would also require early adopters — those who first embrace a new technology — to succeed.

The importance of early adopters

"Fundamentally, everything in the quantum space relies on early adopters," said Professor Danna Freedman.

Freedman spoke with Broad Institute Founding Director Emeritus and Biology Professor Eric S. Lander about the necessity of early adopters for the success of quantum research. Throughout the discussion, Lander drew parallels between ongoing quantum research and his own work mapping the human genome as part of the international Human Genome Project.

Lander started by highlighting the particular recipe necessary for technological innovation: an equal mix of those driving the technology forward and those inventing new uses for it.

According to him, a textbook example of early adopters' role is MIT's involvement in the development of automated DNA sequencing. While outside companies created automated sequencers, they often relied on MIT engineers to use the technology more effectively. "We would find new uses for their machines," Lander said. This collaboration led to a lasting relationship in which DNA sequencing companies relied on MIT to improve upon their novel technologies.

As for what an early adopter would look like, Lander admitted that the answer was a little unintuitive. To him, those with decades of experience were less helpful due to fixed mindsets from years in the field. Instead, Lander suggested the ideal early adopter would be "a generation of young people who did not know [what they could and couldn't do]" — those who would think openly about the technology.

"Then," he continued, these early adopters would have resources at their disposal to "do crazy things, because that's how all progress happens."

Reflections on the success of QMIT

The Tech interviewed attendees of QMIT at the reception following the main events.

Some attendees were excited to hear from leading experts at the conference, as well as what they had to say about the future of quantum research at MIT. However, some were disillusioned by the apparent lack of specifics around the Institute's next steps; it was unclear to them how much this initiative would cost or where it would be based.

Nonetheless, those involved with QMIT commended the conference's accomplishments.

When asked about what he hoped attendees would take away from QMIT, Monroe reflected on how remarkable it was to have so many pioneers in quantum information science in one place, especially as specialists in their own respective sub-fields.

"It's a big deal that MIT is formalizing this union," Monroe said. "Hopefully, [these experts] will lead the way in terms of research in the future."

The quest to make vaccines affordable

Koch Institute principal investigator Dr. Ana Jaklenec on translating experiments in academia into commercialized real-world products

By Jojo Placides
SCIENCE STAFF WRITER

A single shot can protect a child from a life-threatening disease. Yet for the children living in the poorest regions, that protection remains out of reach. Of the 1.5 million who die each year due to preventable infections, 99% live in low- and middle-income countries.

Koch Institute principal investigator Dr. Ana Jaklenec PD '13 has been working on developing cheaper and more effective vaccines. Through her research on single-injection vaccines, Jaklenec hopes to make immunization more accessible.

Curiosity in polymers

Though she's a leading figure in the biotech industry, Jaklenec did not come from a family with a scientific background; her dad was a pilot and her mom studied French literature. She discovered her passion for science in a high school chemistry class. "We made banana flavoring," Jaklenec recalled. "[We] just mixed a bunch of liquids and all of a sudden, [we] smelled it. It's this idea of making things from invisible [stuff], almost like magic."

After completing a PhD in biomedical engineering at Brown University, Jaklenec came to MIT to pursue postdoctoral studies under Koch Institute Professor Robert Langer. It was here that she became fascinated by the potential of polymers — large molecules made of small repeating units. Polymers are central to biomedical research, and it was their versatility that intrigued Jaklenec. "They're in everything in our life," she emphasized.

As it turns out, polymers are one of the key tools Jaklenec's lab uses to make life-saving treatments more accessible.

The single-dose vaccine

Oftentimes, vaccines are administered in multiple doses at different times to maintain the body's protection against a certain disease. However, on Oct. 1, Jaklenec presented a solution during the MIT.nano Summit that would eliminate multi-dose injections by packing the entire vaccine into a single injection.

In 2018, Jaklenec worked with Langer to show how two doses of the polio vaccine could be delivered at once using a polymer called poly(lactic-co-glycolic) acid (PGLA) that encases it. "[Fewer] syringes and needles are used, so [fewer] doctor visits are needed. There's an added cost to having everything in one injection, but [overall] it costs less than multiple visits," Jaklenec explained.

To Jaklenec, PGLA has one characteristic that makes it the ideal polymer: its ability to degrade. "By changing its molecular weight, we can change when or how long it takes for it to degrade," she said. However, as it breaks down, PGLA makes its surrounding environment acidic, which damages the vaccine and reduces its effectiveness.

In search of a solution, Jaklenec's team turned to polyanhydrides — biodegradable polymers that create a less acidic environment when they break down. But there was another problem: polyanhydrides are difficult to manufacture. Due to the polymers' physical properties, solvent-based methods didn't work, so Jaklenec's lab spent years looking for ways to create the precise structures necessary for a single-injection vaccine. Ultimately, they found a solution involving an unexpected combination of methods from microelectronics and semiconductor manufacturing.

Using a special technique called StampEd Assembly of polymer Layers (SEAL), Jaklenec created particles that release vaccine doses at different times mice. First, she used silicon molds to shape polyanhydride cups made with microfabrication technologies. Then, she filled these cups with the vaccine antigen, promptly sealing them afterward.

"We had to add lids to seal the cups, and that required [careful] alignment with the base," Jaklenec said. She accomplished this with a mask aligner — a core tool in the fabrication of microelectronics that positions the lid and the base with high precision.

Although clinical trials may not start until 2027, Jaklenec is working with other researchers to launch a company and raise money for developing good manufacturing practices, ensuring the SEAL process meets established regulatory and safety standards. The team is also scaling production so millions may receive these single-injection vaccines in the future.

Mucosal vaccinations

Generally, vaccines are administered through injections into the bloodstream or tissue. These types of vaccinations are called parenteral vaccinations. However, Jaklenec is exploring an alternate type of vaccine: mucosal vaccinations.

Unlike parenteral vaccinations, mucosal vaccinations are taken orally. For example, the global polio eradication movement used the mucosal oral polio vaccine (OPV) from the 1960s to the 2000s due to its ease of administration and low cost of manufacturing.

Nowadays, however, most vaccines are injected into the body. While these injected shots are "very safe," Jaklenec noted that they don't provide a type of protection called mucosal protection, which helps the body fight off infection in the gastrointestinal tract.

Without mucosal protection, copies of the virus can still linger in this tract, where they may mutate into new virulent strains. "In Israel, where there are really high vaccination rates; [researchers] looked at the sewer system and saw the virus," Jaklenec said.

To address this, Jaklenec's lab also focuses on oral vaccinations that provide mucosal immunity. In addition to being more effective, oral vaccinations will also be cheaper to make and avoid selective pressure on the virus to mutate the way a parenteral vaccine might. Specifically, in collaboration with Harvard Medical School Professor Ulrich von Andrian, Jaklenec has developed a mucosal treatment derived from Vitamin A. "They give a signal that tells the immune cells to protect the gut," Jaklenec explained.

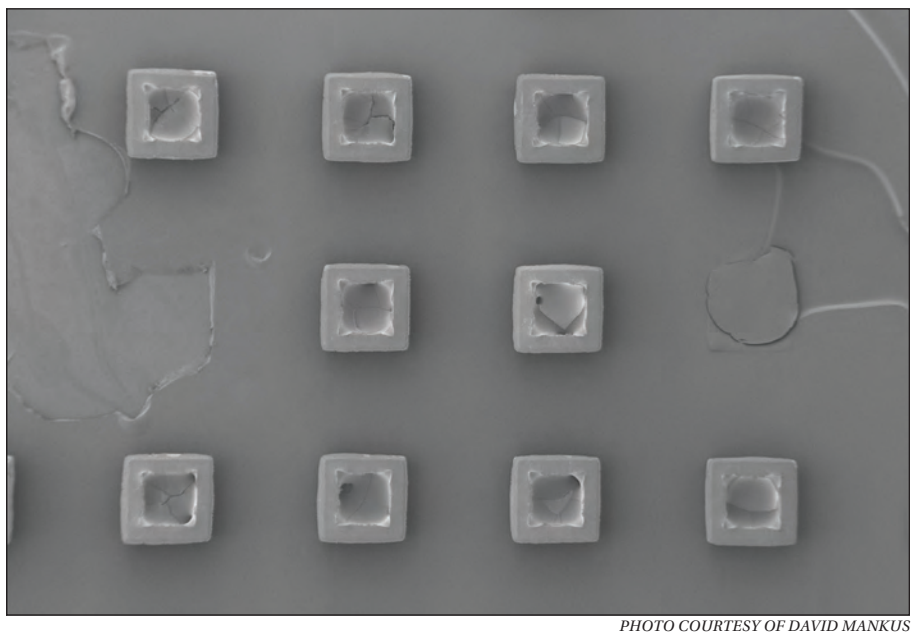


PHOTO COURTESY OF DAVID MANKUS

Scanning electron microscopy images of microparticle bases made of polyanhydride film filled with the vaccine antigen

Steps towards affordable healthcare

In developing countries, where infrastructure, storage, and communication may be unreliable, vaccines can degrade and lose their quality.

According to Jaklenec, the solution is decentralized manufacturing: producing vaccines locally and on demand rather than relying on large, commercial factories. "You could give more power to local people in their communities," she said.

Jaklenec also plays a key role in researching microneedle vaccine patches, which are small, painless arrays of tiny needles designed to deliver vaccines through the skin instead of a traditional injection. Her efforts in decentralized manufacturing would primarily focus on creating these patches.

"Then [other people] can make these patches there and easily administer them. They don't need these big needles, sharps containers, and hazardous waste [disposal]," Jaklenec said.

From academia to practice

As the co-founder of several companies — Particles for Humanity, OmniPulse Biosciences, and Vitakey — that translate lab discoveries into commercial therapeutics, Jaklenec must balance the complexity of her lab's technology with the resilience needed for practical use. "Manufacturing in a simple way is important because it also lowers cost. And the process becomes more robust," Jaklenec said.

She also sees academia as a breeding ground for exploration. "Academia [provides] a safe place to experiment and innovate, and then it self-selects the ideas that are feasible to commercialize and bring to people," Jaklenec explained.

In her work, Jaklenec also collaborates with global health stakeholders, including non-governmental organizations, governments, and companies, to gather data on local needs to analyze existing priorities and lab-driven solutions.

"We have a very close collaboration with the Gates Foundation, [with] all these partners and stakeholders that have eyes on the ground and can communicate the pressing issues in specific areas," Jakenec said.

That, in turn, provides Jaklenec with opportunities to test her developed technologies to assess what works and what doesn't.

For example, Jaklenec worked with Indian company Tata Chemicals to create fortified salt — salt with added iron to prevent anemia. However, the company has struggled to commercialize the final product, as the visibility of the dark iron in the salt prevents people from buying and using it.

"They're giving us feedback from what they're seeing in the market. That helps us know some of the things that we need to be thinking about," Jaklenec explained.

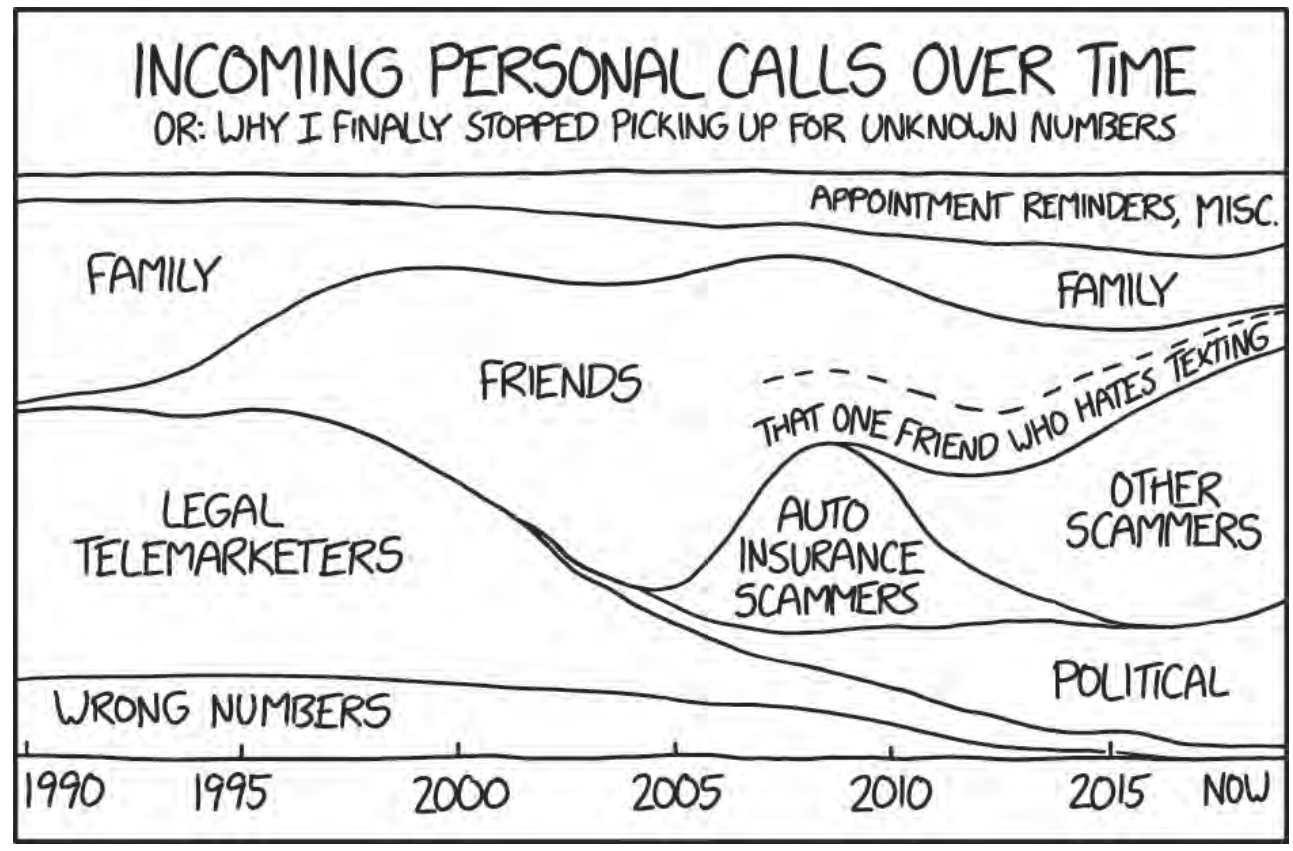
In terms of the next big questions in vaccine delivery, immunotherapy, global health, and other biotech-related endeavors, Jaklenec highlighted that rapid developments in artificial intelligence may allow drugs to get to people faster.

"Over the next five to ten years, the biggest shift is going to be the use of AI to understand biological mechanisms for specific molecules or drugs, and also shortening [testing times] so [treatments] get to [patients] faster and perform better," Jaklenec said.

As a leading biotech figure in both academia and industry, Jaklenec has made significant strides towards making accessible treatments. From single-dose vaccines to microneedle vaccine patches, her lab's work helps ensure that the single shot that may save a child's life can be accessible to all.

"It's a big deal that MIT is formalizing this union," Monroe said. "Hopefully, [these experts] will lead the way in terms of research in the future."

[2053] Incoming Calls



I wonder if that friendly lady ever fixed the problem she was having with her headset.

[2881] Bug Thread

After some account issues, we've added 6 new people from the beach house rental website support forum.

xkcd
A WEBCOMIC OF ROMANCE, SARCASM, MATH, AND LANGUAGE

by Randall Munroe

VERONIKA MOROZ—THE TECH

Snow on Killian court on Sunday, Jan. 25.

CONRAD STRADEN—THE TECH

A cat-shaped snowman sits on Killian Court on Monday, Jan. 19, 2026.

GRACE ZHANG—THE TECH

Grace Zhang '28 lies in a foot of snow on Sunday, Jan. 25, 2026.

Students built gingerbread model of Stata Center

Bad Ideas, from Page 1

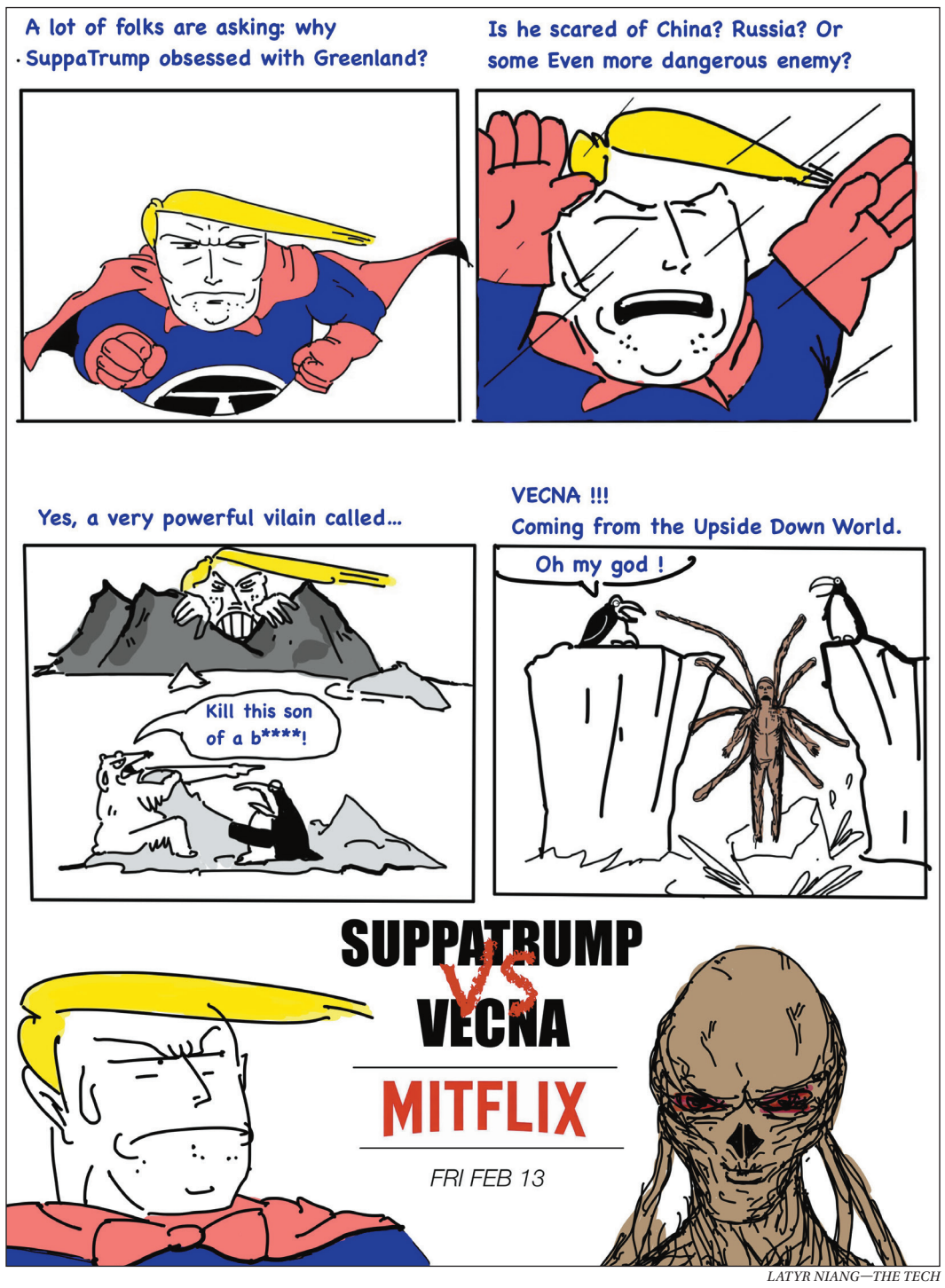
rall, Ang liked all the events: "We thought all the events were amazingly 'BAD' in their own ways!" she wrote on behalf of the event chairs.

Besides traditional events such as the Green Building Challenge, this year also featured a number of new events, including Ignoramus Haircut and Gingerbread Stata.

In Ignoramus Haircut, students provided free haircuts in Lobby 10 if people shared gossip with them. Event organizer Eileen Zu '26 shared that she had little experience with cutting hair before the event. "The power of Wikihow helped a lot," Zu wrote. She credited Natalia Chavez '29 for helping her and event organizer Katrina Li '26 with haircuts so "people left not looking as chopped as one would've expected."

In Gingerbread Stata, organized by Gloria Zhu '26, students used gingerbread sheets to build a gingerbread house in the shape of the Stata Center. The event was based on the Christmastime idea of constructing an "elaborate gingerbread structure using laser cutting." Zhu chose Stata because its architecture is made of many "smaller modular structures," allowing people at the event to work in parallel. According to Zhu, the event "went really well," and liked how people added features, such as a fire-spinning man in the amphitheater, to Stata.

"Bad Ideas is a great time to try things during IAP and a great way to engage with your communities," Ang wrote.



LATYR NIANG—THE TECH

The Real Enemy of SuppaTrump